He‘eia Community Development District Plan

Hawai‘i Community Development Authority

Preliminary Draft April 2021

Manaʻo Hoʻokō (intent):

Recognizing the value of ahupuaʻa management principles, promote and cultivate ʻāina momona (abundance) for the lands of Heʻeia for present and future generations through culturally appropriate agriculture, education, and natural resources restoration and management.

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1.0 Overview

1.1 Introduction

The He‘eia Community Development District, hereafter referred to as the He‘eia CDD or District, was established in 2011 by the Hawai‘i State Legislature pursuant to Hawai‘i Revised Statutes (“HRS”) Chapter 206E-202. The He‘eia CDD is located on the windward side of the island of O‘ahu in the He‘eia ahupua‘a in the district of Ko‘olaupoko. The He‘eia CDD is also identified as the He‘eia wetlands.

In He‘eia, streams from the Ha‘ikū and ‘Ioleka‘a Valleys created an abundant marshland called Hoi. He’eia’s frequent rainfall, abundant streams, broad valleys and flatlands helped to establish the area as a productive agricultural area. Early historical accounts indicate that the Hoi was a much-desired area due to its rich fertile soil and access to water. He‘eia’s expansive taro lands provided a sustainable food source for the community.

Historically, taro remained the dominant crop in He‘eia until the 1870s followed by rice, sugar cane, pineapple and then back to taro between the 1920s through the 1940s. (Devany et al. 1976) The He‘eia wetlands eventually transitioned into grazing for livestock, resulting in the extensive overgrowth of California grass and other non-native plants.

In the early 1990s, plans to convert the He‘eia wetlands into an exclusive residential community with a marina and golf course were met with strong community opposition and were eventually blocked. In an effort to preserve the He’eia wetlands, a land exchange between the Hawai‘i Community Development Authority (“HCDA”) and landowner Estate of Bernice Pauahi

Bishop was executed in 1991 that transferred approximately 406 acres of land in He‘eia to the Authority.

At its meeting of July 1, 2009, the HCDA Board authorized the Executive Director to enter into a long-term lease with Kāko‘o ‘Ōiwi, a community-based non-profit corporation. Kāko‘o ‘Ōiwi’s primary mission, through its Māhuahua ‘Ai o Hoi (He‘eia Wetland Restoration Strategic Plan), is to restore the He‘eia wetlands into a working agricultural and cultural district. The HCDA and Kāko‘o ‘Ōiwi entered into a 38-year lease, effective January 1, 2010. Upon execution of the lease, Kāko‘o ‘Ōiwi along with its partners has worked toward restoring the wetlands by converting fallow land into productive lo‘i and agricultural gardens, planting fruit-bearing trees, renovating historic roads and kuaona, as well as removing invasive species such as the mangrove in the area. In addition, the construction of a poi mill and community area, capable of producing value added food products for resale, will be completed in 2021.

On July 8, 2011, the Hawai‘i State Legislature established the He‘eia CDD. The HCDA was designated the local redevelopment authority of the district to facilitate culturally appropriate agriculture, education, and natural resource restoration and management of the He‘eia wetlands. The He‘eia CDD is identified as Tax Map Key Parcels: 1-4-6-16:001 and 1-4-6-16:002 (owned by the HCDA) and 1-4-6-16:004, 012, and 017 (owned by various owners of kuleana parcels).

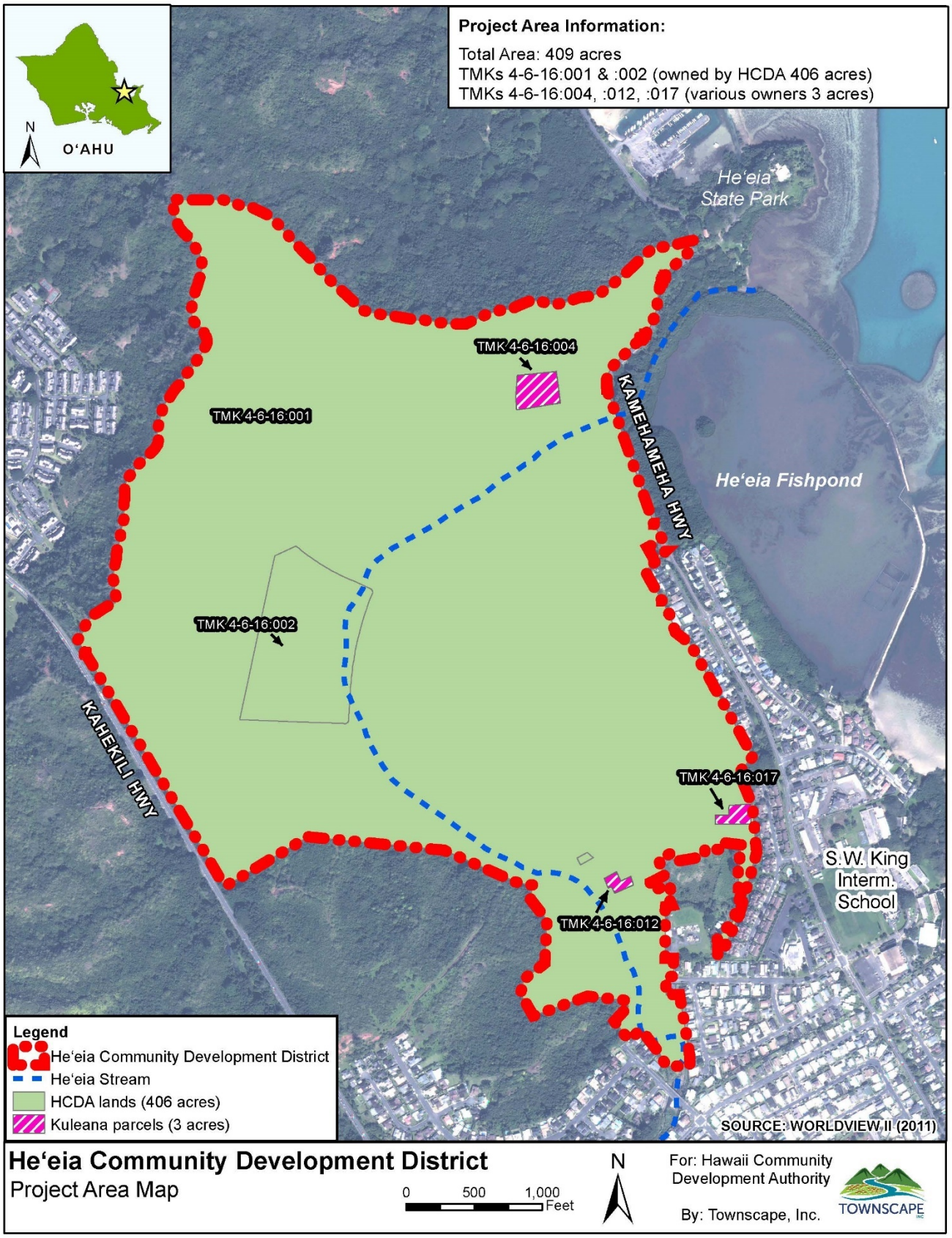


Figure 1: He'eia CDD District Boundary

1.2 Purpose and Legislative Intent

The purpose of the He‘eia CDD Master Plan is to fulfill the provisions of HRS Chapter 206E which requires that a master plan be developed following the establishment of the He‘eia CDD. This He‘eia CDD Plan shall guide the restoration, development and the management of the District. The He‘eia CDD Plan establishes the vision and goals for the District; characterizes past and existing conditions of the District; establishes land uses for the District; and proposes strategies for achieving the District’s vision and goals.

Development guidance policies were established by the State Legislature to govern the HCDA’s planning activities for the He‘eia CDD. These policies are found in HRS Chapter 206E-203 and include the following:

1. Development shall be in accordance with the He‘eia master plan, except as it conflicts with the Hawai‘i state constitution and the HRS;

2. With the approval of the governor, and in accordance with law, the authority, upon the concurrence of a majority of its voting members, may modify and make changes to the He‘eia master plan to respond to changing conditions; provided that prior to amending the He‘eia master plan, the Authority shall conduct a public meeting pursuant to HRS Chapter 92 to inform the public of the proposed changes and receive public input;

3. The Authority shall provide, to the extent feasible, maximum opportunity for the restoration and implementation of sustainable, culturally appropriate, biologically responsible, or agriculturally beneficial enterprises;

4. The Authority may engage in planning, design, and construction activities within and outside the District; provided that activities outside the District shall relate to infrastructural development, area-wide drainage improvements and sediment transport mitigation, roadway realignments and improvements, and other activities the Authority deems necessary to carry out redevelopment of the district and implement this part. Studies or coordinating activities may be undertaken by the Authority in conjunction with the county and appropriate federal and state agencies and may address infrastructural systems, natural-resource systems, and other activities;

5. Planning, replanning, rehabilitation, development, redevelopment, and other preparations for the restoration of cultural practices, education, natural resources, and agriculture related activities shall be pursued;

6. Hawai‘ian archaeological, historic, and cultural sites shall be

preserved and protected to the extent feasible while allowing for continued use of the property for cultural activities, education, agricultural and economic pursuits, and natural resource restoration;

7. Endangered species of flora and fauna shall be preserved and protected to the extent feasible;

8. Land use and redevelopment activities within the district shall be coordinated with and, to the extent possible, complement existing county and state policies, plans, and programs affecting the District;

9. Public facilities within the District shall be planned, located, and developed to support the redevelopment policies established by this part for the district, the master plan approved by the Governor, and rules adopted pursuant to this chapter; and

10. Special management area permit administration for the District shall continue to be under the authority of the City and County of Honolulu.

1.3 Project Background

Pursuant to HRS Chapter 206E-5(b), the HCDA embarked on a comprehensive community-based planning program to develop the He‘eia CDD Plan and Administrative Rules (“Plan and Rules”). Development of the He‘eia CDD Plan and Rules included background research and data collection; consultations with stakeholders, agencies and community members; as well as the evaluation and analysis of existing data and information pertaining to the District.

Consultations included informal talk-story sessions, as well as formal community and stakeholder meetings. Participants included kūpuna, kama‘āina, residents and landowners of He‘eia, stakeholders and area farmers, non-profit organizations, government agencies, as well as experts in the fields of hydrology, flood control, and water quality. Approximately 140 individuals participated in consultations. Presentations were also made to the Kāne‘ohe, Kailua, and Kahalu‘u Neighborhood Boards.

2.0 Context:

2.1 Regional Setting

The He‘eia CDD is located in the He‘eia ahupua‘a of the Ko‘olaupoko region of O‘ahu. The He‘eia CDD is bounded by Kamehameha Highway on the east, the Crown Terrace subdivision on the south, Kahekili Highway to the west, and a private landowner and the City and County of Honolulu on the north. He‘eia Fishpond and the He‘eia State Park are located east of the He‘eia CDD on the makai side of Kamehameha Highway.

Expansive lo‘i terraces circa 1928.

2.2 Historic and Cultural Background

Early historical accounts of He‘eia indicate that the ahupua‘a of He‘eia was very productive in terms of marine and terrestrial food resources. Resources for food included the fishponds along Kāne‘ohe Bay and lo‘i producing a significant amount of taro.

Historical accounts also record major battles of conquest over the island of O‘ahu during the late 1700s. He‘eia’s productive agricultural lands derived from the large fishponds and lo‘i terraces, supported the armies of prominent royalty such as Kahekili (King of Maui) and Kahahana (King of O‘ahu). Kahekili prevailed in the battle for O‘ahu, with most of his chiefs and followers staying at Kāne‘ohe and He‘eia. King Kamehameha followed a decade later, conquering the Island of O‘ahu. He kept the ahupua‘a of Kāne‘ohe as his personal property with He‘eia also retained as Kamehameha lands. (AIS 2014:12)

He‘eia remained under direct control of the Kamehameha dynasty until the Māhele. In 1848, as part of the Māhele, Abner Paki received the ahupua‘a of He‘eia as his personal property. He had been the konohiki (land agent/overseer) of He‘eia from around 1830. The Catholic Mission also received large tracts of land within He‘eia, that were a gift to the Mission by Kamehameha III.

The Kuleana Act of 1850 allowed for private ownership of land by maka‘āiana, people and families who were actually living and working on the land to produce food. There were 28 Kuleana awards within and in close proximity to the District.

Taro remained the dominant crop within the District until the 1870s. During this period, an influx of Chinese immigrants obtained leases to cultivate rice and then sugar into the 20th century. In 1878, the He‘eia Sugar Plantation built the He‘eia Sugar Mill and by 1880, the He‘eia Rice Plantation was established and a rice mill was built within the District. By the 1890s, the cultivation of pineapple began in He‘eia which replaced sugar and became the main industry in the area between 1910 to 1925.

Taro made a come-back in He‘eia between 1920 and the 1940s which also coincided with declines in rice production. Much of the former lo‘i lands were returned to taro production. Between the 1930s and 1940s, World War II brought U.S. military presence to He‘eia and a Naval Reservation and He‘eia Radio station was established along the coast where the Samuel Wilder King Intermediate School is now located. In the 1950s, Kāne‘ohe transitioned into a suburban community during a residential shortage on the island of O‘ahu. From the 1960s through the 1980s, the wetlands were primarily used for pasture or became uncultivated land.

In July 2010, upon execution of the lease with HCDA, Kāko‘o ‘Ōiwi along with its partners has worked toward restoring the wetlands, eliminating invasive species, establishing an agricultural program and developing cultural and education programs that have become a valued part of the Kāne‘ohe community.

Kūpuna Reflections on He‘eia. Although the expansive lo‘i terraces that once characterized the landscape of He‘eia are no longer visible today, residents and lineal descendants of He‘eia remember how it was before.

Aunty Alice Hewett, a kūpuna of He‘eia who grew up in the District in the 1930s and 1940s and whose ancestors lived in He‘eia for more than two centuries, described the landscape of He‘eia as a rural place where people worked the land and common practices included taro cultivation, cattle ranching, and raising livestock. “There was nothing there before,” she said, noting the many residential areas that have since developed adjacent to the He‘eia CDD. People also accessed the ocean frequently to supplement their diet with fish.

Aunty Alice explained, “Everything was lo‘i, pastures, and farms. There used to be all taro right up to the highway (Kamehameha) and up to the backside of Sears. All the way up was all taro. I don’t remember all the twenty different types, but I remember the purple taro. This place was full of lo‘i.” There was also a cattle pasture with a dairy across the street from her house near the He‘eia CDD. Below the pasture, a Japanese man grew taro all the way up to Kahekili Highway.

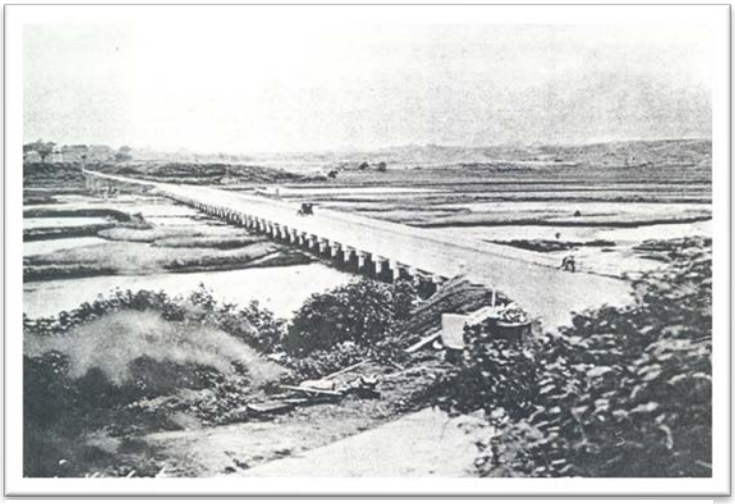
“**Taro was abundant**,” she said. Taro was central to life in He‘eia and poi, along with rice, was the main food staple. Breakfast often consisted of taro with cream and sugar. “We never had pa‘i‘ai (undiluted poi), when we didn’t have enough poi, we’d mix it with flour,” she said. There were four poi mills in the area in addition to her family’s poi mill near King Intermediate School. The mills were situated at: Ha‘ikū Road, Kāne‘ohe, Waiāhole, and in the He‘eia CDD. Her cousin opened a poi shop and though the building was not large, it produced “barrels and barrels” of poi that sold at $2 for 5 pounds. Despite the abundance and importance of poi, Aunty Alice described making poi as hard work.

“Poi is a lot of work. When the taro is in the ground, it’s fine. It’s growing for months. But making poi is a lot of work. To make poi, we had to clean the taro before school and the boys would steam them at 1 AM. We also delivered poi but sometimes it was hard because people wouldn’t pay us.” Aunty Alice Hewett

Wai (fresh water) was also central to life in He‘eia, not only for taro cultivation but also as an important habitat for many organisms including fish and crustaceans that supplemented the diet of the residents. The He‘eia Stream began where the Ha‘ikū Stream meets ‘Ioleka‘a Stream. Aunty Leialoha “Rocky” Kaluhiwa has fond memories of the streams of He‘eia:

“*There were streams everywhere. In Ha‘ikū, almost every house had a lo‘i, a pig farm, and the stream would help. There were so many streams but building the roads took up many of the streams. We used to drink the water up at Ha‘ikū Valley. Now, cannot. We used to walk all along the side [of the He‘eia Stream] and catch crayfish with the midrib of the coconut leaves. There were no ‘ōpae there because the ‘ōpae only live by the ocean. There were also ‘o‘opu in the streams. Meheanu, a kia‘i (guardian) of He‘eia Fishpond, also guards the He‘eia Stream. There’s a time when she comes, and she comes in different forms*,” she said. Aunty Rocky stressed the importance of keeping the stream open and flowing into the ocean.

The He‘eia bridge is also mentioned by kūpuna in their memories of He‘eia. “*Before the bridge, there was a road that went down to the fishpond and the fishpond belonged to Bishop Estate*. *We used to go there every day to catch crab. The whitest crabs. That place had a beautiful white sand beach*.” Aunty Rocky Kaluhiwa.



He‘eia Bridge

Despite the many changes that time has brought to the District, taro has remained an important element in the identity and memories of its people. Kūpuna and lineal descendants of He‘eia described the landscape of He‘eia as a place where people worked the land and common practices consisted of taro cultivation, cattle ranching, and raising livestock. According to the kūpuna, He‘eia was also made up of close-knit families where people grew up like brothers and sisters; it was viewed as beautiful, open and free.

Deep aloha for He‘eia is shared by kūpuna and the community; they are committed to creating a legacy of stewardship for future generations. Many expressed that they would like to see lo‘i terraces fill the He‘eia landscape once again, transforming the District into a center for kalo production and agriculture, bringing food abundance and security back to the region.

Wahi Pana (Place Names) and Mo‘olelo (Stories). He‘eia was named for the grandson of the demigod ‘Olopana, an uncle of Kamapua‘a (Pukui et al. 1974). The child was adopted by the goddess Haumea, also the mother of Pele, who named him He‘e-ia after a tidal event that, “washed (he‘e‘ia) the[m] out to sea and back, after which they were victorious…[d]uring a battle with people from Leeward O‘ahu” (Pukui et al. 1974:44). He‘eia grew into a handsome man who fell in love with Ka‘ohelo, a younger sister of Pele and Hi‘iaka [Kahele 1918 - 1919, 5:576-582] (cited in Kelly 1975:2).

He‘eia Fishpond, circa 1930

He‘eia Fishpond is one of the remaining ancient fishponds on the island of O‘ahu, built approximately 600-800 years ago by residents of the area. It is located makai of the He‘eia CDD. Traditionally, walled fishponds were guarded by water spirits, or akua mo‘o, whom people depended upon to assure an abundance of fish (Kelly 1975:2).

Mo‘olelo tell us that the He‘eia Fishpond was guarded by Meheanu, a water spirit who could transform herself into the form of a lizard (mo‘o), eel, or frog. Meheanu is said to have dwelled at Luamo‘o, a place described as “a small land adjacent to the pond.”

Luamo‘o is a small area located where freshwater intercepts seawater in the He‘eia CDD . The ability of Meheanu to transform between fresh water forms as a frog and a lizard, as well as an eel that could inhabit saltwater, is suggestive of estuarine environments at Luamo‘o. The mo‘olelo of Meheanu also tells of the historic land use of the area which was once abundant with hau.

2.3 He‘eia Ahupua‘a and Watershed

Traditionally, an ahupua‘a is a land division which ran from the mountains into the sea and included all of the natural resources that a community would need to support itself. Generally, this style of land division allowed a native community access to the uplands for forest resources, the central plains area for pasture and agriculture, a freshwater source such as a spring or stream, and often extended into the ocean providing access to coastal resources. As an agricultural society, food production was paramount and food produced and gathered in the ahupua‘a supported the maka‘āinana who tended the land as well as the konohiki who oversaw the land.

He‘eia ahupua‘a is one of eleven ahupua‘a in the moku (district) of Ko‘olaupoko. He‘eia ahupua‘a is approximately 4,200 acres in size and extends from the top of the Ko‘olau mountains to the sea, and from the northwestern portion of Mōkapu Peninsula in the south to Pu‘u Mā‘eli‘eli in the north.

Historic accounts and documentation of the 1800s indicate that lands within the He‘eia ahupua‘a were extremely productive. (AIS CSH 2014, p. 13). Frequent rainfall, ample streams, broad valley bottoms, and flatlands between the mountains and the sea, provided ideal conditions for agriculture and aquaculture in He‘eia. The richness of the region was attributed to a

functioning water system that flowed throughout the ahupua‘a from the valleys of Ha‘ikū and ‘Ioleka‘a, through the wetlands of He‘eia, to Kāne‘ohe Bay. Because of its high productivity, the lands of He‘eia ahupua‘a were considered very valuable.

A watershed is defined as a drainage basin that catches, collects and stores water that travels toward the ocean via rivers, streams or through subterranean springs or seepages. The He‘eia watershed is approximately 3.5 square miles in size and extends from the peaks of the Ko‘olau mountains, including the valleys of Ha‘ikū and He‘eia, to Kāne‘ohe Bay.

The He’eia CDD is centrally located within the He’eia ahupua‘a and watershed. Given its significant location, the restoration, maintenance and future uses of the He‘eia wetlands are key elements needed to maintain the overall health of the He’eia ahupua‘a and watershed.

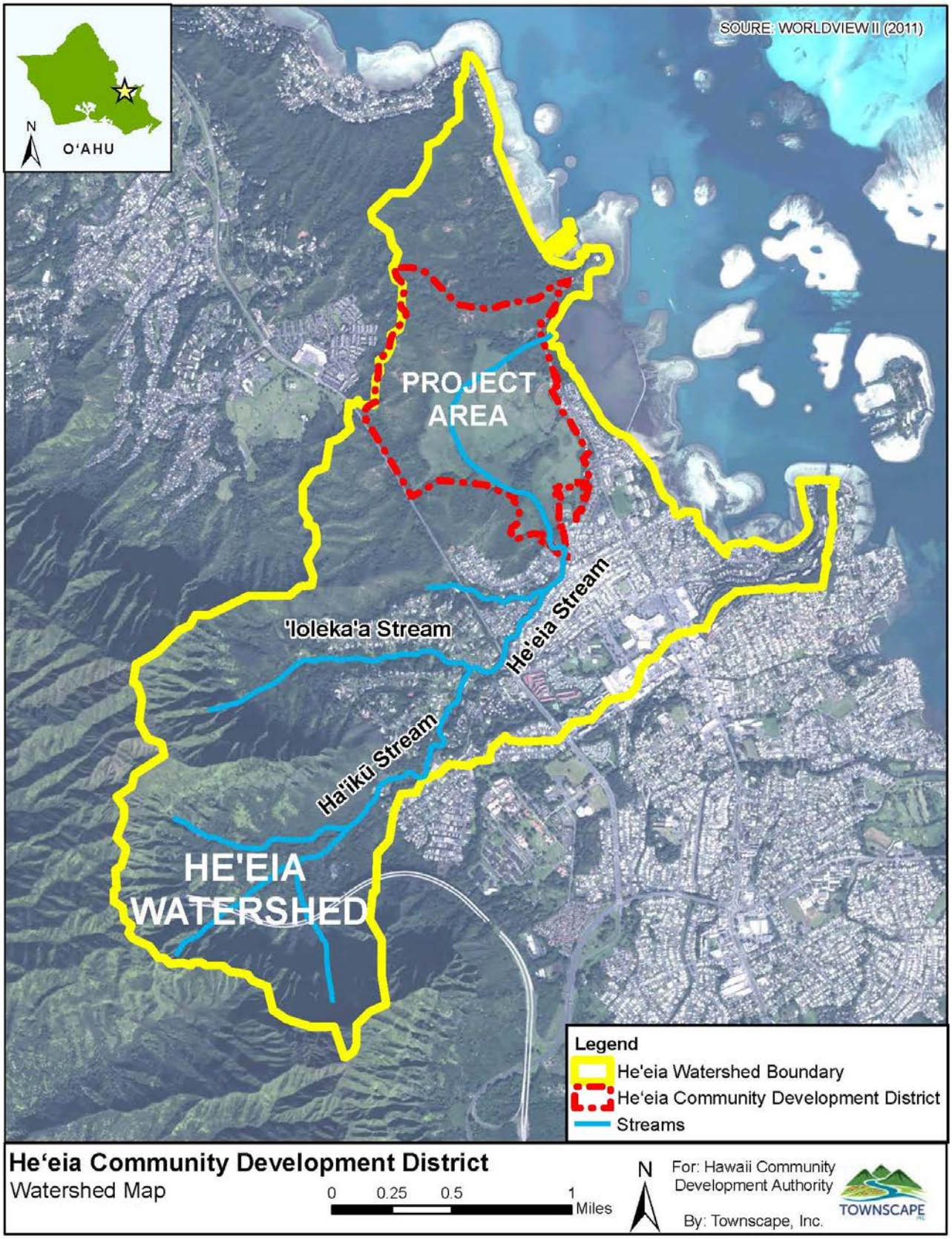


Figure 2: Watershed Map

2.4 Land Ownership

Approximately 406 acres of land within the He‘eia CDD is owned by the HCDA. In addition to HCDA, there are three privately-owned parcels of land within the District, totaling approximately 3 acres. The privately-owned parcels are identified as ‘kuleana’ parcels.

Kuleana Lands. The Kuleana Act of 1850, initiated by King Kamehameha III, created Hawai‘i's first system of private land ownership. Through the Kuleana Act, King Kamehameha III created a process that allowed the hoa‘āina (native tenants) to claim and obtain alloidal title to the land where their family homes were built and where they grew their food.

As a result of the Kuleana Act, 93 kuleana or land commission awards (“LCA”), totaling 203 acres of land, were granted for property in He’eia. There were 28 LCA within and in close proximity to the He’eia CDD. LCA claims within the He‘eia CDD indicate that the land at the time of the Kuleana Act was used primarily for lo‘i cultivation and residences. (AIS CSH 2014 p.13).

Kuleana rights include reasonable access, agricultural rights, gathering rights, rights to a single-family dwelling, water rights and fishing rights. Kuleana rights included the following:

- Reasonable access to land-locked kuleana from major thoroughfares;
- Agricultural uses, such as taro cultivation;
- Traditional gathering rights in and around the ahupua'a;
- A house lot, typically ¼ of an acre;
- Sufficient water for drinking and irrigation of agricultural crops from nearby streams, including traditionally established waterways such as ‘auwai; and
- Fishing rights in the kunalu (the coastal region extending from beach to reef).

In addition to the HCDA, several major landowners own significant amounts of land in the area adjacent to the He‘eia CDD. Major landowners include:

- Kamehameha Schools
- The State of Hawai‘i
- The City and County of Honolulu

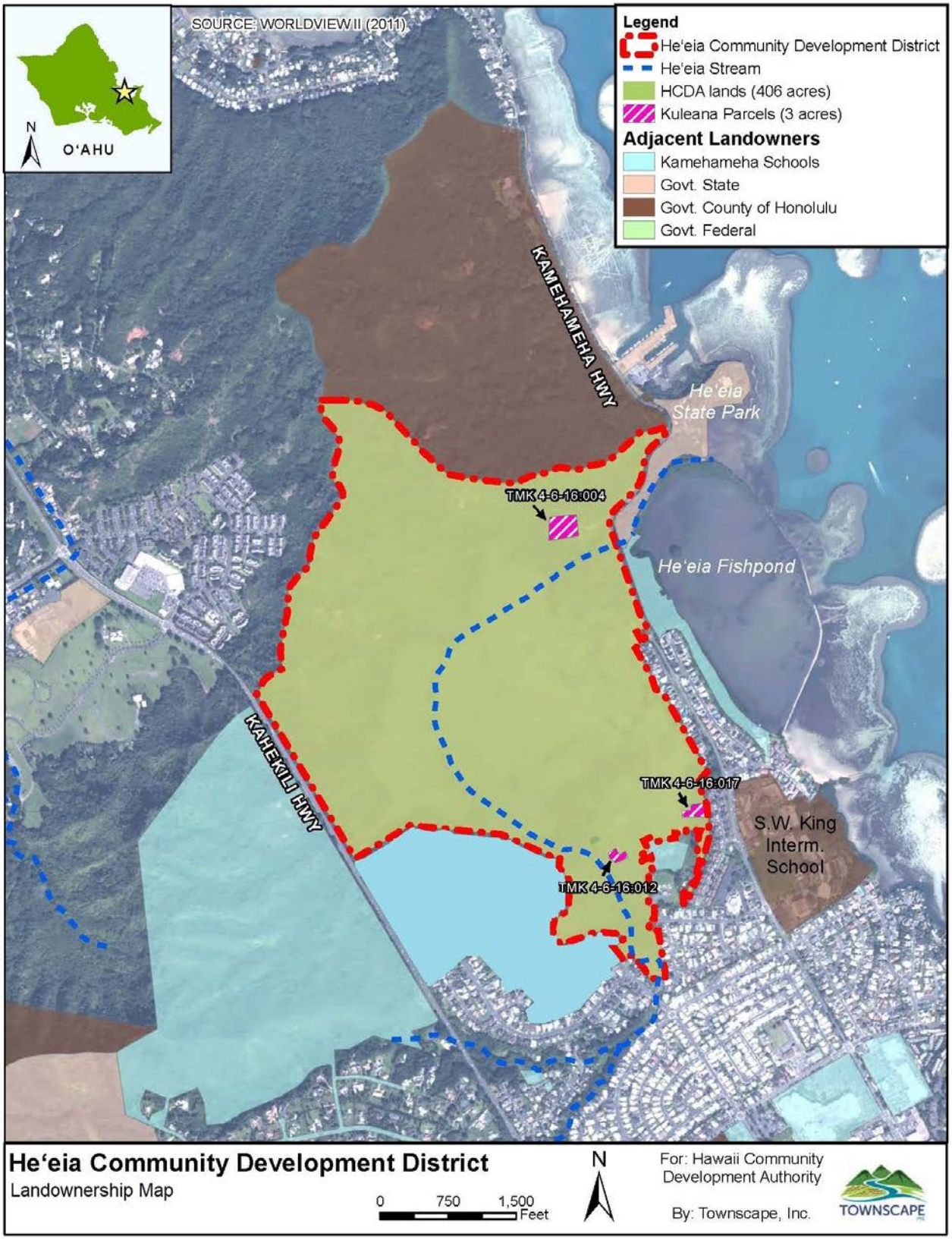


Figure 3. Landownership Map

2.5 Population and Socio-Economic Profile

The U.S. Census designated area of He‘eia encompasses approximately 3.1 square miles and includes Ha‘ikū Valley and He‘eia Kea. Per U.S. Census data of 2017, He‘eia’ s population was 4,811. The median age in He‘eia was 50.6 years old with more than half (56%) of its population between 18 to 64 years of age. The average family size was 3.3. Approximately 97.5% of the He‘eia population graduated from high school and about 43.4% of residents obtained a bachelor’s degree or higher. The median household income was approximately $123,750 which exceeded the State’s median household income of $74,923. Approximately 1.7 % of the He‘eia population was below the poverty line.

There were approximately 1,581 housing units with an occupancy rate of 98%. Of the 1,581 housing units, 91% were owner occupied and 97% were single unit structures. The median value of the owner-occupied housing units was $843,500.

2.6 Regional Plans, Regulations and Policies:

The He‘eia CDD shall comply with the following applicable regional plans, regulations and policies:

2.6.1 State Land Use District

Approximately 272 acres of the He‘eia CDD is located within the State Land Use District’s Urban District and the remaining portion of the District is in the Conservation District. See Figure 4. The portion of the District in the Conservation District is classified as “General”. Property within the He‘eia CDD is subject to all applicable State Land Use District regulations.

2.6.2 Special Management Area (“SMA”)

The wetland area of the District is located within the boundaries of the SMA. Pursuant to HRS Chapter 206E-203, the administration of SMA permits for the District is under the jurisdiction of the City and County of Honolulu.

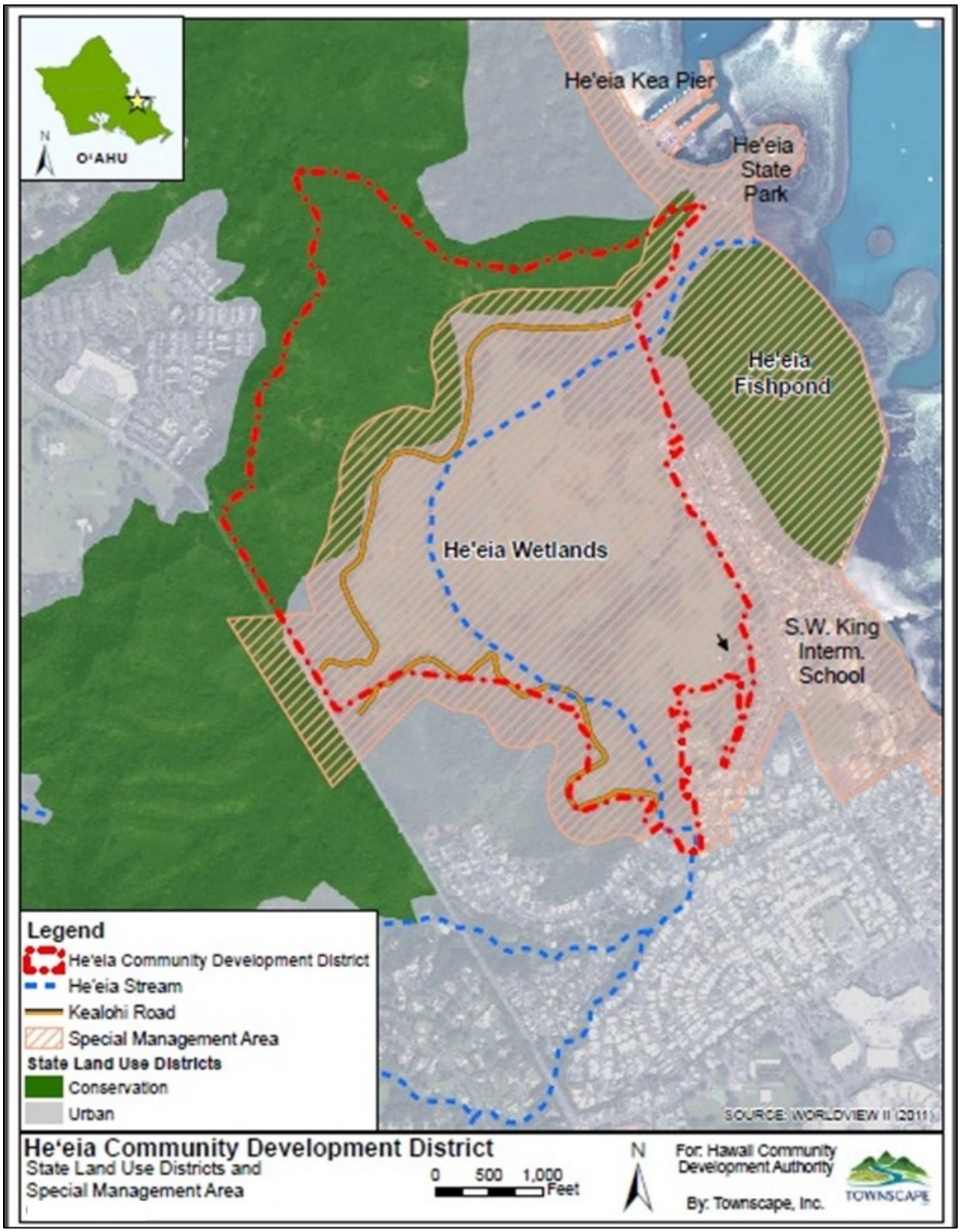


Figure 4: State Land Use District and SMA Boundary Map

2.6.3 Koʻolau Poko Sustainable Communities Plan ("KPSCP")

The KPSCP is a long-range plan to guide public policy, land use, investment, and decision-making in Koʻolaupoko through 2035. The KPSCP is consistent with the City and County of Honolulu's General Plan and envisions that by the year 2035, "Koʻolaupoko' s natural, cultural, historic, agricultural, and aqua-cultural/fishpond resources are protected and enhanced." Key elements of the KPSCP include:

- Significant scenic views of ridges, upper valley slopes, shoreline areas from major public parks highways, coastal waters and hiking trails are protected;
- Access to shoreline areas and mountainous regions are improved and provided for all to use and enjoy;
- Cultural and historical resources are preserved through the protection of visual landmarks and significant views, protected access rights relating to traditional cultural practices, and the protection of significant historic, cultural, and archaeological features; and
- Koʻolau Poko contains productive and potentially productive agricultural lands that are preserved by adopted protective regulatory policies and implemented incentives and programs that promote active agricultural use of these lands.

The Heʻeia CDD Plan supports and is consistent with the overall vision of the KPSCP by supporting agricultural use, preserving cultural and historical resources where applicable, and protecting scenic views of ridges, upper valley slopes and shoreline areas.

2.6.4 Koʻolau Poko Watershed Management Plan ("KPWMP")

The KPWMP is a 20-year plan that seeks to formulate an environmentally holistic, community-based, and economically viable water management plan that will provide a balance between (1) the protection, preservation and management of Oʻahu's watersheds; and (2) sustainable ground water and surface water use and development to serve present users and future generations. To achieve this goal, the KPWMP proposes five objectives which include:

- Promote sustainable watersheds;
- Protect and enhance water quality and quantity;
- Protect Native Hawaiʻian rights and traditional and customary practices;

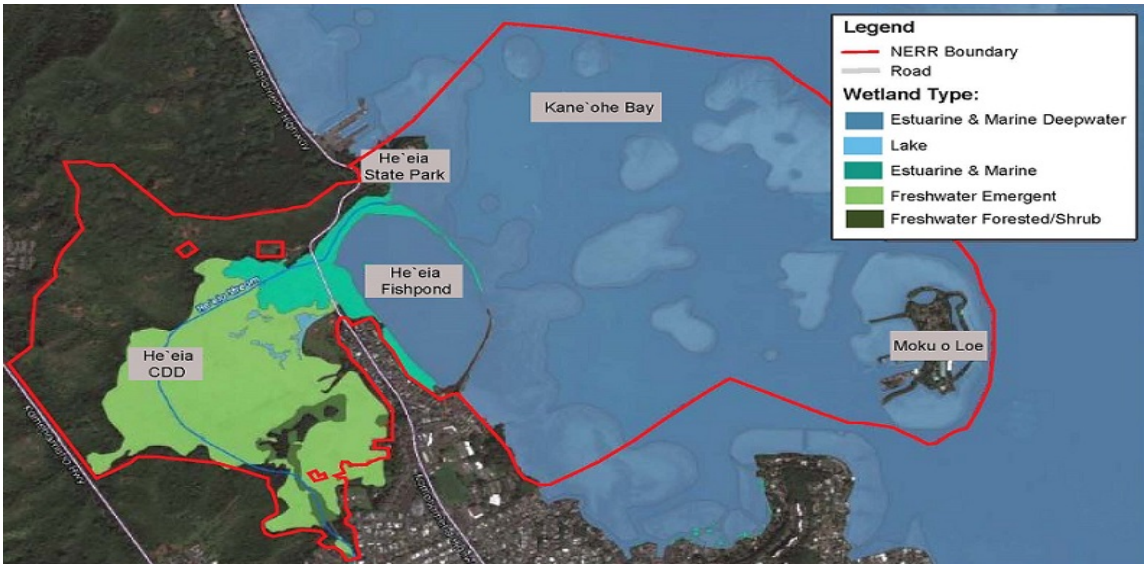
- Facilitate public participation, education, and project implementation; and
- Meet future water demands at reasonable costs.

The KPWMP proposes more specific actions for He‘eia which include: (1) a He‘eia Stream Restoration Project and (2) a projected, expanded supply of non-potable water for Ko‘olau Poko from 11.434 million gallons per day (mg.) in 2000 to 14.271 mgs, in 2030. The increase in water demand is expected to account for possible future taro production in He‘eia which could be met by an increase in the use of both stream water and ground water for agricultural irrigation.

The He‘eia CDD Plan is consistent with the goals and objectives of the KPWMP. The He‘eia CDD Plan supports agricultural use and taro production in He‘eia which may increase water demand for non-potable water for agricultural purposes in Ko‘olau Poko by 2030, as projected in the KPWMP. The He‘eia CDD Plan also proposes the restoration of He‘eia Stream, a key resource for anticipated agricultural activities within the District.

2.6.5 He‘eia National Estuarine Research Reserve (“NERR”)

The He‘eia CDD is part of the He‘eia NERR which is the nation’s 29th NERR, administered by the Hawai‘i Institute of Marine Biology, as designated by the State of Hawai‘i.



He‘eia NERR Boundary Area

The He‘eia NERR seeks to practice and promote stewardship of coasts and estuaries through innovative research, education, and training using a place-based system of protected areas. The He‘eia NERR consists of approximately 1,385 acres of land and includes He‘eia

State Park, He‘eia Fishpond, the He‘eia CDD, Moku o Lo‘e Island, and the large expanse of waters and reefs of Kāne‘ohe Bay. The goals and priorities of the He‘eia NERR are as follows:

- Ensure a stable environment for research through long-term protection of NERR System resources;
- Address coastal management issues identified as significant through coordinated estuarine research within the system;
- Enhance public awareness and understanding of estuarine areas and provide suitable opportunities for public education and interpretation;
- Promote federal, state, public, and private use of one or more reserves within the system when such entities conduct estuarine research; and
- Conduct and coordinate estuarine research within the system, gathering and making available information necessary for improved understanding and management of estuarine areas.

Priority issues of the He‘eia NERR include: invasive species, loss of natural habitats, erosion and sedimentation, nonpoint source pollution, urbanization and human activities in the area, water quality issues, agricultural development, and climate change impacts.

3.0 Physical Environment

3.1 Topography and Geology

The He‘eia CDD generally consists of low-lying wetlands with portions of higher regions that extend to approximately 440 feet above sea level. Geologically, the district of Ko‘olau Poko is part of the Ko‘olau volcano, one of two extinct volcanos that make up the Island of O‘ahu. The geologic composition of the District consists of:

- Ko‘olau Basalt (45.6%),
- Older Alluvium (37.4%),
- Alluvium (13.2%),
- Honolulu Volcanics (3.1%),
- Beach Deposit (0.5%) (Izuka et al., 1993; Stearns and Vaksvick, 1935).

3.2 Soils

Majority of the wetland area consists of Hanalei silty clay (HnA), Lolekaa silty clay (LoB), and Marsh (MZ). The majority of the Kealohi road corridor lies

above Alaeloa silty clay (AeE), and Marsh. A portion of the road corridor also lies directly alongside Waikane silty clay (WpE).

The He‘eia CDD has had extensive fill deposited in the twentieth century and has partially been under taro cultivation but remains mostly in overgrown wetland vegetation. See Figure 5.

Soil types of the He‘eia CDD

Soil Type	Characteristic
Alaeloa Series (ALF)	Consists of well-drained soils in upland areas. Alaeloa silty clay at 40% to 70% slopes has rapid runoff and severe erosion hazard.
Marsh (MZ)	Occur in wet, flooded areas covered dominantly with grasses and bulrushes.
Waikane Series	Well-drained soils on alluvial fans and terraces on O‘ahu.
Hanalei Series (HnA)	Found on stream bottoms and flood plains with moderate permeability.
Loleka‘a Series (LoB)	Well-drained soils on fans and terraces on the windward side of O‘ahu.

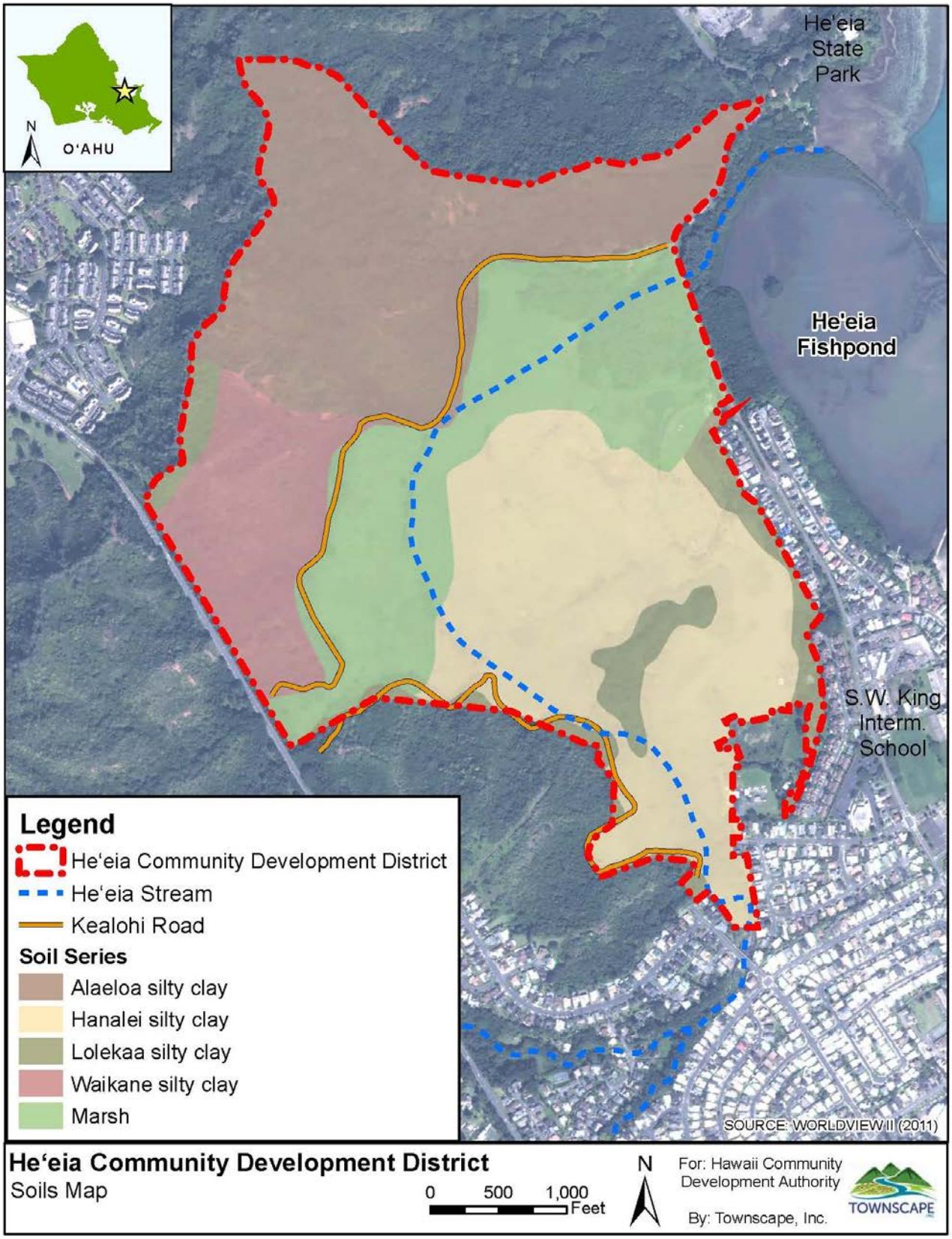


Figure 5 Soils Map

3.3 Vegetation

Vegetation in the He‘eia CDD predominantly consists of alien plant species with little-to-no native species. See Figure 6. The wetland area consists primarily of California grass as well as wetland plant species such as sedge (Frimbristylis littoralis), Job’s tears (Coix lachrymal-jobi), arrowhead (Sagittaria sagittaefolia), and kamole (Ludwigia octivalis). The dense growth of California grass and other alien grasses in the He‘eia wetland area is believed to have significant negative impact on native water-bird habitat (Calvin Kim and Associates 1990, Townscape 2011b).

The upland area consists of trees such as the java plum (*Syzygium cumini*) and shrub species such as cat’s claw (*Caesalpinia decapetala*), Cuba jute (*Sida rhombifolia*), koa haole (*Leucaena leucocephala*), and guava (*Psidium guajava*).

Invasive mangroves have also been established on the north side of the District along He‘eia stream. Kāko‘o Ōiwi in conjunction with NOAA is currently implementing an invasive species removal project which will improve and restore portions of the wetlands and stream corridor to support ecological and wetland resilience in light of extreme weather events and flooding. The Project also includes native species replanting and traditional management practices.

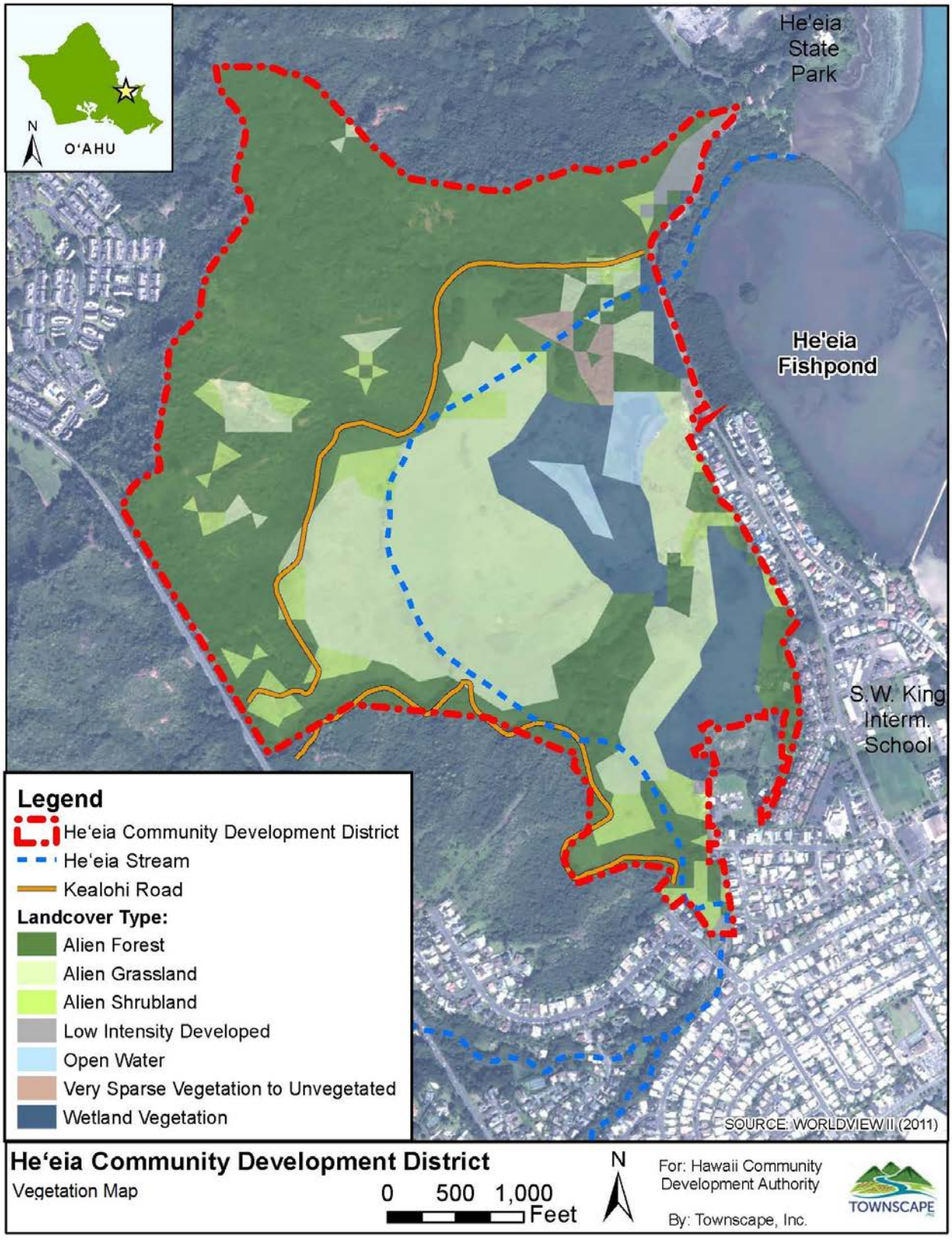


Figure 6: Vegetation

3.4 Hydrology

Precipitation is the source of virtually all freshwater in the He‘eia watershed, but its distribution is highly variable. Rainfall on land is taken up by plants, some water infiltrates the soil and moves vertically downward to the water table to become ground water (re-charge), some of it evaporates back into the atmosphere (evapotranspiration) and the rest flows over land as runoff, enters streams and other water features, and ultimately discharges into the ocean. Ground water moves both vertically and laterally within the ground-water system and some water may seep through the surface into streams, springs, and wetlands. Therefore, surface and ground water are highly interdependent on the supply and quality of the other.

Wetlands are surface water areas that are regularly wet or flooded throughout most of the year. Wetlands provide habitat for fish, birds, and other wildlife and provide natural places with recreational opportunities. Wetlands also serve two major hydrological functions: (1) intercept runoff and lessen the impact of flooding; and (2) absorb sediment and pollutants in runoff. Therefore, wetlands play an important role in flood control and improving water quality and are important attributes of a watershed.

3.4.1 Surface Water. Surface water in the He‘eia CDD is found in He‘eia Stream and its tributaries, ponds, stream diversions, and springs that feed the He‘eia Wetland. Fresh water in He‘eia comes entirely from precipitation along the Ko‘olau Mountain Range averaging about 84 inches per year (Streamstats 2012).

3.4.2 Streams. He‘eia Stream is the primary stream that flows through the District. Its water comes from rainfall, runoff, and ground water seepage. Approximately 87% of the average annual streamflow comes from groundwater and the remainder from runoff (Ghazal 2017). Stream water extends 7.1 miles from the upper reaches of the Ko‘olau Mountains to the end of the stream mouth at Kāne‘ohe Bay (Parham et al. 2008). He‘eia stream begins where the Ha‘ikū Stream and ‘Ioleka‘a Stream merge. Several smaller tributaries and contribute to the total flow of He‘eia Stream which fan out to the wetland areas of the District and then to He‘eia Fishpond. Approximately 1.3 miles of the stream is within the He‘eia CDD. He‘eia Stream and its tributaries feed most of the water in the He‘eia Wetland, draining an area of 4.44 square miles. The stream’s average continuous main streamflow is 6,851 cubic meters per day with an average gradient of 11%. (Wilson, 2004-dissertation).

3.4.3 Ground water. In Hawai‘i, rainfall fills dike compartments within its mountains’ rock layers and as compartments fill up, water surfaces as springs or seepages. Groundwater recharge is generally greatest in

the upper regions of the Koʻolau Mountains with annual recharge rates exceeding 3.81 meters (Shade and Nichols, 1996). Haʻikū Valley, which drains an area of about 1.57 square miles, receives recharge of 0.00492 meter per day. Ground water seepage into streams may take months or even decades from the original rainfall event. The Heʻeia CDD is within the Koʻolau Poko Aquifer System of the Windward Aquifer Sector.

3.4.4 Flooding**.** The majority of the Heʻeia CDD is within the Special Flood Hazard Area, also known as 100-year flood zone. See Figure 7. Moderate flood events in Heʻeia occur several times annually (Koonce, 2012). Flood peaks can be achieved within hours following the onset of precipitation. Similarly, the return to base flow can occur within a matter of hours. Much of the area makai of the Kahekili Highway including most of the of Heʻeia CDD, surrounding residential subdivision, and area near Windward Mall Kāneʻohe Bay Shopping Center are in the 500-year flood zone. This area has a 1-in-500 or 0.2 percent chance of flooding in any given year.

3.4.5 Water Quality. Water quality in the Heʻeia watershed is considered "impacted". Water quality is generally better in the upper regions of the watershed compared to the lower regions. Pollutants and nutrients are carried down to Kāneʻohe Bay and create phytoplankton blooms that threaten the health of the coral reefs (DeCarlo et al. 2007, Drupp et al. 2011, Guidry et al. 2013). Since 2012, Heʻeia has been a priority watershed under the DOH's Clean Water Branch (CWB) Polluted Runoff Control Program (PRCP) to reduce sediment and nutrients in the watershed.

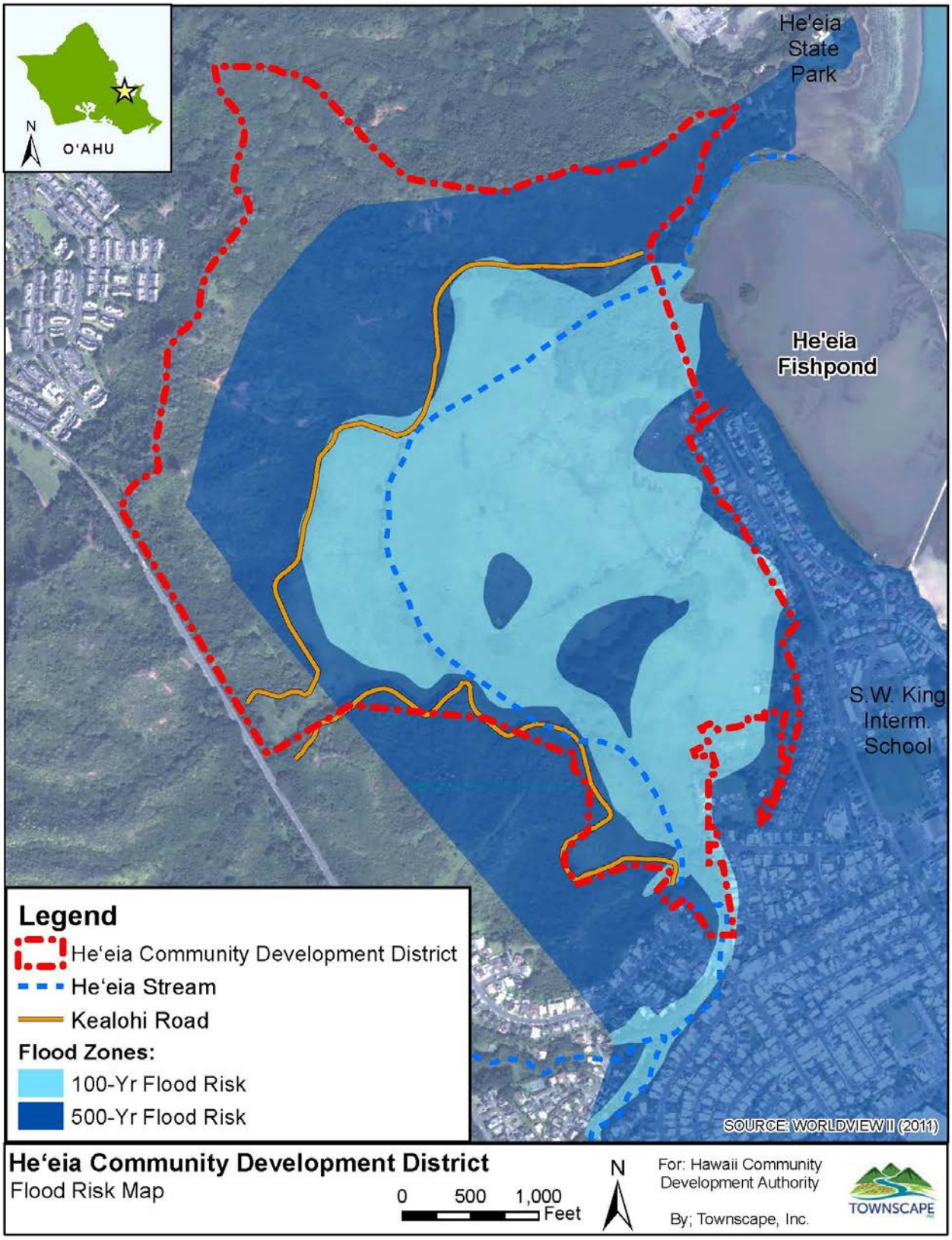


Figure: 7 Flood Map

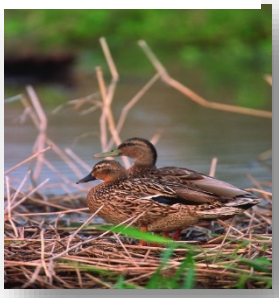
3.5 Protected Species and Habitat

The habitat of the He‘eia CDD can be broadly categorized as wetlands and upland areas. The wetland area is known to occasionally provide feeding and resting habitat for four endemic and endangered water birds.

- ‘Alae ‘Ula or Hawaiian gallinule
  The ‘alae ‘ula is an endangered chicken-sized water bird endemic to Hawai‘i. The ‘alae ‘ula is dependent on freshwater wetland habitats with dense emergent vegetation for nesting. Its population decline was due to habitat loss, hunting and predation by introduced animals. Traditionally, the ‘alae ‘ula was hunted for food and was known to be the keeper of fire in Hawaiian mo‘olelo.

‘Alae ‘Ula

- Koloa or Hawaiian Duck
  The Koloa is a non-migratory bird, endemic to Hawai‘i. The koloa is listed as an endangered species by the International Union for Conservation of Nature’s Red List of Threatened Species. Its population is in decline due to hybridization with the mallards, loss of lowland wetland habitats, and also to predators such as cats, pigs, dogs, and mongoose.



Koloa

- ‘Alae Kea or Hawaiian Coot
  This endemic bird is found in freshwater lakes, marshes, coastal saline lagoons, and water storage areas. The bird was listed on the Federal list of endangered species in 1970 and also in the State’s list of endangered species. Population declines are due to habitat loss and the introduction of predators, such as the mongoose.

‘Alae Kea

- Ae‘o or Hawaiian Stilt
  This endemic bird has slender long legs and a thin beak. Generally found in wetlands and near the ocean, they may also occur in large groups on ponds, marshes, and mudflats. The ae‘o was a popular game bird until hunting water birds was banned in 1939. Population estimates for the ae‘o varied between 1,100 and 1,783 between 1997 and 2007. Native predators of the ae‘o include the pueo (Hawaiian owl) and black-crowned night heron.

Ae‘o

- Hawaiian Hoary bat.
  The endangered Hawaiian hoary bat is also thought to roost in the mangroves at He‘eia. Migratory shorebirds, such as the Pacific golden plover, are also found in He‘eia (Helber Hastert & Fee 2007). It is anticipated that native bird populations will re-establish at He‘eia with the restoration of its wetlands.

3.6 Climate Change

Changes in global climate are expected to adversely impact Hawai‘i in the long-term. The impacts include sea level rise, an overall reduction in rainfall, increasing temperatures, and an increase in storm frequency and intensity, leading to more flooding events. An overall reduction in annual rainfall would lead to a decline in the sustainability of groundwater sources (Burnett and Wada, 2014). Increasing temperatures will also drive evapo-transpiration or water loss from plants and other surfaces. In addition, increasing water demands from urban development and population growth, will further impact water supply in Hawai‘i in the future (Engott et al., 2015).

At He‘eia, these scenarios translate into a potential reduction in overall rainfall, surface water, groundwater, and stream flow. Mitigative efforts to minimize the impacts of climate change are important, such as: (1) removing invasive vegetation which consume and transpire more water than native plants; and (2) prioritize the restoration of native plants.

Sea Level Rise (SLR). Global climate change is expected to result in sea level rise in the future that will impact the coastal areas of Hawai‘i. Future impacts include (Bjerkie et al. (2012):

- Rising groundwater levels
- Formation of new wetlands and expansion of existing wetlands
- Changes in surface drainage and soil saturation
- Increase in sporadic flooding events that will intensify seasonally when high tide events coincide with rainfall events
- Saltwater intrusion will impact root zone of plants
- Infrastructure damage in low-lying areas

Figure 8 shows four sea level rise scenarios, colored in yellow, in He‘eia at 0.5 feet, 1.1 feet, 2 feet, and 3.2 feet. These projections are based on the anticipated rate of increase in sea levels to 3.2 feet by the year 2100 (IPCC 2014). Figure 8 suggests that sea level rise of 0.5 feet and 1.1 feet will mostly affect the He‘eia fishpond makai of the He‘eia CDD, and one low point inland that is located makai of Kahekili Highway on the mauka side of He‘eia CDD. Sea level rise of 2 feet and 3.2 feet are expected to inundate the

He‘eia CDD along the mouth of He‘eia Stream near Kamehameha Highway and will likely cover the highway. These findings are significant for long-range infrastructure planning for the He‘eia CDD that would typically be constructed along or under roadways.

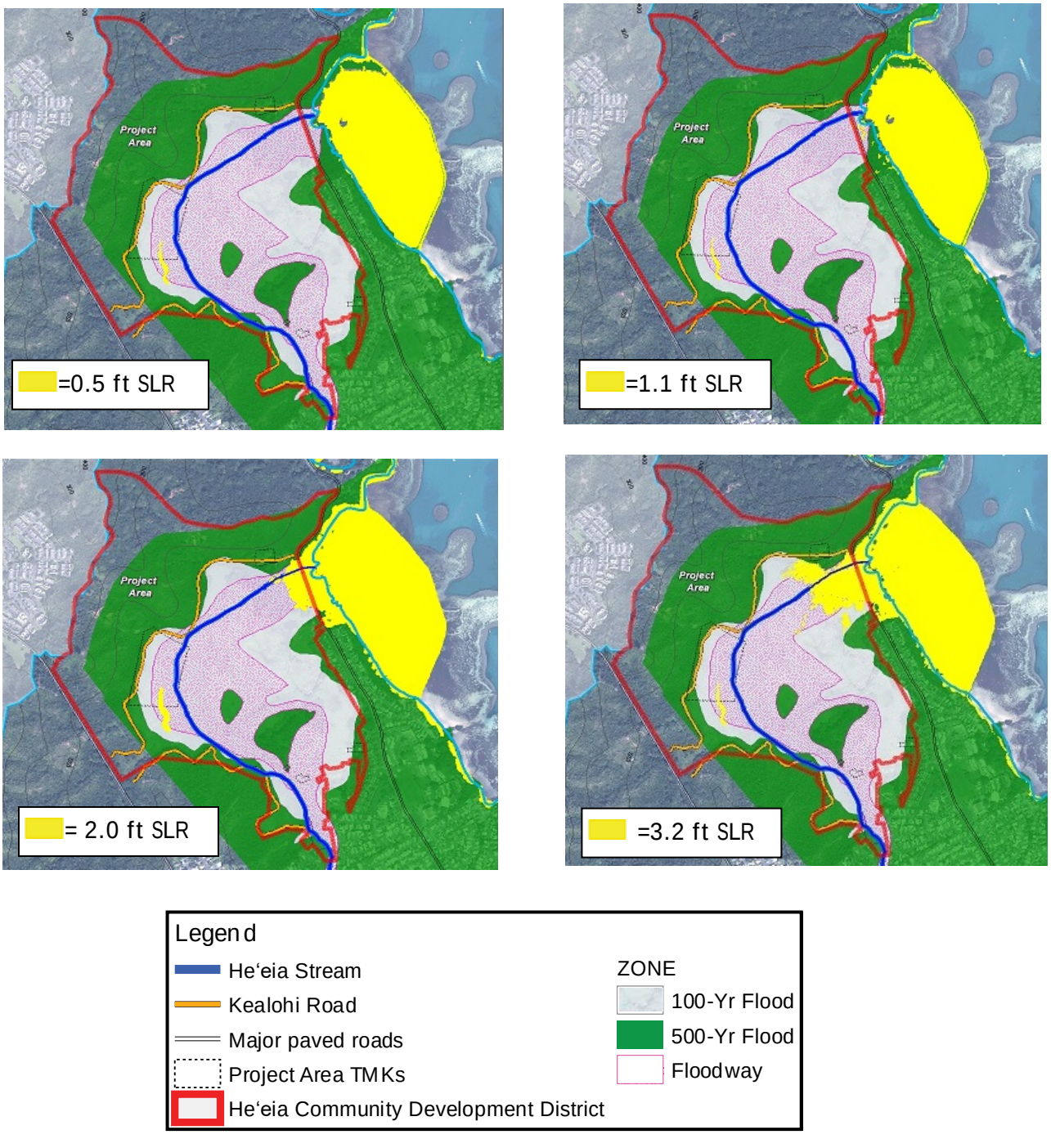


Figure 8: Projected Marine Inundation

3.7 Archaeological and Historic Sites

Pursuant the HAR § 13-284-6, an Archaeological Inventory Survey ("AIS") was prepared for the He'eia CDD in 2017. As a result of fieldwork efforts and on-site inspections of the project area, archaeological sites were identified relating to pre-Contact traditional Hawai'ian habitation, areas of agriculture and burial potential, post-Contact plantation-era agriculture and historic ranching animal husbandry enclosures. Seventeen historical properties were identified and evaluated for significance. Of the seventeen sites, four sites were deemed to *'have yielded, or is likely to yield information important for research on prehistory or history*' and *'have an important value to the Native Hawai'ian people or to another ethnic group of the State due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral history accounts – these associations being important to the group's history and cultural identity*.' The four sites will be preserved in place as recommended by the AIS. See Figure 9.

A fifth site, Kealohi Road, SIHP #50-80-10-7521, is a post-contact earthen road corridor. Kealohi road is a plantation-era road which continues to serve as the primary access from Kamehameha Highway toward Kahekili Highway. Kealohi Road will also be preserved in place as recommended by the AIS.

Historic Properties at the He'eia Community Development District

Site #	Historic Site	Description
1	**SIHP # 50-80-10-7522** Basalt Quarry	Likely for road grading and historic development in the area.
2	**SIHP # 50-80-10-7523** Possible 'Ōkolehao distillery	Possibly an 'ōkolehao (ti root liquor) distillery.
3	**SIHP # 50-80-10-7530** Basalt terrace complex	A traditional terrace complex likely for agriculture.
4	**SIHP # 50-80-10-7535** Concrete platforms	This site consists of two concrete platforms believed to be a portion of the former rice mill foundation.

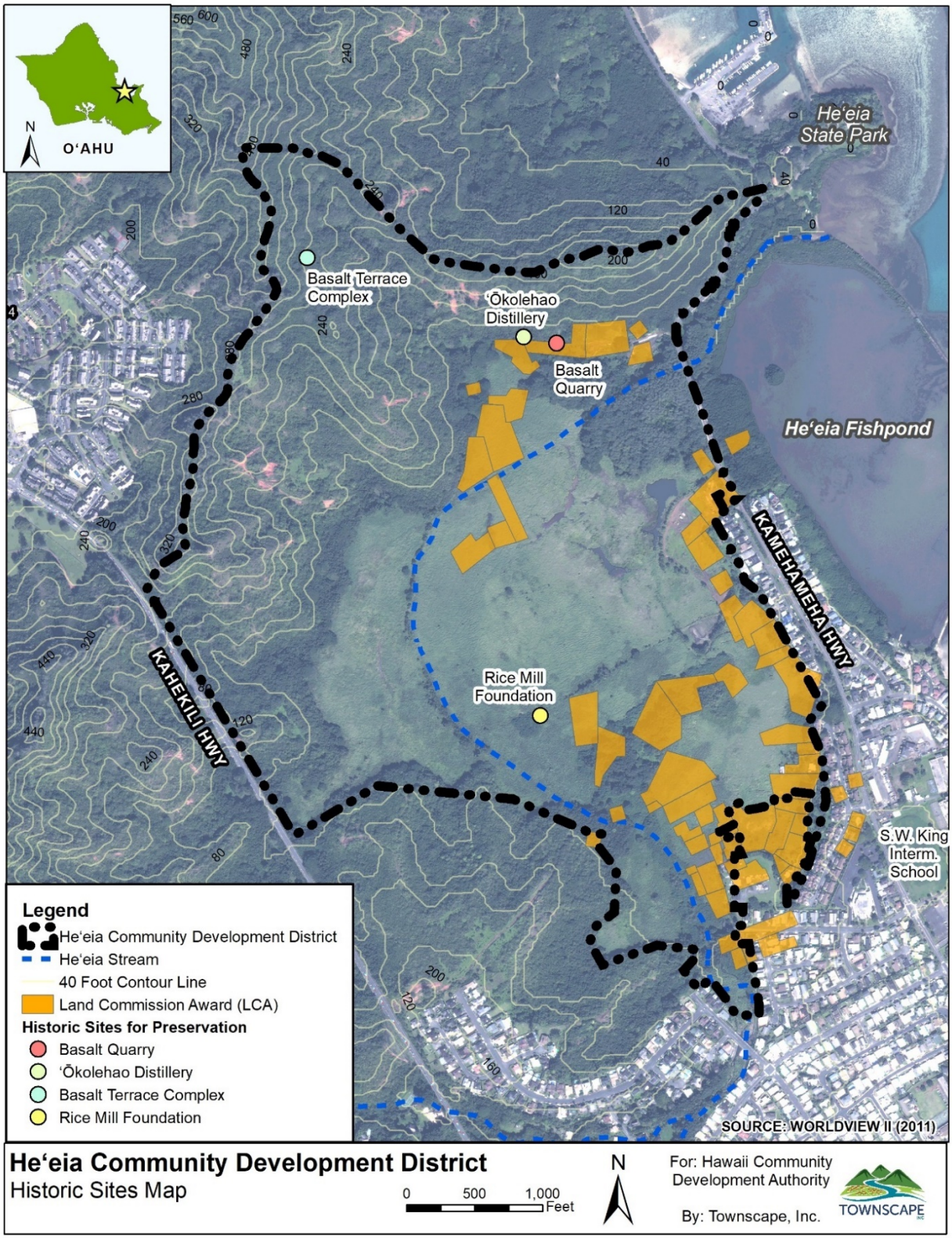


Figure 9: Historic Sites Map

E ola hou ke kalo; hoʻi hou ka ʻāina lēʻia
The taro lives; abundance returns to the land

4.0 Heʻeia Master Plan Principles:

The Heʻeia Master Plan Principles were developed to fulfill the guiding principles established in HRS Chapter 206E-203.

4.1. Restore the wetlands to support sustainable farming and food production, while protecting and supporting native species habitats.

- Protect water sources, including Heʻeia Stream, historic ʻauwai, springs and groundwater. Re-establish and restore traditional water systems, where applicable.
- Remove invasive species, including flora and fauna. Replace invasive plants with kalo, native ornamentals, medicinal and other culturally-significant plants. Support programs to eradicate wild pigs and other invasive fauna.
- Support all aspects of farming by providing infrastructure, agricultural support facilities and access.

4.2 Protect the health of the Heʻeia ahupuaʻa, acknowledging that the Heʻeia CDD is a key component of the Heʻeia ahupuaʻa.

- Utilize land management system based on traditional practices, kūpuna knowledge and modern science in restoring the wetlands.
- Utilize loʻi and its roadway system, detention ponds and fish ponds to mitigate flood pulse, sediment control and ground water infiltration.
- Utilize loʻi and fishponds as salt water intrusion barriers.

- Encourage research and educational opportunities for wetland and ecosystem restoration.

4.3 Perpetuate Hawai‘ian culture to enrich the He‘eia District and the broader district of Ko‘olaupoko.

- Promote the development of educational and cultural facilities in the District.
- Encourage the sharing of mana‘o by community members, cultural practitioners, residents of He‘eia and respective experts and authorities.
- Respect the wisdom of kūpuna and lineal descendants while encouraging the next generation to carry on the rich heritage of He‘eia.
- Restore and create a cultural connection between the District and the broader He‘eia community.
- Acknowledge and support the kuleana parcels within the District.

4.4 Preserve significant archaeological, historic and cultural sites, to the extent practical.

- Preserve in place all significant archaeological, historical and cultural sites, to the extent practical.
- Restore and reclaim historic sites, to the extent practical.
- Consult with lineal descendants, cultural practitioners and the State Historic Preservation Division on issues pertaining to significant archaeological, historical and cultural sites.

4.5 Promote economic and environmental sustainability.

4.5.1. Economic Sustainability

- Support opportunities for enterprise that are consistent with the District’s mana‘o ho‘okō (intent).
- Support a venue for produce and products grown within the District.
- Provide support facilities including, poi mill, agricultural processing centers, commercial kitchens, and community areas.
- Explore opportunities that promote economic sustainability that are consistent with the District’s mana‘o ho‘okō (intent).

4.5.2. Environmental Sustainability

- Utilize green building, alternative energy, and zero waste strategies where applicable.
- Account for climate change and sea level rise.
- Pursue grants, funding, educational and research opportunities that promote environmental sustainability.

5.0 Land Use Plan and Guidelines

5.1 Land Use Plan

The Land Use Plan has been developed to create an agricultural, cultural and educational district which reflects the development guidance policies enacted by the State Legislature along with community input and manaʻo from kūpuna and lineal descendants.

5.1.1 Wao Hoʻōla

The Wao Hoʻōla zone is the upland or āʻina Makua area of the District and is envisioned as the *area of restoration and respite*. Non-native vegetation will be replaced with native and culturally significant vegetation. The Wao Hoʻōla zone provides an opportunity for dry-land agriculture as well as facilities that promote respite and healing. Significant historic sites including a granite quarry and terrace will be preserved in place.

The Wao Hoʻōla zone extends from Kamehameha Highway on the northeastern boundary of the Heʻeia CDD, to Kahekili Highway on the southwestern boundary of the District. The Wao Hoʻōla zone is generally located outside the 100-year flood zone and is higher in elevation than other regions of the Heʻeia CDD, with highest elevations of up to 440 feet. The topography is steep in some areas with swales that could potentially flood during heavy rain events.

The Wao Hoʻōla zone is generally located within the State Land Use District Conservation "General" zone. Conservation-zoned lands are comprised primarily of forest and water reserve zones, lands subject to flooding and soil erosion, and areas necessary for protecting watersheds and water sources, scenic and historic areas, parks, wilderness, open space, recreational areas, habitats of endemic plants, fish and wildlife, and all submerged lands seaward of the shoreline. The Conservation District is administrated by the State Board of Land and Natural Resources and uses are governed by rules promulgated by the State Department of Land and Natural Resources ("DLNR").

5.1.2 Wao Kahua

The Wao Kahua zone is envisioned as the *area of strong foundation to establish educational, cultural and agricultural support facilities*. Due to its elevation above the wetlands, facilities can be built to fulfill the agricultural, cultural and educational goals of the District. The Wao

Kahua zone is envisioned to support a wide range of uses including: dryland agriculture, cultural practices, education and research, restoration and resource management. Majority of the educational and cultural facilities of the District will be located along Kealohi Road. It is envisioned that infrastructure will be provided along Kealohi Road to support the cultural and educational facilities.

The Wao Kahua zone is generally located within the State Land Use District Urban zone. Two of the three kuleana parcels are located within the Wao Kahua zone.

5.1.3 Wao Loko Iʻa Kalo

The Wao Loko Iʻa Kalo zone is the wetland area of the District and is envisioned as the *area of mahiʻai (cultivate food) and ʻāina momona (land that is abundant, food producing)*; it is the most vital food-producing component of the District. The Wao Loko Iʻa Kalo zone is the area of wetland and stream restoration, kalo and dryland cultivation, development of loko iʻa (fish and detention ponds), the practice of Hawaiian culture, education and arts, along with support structures and facilities for agricultural activities.

Wao Loko Iʻa Kalo consists of approximately 176 acres and accounts for approximately 43 percent of the District. The Wao Loko Iʻa Kalo zone is a wetland, inundated by fresh water from Heʻeia Stream, springs, man-made ʻauwai, and salt water from Kāneʻohe Bay. Majority of the wetland is characterized as estuarine wetlands with a portion of palustrine wetlands.

The wetland area is regulated and protected by county, state, and federal laws and programs, including: the City and County of Honolulu - Coastal Zone Management Act; DLNR's Commission on Water Resource Management; Department of Health, Water Quality Certification Process (Clean Water Act, Section 401); the U.S. Army Corps' of Engineers (Clean Water Act, Section 404); and construction of structures, deposition of material or alteration to any navigable waters of the United States (Rivers and Harbors Act, Section 10).

There is one kuleana parcel located within the Wao Loko Iʻa Kalo zone.

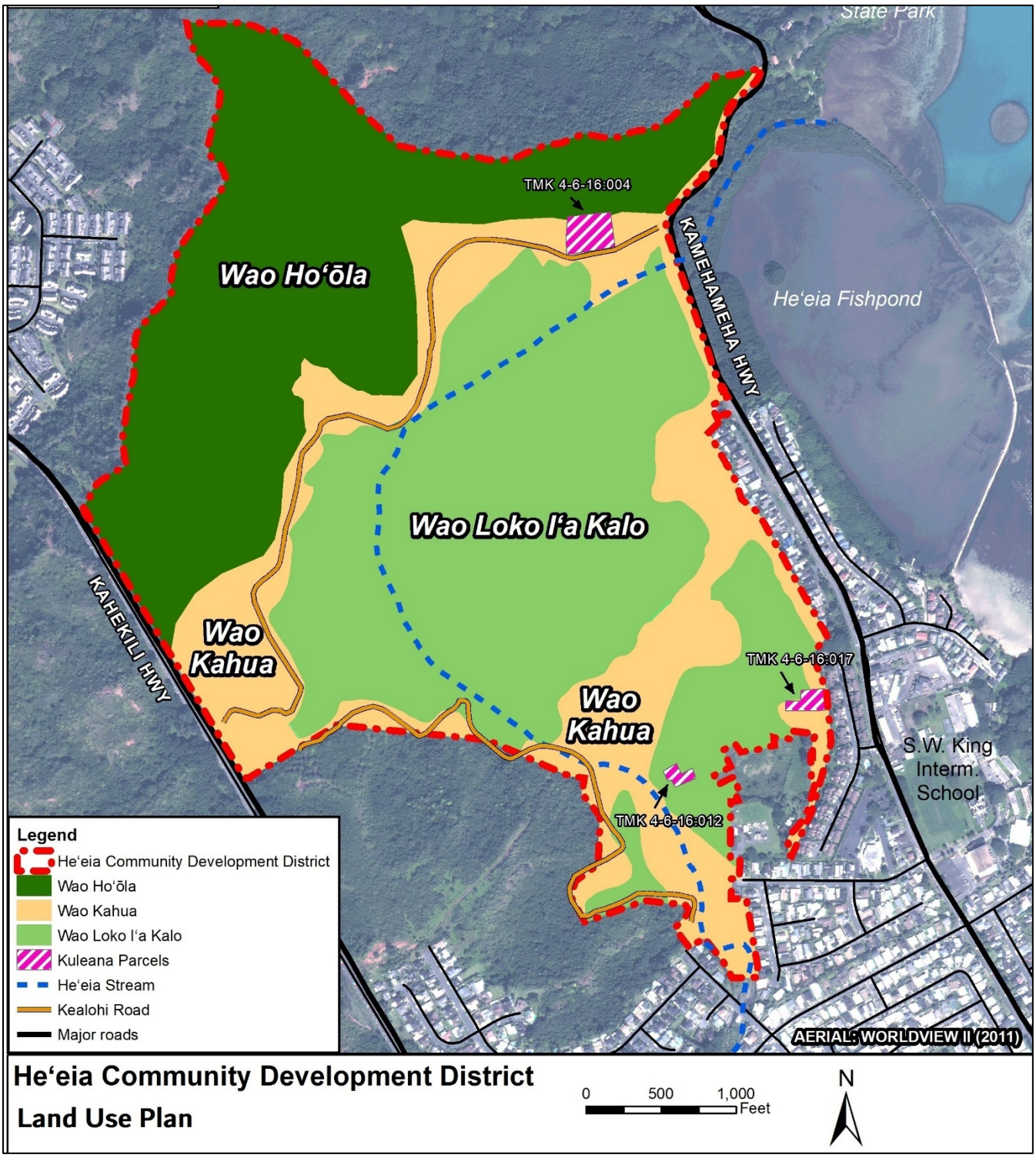


Figure 10: Land Use Plan

6.0 Infrastructure Systems

The proposed infrastructure systems for the District are intended to assist in the transformation of the wetlands into an agricultural, cultural and educational district. For the most part, there is no infrastructure within the He‘eia CDD available to support the planned uses proposed in the He‘eia Master Plan. Infrastructure will need to be installed and developed to meet the projected need of the future uses.

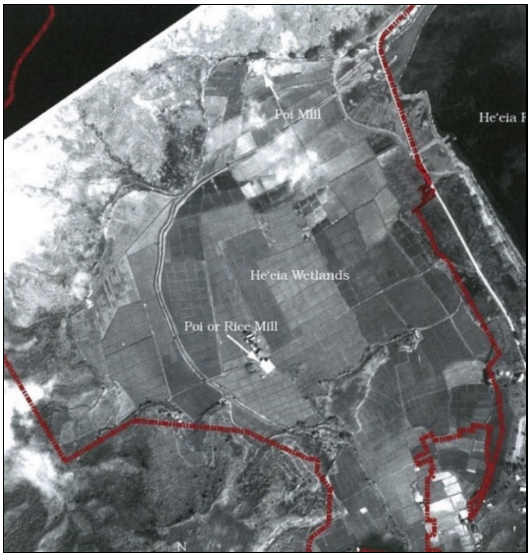
All applicable utilities will be designed in accordance with appropriate City and County of Honolulu and utility company standards as well as established engineering principles. The estimated cost of infrastructure for the District is approximately $10 million.

6.1 Alanui (Roadway) Plan

The layout of the Alanui Plan is generally based on roadways shown in the 1928 aerial photo of the Hoi. The Alanui Plan is designed to support the agricultural, cultural and educational activities of the District. In addition to facilitating circulation and access, the Alanui Plan is designed to mitigate flood pulse and to provide sediment control. As with the 1928 roadway layout, Kealohi Road is the primary access to the future planned facilities along the Kealohi Road corridor.

Additionally, minor farm roads within the Wao Loko i‘a Kalo zone will be constructed to support agricultural activities. The location of the minor farm roads will be determined by the layout of the loi. Alanui within the wetland area will be supported by kuāuna (taro patch wall) planted with ground cover such as ‘ākulikulu, ‘ae ‘ae, and makaloa to minimize erosion and restore the native habitat. See photo below.

Primary access into the District is from Kamehameha Highway at Kealohi Road and from the existing entrance just west of the pump station. Secondary access is proposed in the southern portion of the District. See Figure 11.



1928 Aerial Photo of Alanui

Traditional farm alanui within the Hoi

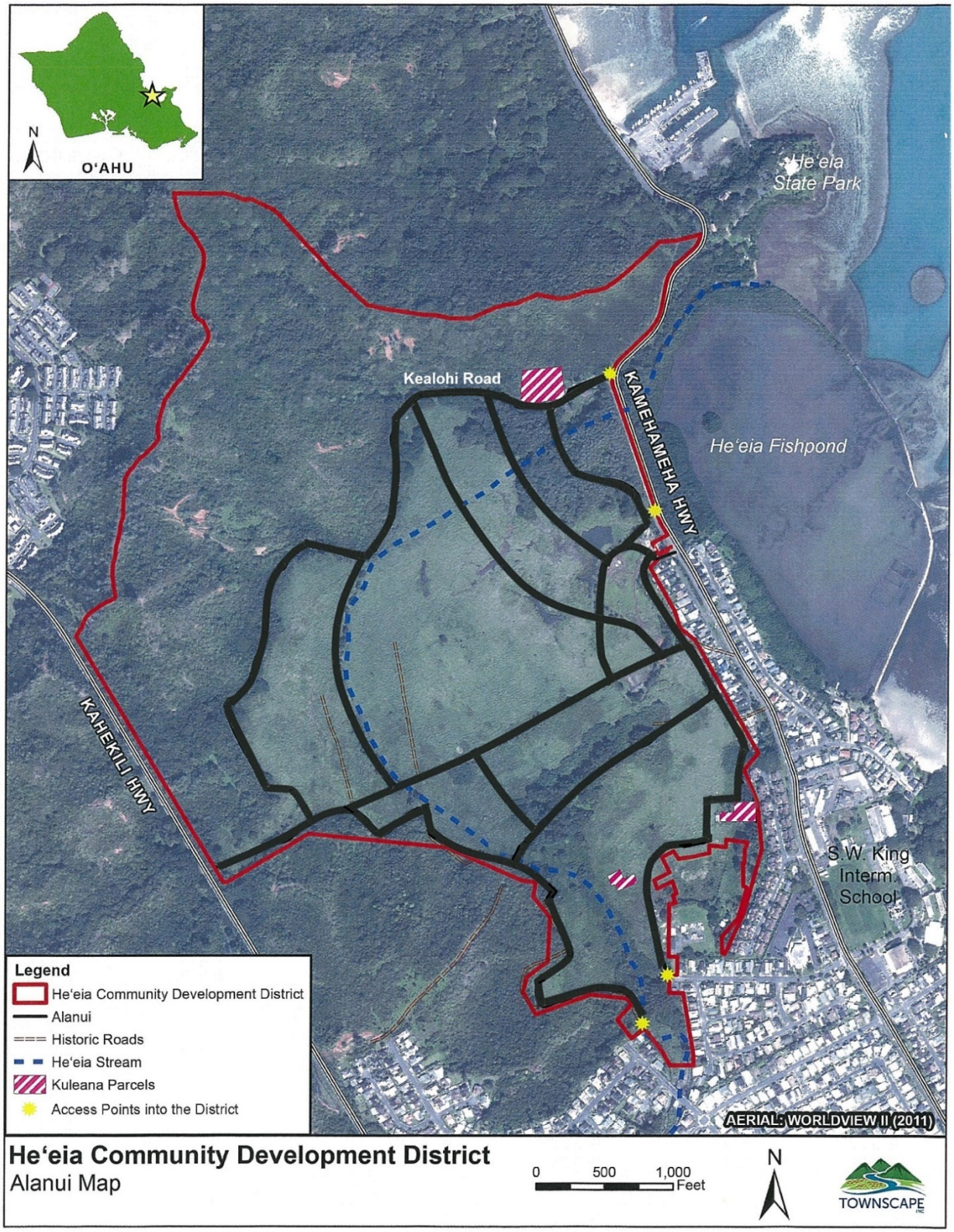


Figure 11 Alanui (Roadway) Plan

6.2 Water Supply

Existing potable water service to the area is supplied by the Honolulu Board of Water Supply (BWS). Two water mains are located within the Kamehameha Highway right-of-way. An 8-inch and 30-inch water main is shown in Figure 12. The 30-inch main, which is no longer in service, also appears to be located within the He`eia wetlands boundary along Kealohi Road. The 8-inch main will provide water service to He'eia wetlands. The source reservoir of this main is the Kapunahala 272' Reservoir. Adequacy of the existing water system will be verified during the building permit application process for future facilities.

A conceptual plan of the proposed water infrastructure is shown in Figure 12. The actual alignments and distribution of water will be determined during the project design phase. Generally, the BWS issues a single water meter for a given tax map key, therefore the conceptual water plan assumes this constraint. To provide service to all planned building sites, the proposed waterline will need to cross the wetlands and He`eia Stream.

Fire protection will be provided to facilities in accordance with the State Fire Code and the latest BWS standards. The BWS 2002 Water System Standards (WSS) requires a minimum fire flow of 1000 gpm for 30 minutes and a maximum fire hydrant spacing of 700-feet for agricultural lands. The proposed water lines will be adequately sized for both fire protection and domestic water usage. The meter configuration will be coordinated with the BWS at the time of design.

Domestic consumption for agriculture land, per the BWS WSS, is 4000 gal/acre. However, based on the type of agriculture, this amount of water consumption may not apply. Therefore, consumption requirements will be validated with the BWS at the time of a project's design phase.

Design requirements for the new waterlines and appurtenances will be in accordance with BWS WSS, Plumbing Code and any other applicable Federal, State, and County codes or requirements.

6.3 Wastewater System

An existing City & County of Honolulu 8-inch gravity sewer main is located within an easement along Kamehameha Highway. This gravity main flows to the Alii Bluffs Sewer Pump Station (SPS). The wastewater is then pumped via a force main and eventually terminates at the Kailua Regional Wastewater Treatment Plant (WWTP). The adequacy of the regional sewer system will be verified during the design phase.

Facilities within the vicinity of Kamehameha Highway, including the Poi Mill, will be connected to the municipal wastewater system. All other facilities will manage wastewater using on-site individual wastewater systems (IWS) or will connect to the municipal wastewater system through alternative low pressure sewer (LPS) systems, if feasible. The selection of an appropriate LPS or

IWS shall be determined during design based on the demand and type of wastewater generation.

Potential IWS systems include composting toilets, septic systems, and gray water systems. It is anticipated that septic systems, such as septic tanks and leach fields, will be feasible. The groundwater table will be investigated during design and elevation determined to verify any required vertical separation. Gray water systems may also be feasible but will be evaluated during the design phase. The close proximity to the wetlands will be considered for any and all wastewater systems.

Design requirements for the wastewater and gray water systems will comply with the City and County of Honolulu Wastewater System Design Standards, Department of Health requirements, and any other Federal, State, and County requirements.

6.4 Electrical System and Telecommunications

Currently, there is nominal electricity available in the He‘eia CDD. With the implementation of the He‘eia Master Plan, electrical and telecommunications needs will be assessed, installed and developed to meet the projected demand as agricultural, cultural and educational facilities are developed. Where possible, passive solar systems should be incorporated into the design of the respective facilities.

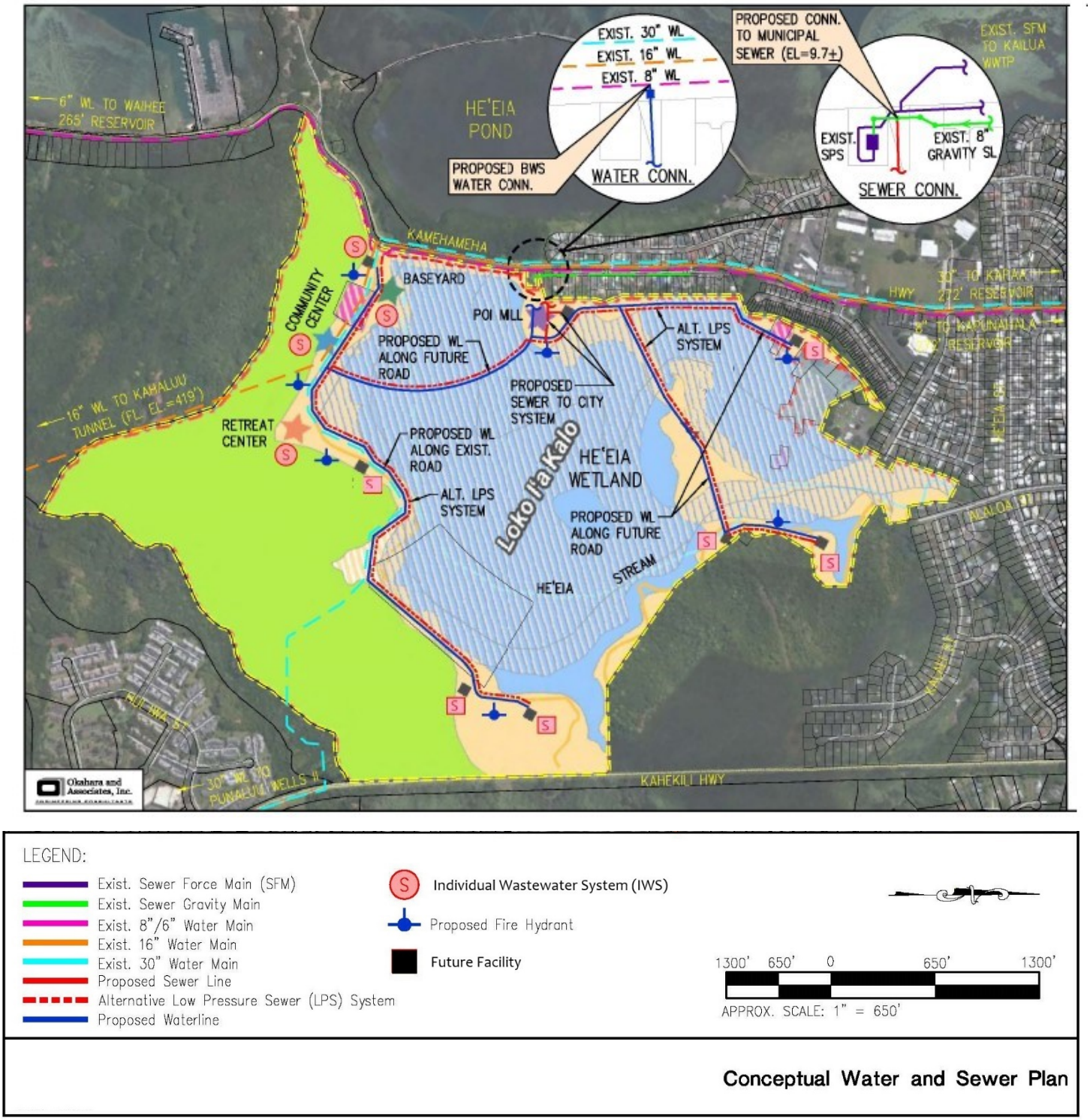


Figure 12: Water and Sewer Plan

7.0 Implementation

The He‘eia CDD Plan is a long-range plan that fulfills the Mana‘o Ho‘okō of *recognizing the value of ahupua‘a management principles, promote and cultivate ā‘ina momona (abundance) for the lands of He‘eia for present and future generations through culturally appropriate agriculture, education, and natural resources restoration and management*. In general, implementation of the master plan will be primarily carried out by the lessee, Kāko‘o ‘Ōiwi. Over the long term, the Authority will also have a key role in implementing the He‘eia CDD Plan.

He‘eia CDD Rules: In conjunction with the adoption of the He‘eia CDD Plan, administrative rules will be established to carry out the objectives of HRS Chapter 206E.

The He‘eia CDD Rules will contain specific definitions and standards for permitted uses within each land use zone, as well as procedures for reviewing and approving projects. Specifically, the He‘eia CDD Rules will include:

- Purpose and applicability
- Definitions and standards for allowable uses
- Land Use Plan
- Procedures for permit approvals

In general, applicable permits for agricultural uses will be administratively approved. Permits for cultural and educational facilities will be approved by the Authority.

Easements: In addition to the He‘eia CDD Rules, the Authority should also consider opportunities that will preserve agricultural use and wetland restoration in the District. Tools such as easments should be considered.

- Agricultural Easements: The intent of Agricultural Land Easements is to protect the long-term viability of the nation’s food supply by preventing the conversion of productive working lands to non-agricultural uses. For the He‘eia CDD, establishing an Agricultural Land Easement may be appropriate for a portion the Wao Loko i‘a Kalo zone to ensure and protect agricultural uses.
- Wetland Reserve Easements: Likewise, Wetland Reserve Easements can be implemented to protect the habitat for fish and wildlife, including threatened and endangered species, improve water quality by filtering sediments and chemicals, reduce flooding, recharge groundwater, protect biological diversity and provide opportunities for educational, scientific and limited recreational activities.

Infrastructure: Infrastructure will need to be installed and developed to meet the projected demand of the future facilities and uses. Infrastructure improvements can be divided into two categories: (1) infrastructure improvements or requirements for individual projects and (2) improvements which are necessary to service the District.

Infrastructure for individual projects will be the responsibility of the respective applicant. Infrastructure improvements to service the District will be undertaken by the HCDA or the master lessee and provided through State Capital Improvement Project appropriations, funding from HCDA revenues, and/or private funds.

Funding: It is anticipated that most facilities in the District will be initiated and developed by the community and non-profit organizations. All facilities will be approved by the Authority pursuant to the He‘eia CDD Administrative Rules and guidelines. Funding for these projects is assumed to be from private sources but may also include government support where deemed appropriate.

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