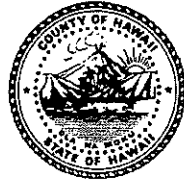


**Mitchell D. Roth**  
*Mayor*

**Deanna S. Sako**  
*Managing Director*



**Ramzi I. Mansour**  
*Director*

**Brenda Iokepa-Moses**  
*Deputy Director*

# County of Hawai'i

## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

345 Kekūānāo'a Street, Suite 41 · Hilo, Hawai'i 96720 · cohdem@hawaiicounty.gov  
Ph: (808) 961-8083 · Fax: (808) 961-8086

June 12, 2024

Ms. Mary Alice Evans, Director  
Office of Planning and Sustainable Development  
Environmental Review Program  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

Dear Ms. Evans

**Subject:** Chapter 343, Hawai'i Revised Statutes, Record of Determination for the Proposed Pāhala Large Capacity Cesspool Closure Project

With this letter, the County of Hawai'i (County) Department of Environmental Management (DEM) has determined that additional environmental review is not required for the Pāhala Large Capacity Cesspool Closure (Proposed Action). The County hereby requests for publication of this determination in the next issue of *The Environmental Office* pursuant to Section 11- 200.1-11, Hawai'i Administrative Rules (HAR).

Pursuant to Chapter 343 HRS, and HAR 11-200.1 a Prior Determination finding (as set forth below) was prepared for the Proposed Action.

### PROJECT BACKGROUND:

In June 22, 2017, the United States Environmental Protection Agency (EPA) and the County of Hawai'i Department of Environmental Management (COH-DEM) voluntarily entered into an Administrative Order on Consent (AOC) (Docket No. SDWA-UIC-AOC-2017-0002) to close the County owned large capacity cesspools (LCCs) in the town of Pāhala. The original proposed project to close the LCCs included the construction of a new collection system and new Aerated Lagoon Wastewater Treatment Plant and disposal system.

In February 2020, the US Environmental Protection Agency (EPA) and the County issued a Final Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project which was published in the March 8, 2020, issue of The Environmental Notice issued by the Environmental Review Program. The Final EA discussed the proposed wastewater collection system that would be constructed within five streets in the western portion of the community (Maile, 'Ilima, Huapala, Hinano and Hala Streets) and three streets in the eastern portion of the community (Puahala, Pikake and Kamani Streets). The Final EA also discussed the County's process for identifying alternative sites for the wastewater treatment plant (WWTP) and the selection of the preferred project site for the WWTP and effluent disposal system. A total of

nine alternative sites were identified and assessed before COH-DEM selected the 14.9-acre macadamia nut orchard project site for the wastewater treatment and effluent disposal facility. The WWTP development was to consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen, an adjacent disinfection system to remove pathogens, and four slow-rate land treatment basins for disposal of the treated effluent. The lagoon system and the four slow-rate land treatment system would have required removal of the entire existing macadamia nut orchard from the 14.9-acre project site. As proposed, the County would have provided an industry standard wastewater collection system and a secondary treatment and disposal facility.

The findings of the February 2020 Final EA outline that no significant impacts are anticipated to result from construction and use of the collection system and wastewater treatment and disposal facility. On February 24, 2020, by letter to the State of Hawaii Office of Environmental Quality Control (now the Environmental Review Program) the County Department of Environmental Management (DEM) issued a Finding of No Significant Impact (FONSI) notice for the Joint NEPA/HEPA Pāhala Large Capacity Cesspool Replacement Project. The February 2020 letter stated a Finding of No Significant Impact (FONSI) was determined for the project. The basis for this determination was set forth in the Final EA Section 8.1.1, which follows the significance criteria set forth in HAR, Title 11, Chapter 200, Section 12.

Following the issuance of the Final EA/FONSI, and pursuant to ongoing engineering design work, additional geophysical/geotechnical investigations identified and confirmed that a large subsurface lava tube extended under the proposed aerated lagoons. Further, the community had not been receptive to the employment of aerated lagoon technology with large open lagoons, specifically citing the potential for odors to affect the community.

In response to this, and effective as of August 22, 2022, the EPA and COH-DEM voluntarily entered a Revised AOC, which identified four project alternatives for evaluation:

- Alternative #1: Package Wastewater Treatment Plant and new collection system
- Alternative #2: Package Wastewater Treatment Plant Plants connected to the existing collection system
- Alternative #3: IWS – Maintenance program model
- Alternative #4: IWS – Operating program model

The Revised AOC outlines that an Environmental Information Document (EID) must be prepared by the County of Hawai'i for US Environmental Protection Agency (EPA) approval within 180 days of the approval of the Pāhala Preliminary Engineering Report (PER), to meet Federal Environmental Review Requirements.

The EID evaluated the four treatment alternative options, and considered the technical, environmental impact, public input, legal challenges, cost, and assorted factors, for a selection of a treatment option. As a result, COH-DEM WWD has selected Alternative 1 as the preferred option. The Final EID was completed in April 2024 and submitted to the EPA for approval.

#### PROJECT SETTING:

The community of Pāhala is located about 52 miles southwest of Hilo, in the Kaʻū District, Island of Hawaiʻi. The residential area of Pāhala is located west (mauka) of Māmalahoa Highway (State Route 11) and about 3.8 miles from the shoreline. Most of the community lies between 980 feet above mean sea level (msl) on the western end and approximately 800 feet above msl on the eastern end. Figure 1 shows the Pāhala location map.

Even though Kaʻū was one of the originally settled areas in the Hawaiian Islands, it remains a vast remote area. Only a fraction of a percent of the Kaʻū District has been developed with residential properties, and the remainder is largely used for agricultural purposes or remains undeveloped. The Kaʻū District covers about 922 square miles (approximately 590,000 acres), with over 80 miles of virtually undeveloped coastline. Nearly two-thirds of its total land area is in the Conservation District. The Kaʻū District consists of several communities, including the Pāhala community, which has a population of approximately 2,210 persons according to the US Census Bureau American Community Survey, 2021. The distance to the communities of Hilo and Kailua-Kona means that the Kaʻū District is relatively isolated from the major infrastructure systems found in those communities, including wastewater treatment and disposal facilities.

The Proposed WWTP Site is located adjacent to the intersection of Maile Street and Hawaiʻi Belt Road within a 14.9-acre portion of Tax Map Key (TMK): (3) 9-6-002-018. The Proposed Collection System Area will include five streets in the western portion of the community (Maile, ʻIlima, Huapala, Hinano, and Hala Streets) and three public streets in the eastern portion of the community (Puahala, Pikake, and Kamani Streets). The two remaining LCCs slated for closure are located within TMKs (3)9-6-002:024 (por.) and 9-6-016:041 (por.).

#### PROJECT DESCRIPTION:

Based on the above considerations, the County has determined not to proceed with implementation of the lagoon concept for wastewater treatment and the land-based effluent disposal as previously proposed in the February 2020 Final EA/FONSI. Instead, the Proposed Action will involve the development of a wastewater treatment package plant and subsurface irrigated effluent disposal WWTP facility on the same 14.9-acre project site as was previously proposed for the lagoon system. The County would also undertake development of the sewer collection system on the same County-owned streets and easements as was previously proposed and analyzed in the Final EA/ FONSI. Lastly, the County would undertake the closure of the two LCCs.

The April 2023 Preliminary Engineering Report (PER) provides a description of the package treatment facility and site plan for the facilities to be implemented at Pāhala. The site plan for Pāhala WWTP would occupy a 14.9-acre area within an existing macadamia orchard and 1,500-foot long by 25-foot wide utility easement within the 42.5-acre parcel near the intersection of Maile Street and Mamalahoa Highway, (State Route 11, Hawaiʻi Belt Road). About 4.0 acres of the 14.9-acre area would require removal of the existing macadamia nut orchard to accommodate the facilities needed to construct the package plant and related facilities. Thus, about 10.0+ acres would remain as the macadamia orchard which would be available for subsurface disposal of the treated effluent. Figure 2 shows the package plant and collection system site plan.

The 4.0-acre package plant includes the headworks, grit drying bed, potable water tank, utility building which includes a blower room, an emergency generator room, electrical room with a monitor control center, a maintenance and storage room, and restroom, an above ground fuel storage tank, and an irrigation control tank. The Pāhala package plant will include preliminary treatment, odor control and secondary treatment. The package plant will not include lagoons or any other facility with an open water system which could attract the four species of listed waterbirds.

The County intends to use funds either in part or in whole, from the State Revolving Fund (SRF) program and American Rescue Plan Act (ARPA) for the Pāhala collection system and package plant project as was previously contemplated for the lagoon concept. Use of SRF funds requires clearance under the National Historic Preservation Act (Section 106) and the Endangered Species Act (Section 7). The February 2020 Final EA included a concurrence by the State Historic Preservation Officer to the EPA's determination of "no historic properties affected" under the National Historic Preservation Act and with County DEM's determination of "no historic properties affected" under Chapter 6E, Hawai'i Revised Statutes. In 2024, the Hawai'i State Department Health (DOH, the designated non-federal representative for consultations), provided a letter to both the FWS and SHPD which included an updated description of the project, acknowledging that the project area has remained consistent with previous consultation efforts undertaken to support the 2020 Final EA - FONSI. The letter was intended to determine whether Section 7 and Section 106 consultation would need to be re-initiated as a result of the revised project description. On March 11, 2024, the FWS provided an email which concluded that the project would not need to undergo further Section 7 consultation as there were no significant changes to the project footprint or associated activities. On April 4, 2024, SHPD provided an email which concluded that the project would not need to undergo further Section 106 consultation as the project updates would change neither the previous concurrence that no historic properties will be affected nor the agreement for archeological monitoring for identification purposes.

Biological Resources surveys were undertaken in August 2018 and October 2023 to provide a listing of the various botanical and biological resources found along the collection system and on the 14.9-acre WWTP project site. The surveys would have identified any species currently proposed or listed as threatened or endangered under the Endangered Species Act or by the State of Hawai'i occurred on or could utilize within the surveyed areas. The October 2023 survey also included an on-the-ground survey of the collection system. The Biological Resources surveys showed that most of the surveyed area is highly modified and had no expectation of the areas to support native forest flora and minimal opportunity for native plants to become established.

Avian surveys were conducted in both August 2018 and October 2023. The survey findings showed a total of 17 avian species with only the Hawaiian Hawk native to the Hawaiian Islands. The Hawaiian Hawk is listed as an endangered species under the state statutes. However, it is not listed under the Endangered Species Act.

The Biological Resources survey indicated there are three listed night-flying seabirds in Hawai'i, the Hawaiian Petrel (*Pterodroma sandwichensis*), Newell's Shearwater (*Puffinus newelli*) and Band-rump Storm Petrel (*Hydrobates castro*). On the Island of Hawai'i these three species nest in upland mountainous habitat. In the summer and fall, night-flying seabirds (especially

fledglings) transiting to the sea from inland locations can become disoriented by exterior lighting. When disoriented, seabirds may collide with man-made structures or the ground. No suitable nesting habitat for seabirds occurs in the Project area.

The Project can minimize or avoid risks to protected night-flying seabirds by not conducting night-time construction and ensuring that all associated outdoor lighting is fully shielded (Night sky compliant; HDLNR-DOFAW, 2016).

DETERMINATION:

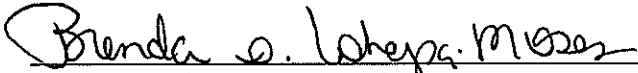
The Proposed Action encompasses the development of a wastewater treatment package plant for treatment of incoming sewage flows and a subsurface irrigated effluent disposal system which will be constructed on the same 14.9-acre site as was assessed in the February 2020 Final EA. Further, the County would construct the wastewater collection system and the closure of the LCCs as was described in the February 2020 Final EA.

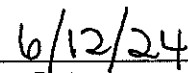
Based on these considerations, the Proposed Action is anticipated to have direct, indirect and cumulative effects similar to those set forth and analyzed in the February 2020 Final EA - FONSI.

The County of Hawai'i Department of Environmental Management has determined that the Proposed Action consistent with the previously prepared Final EA – FONSI, and that a supplemental statement is not required. Therefore, the Proposed Action may proceed without further or additional HRS Chapter 343 environmental review.

DECLARATION OF DETERMINATION:

The direct, cumulative, and potential impacts of the action described above have been considered pursuant to Chapter 343, Hawai'i Revised Statutes and Chapter 11-200.1, Hawai'i Administrative Rules. COH-DEM has determined that additional environmental review for the Proposed Action would not be required as it is both a component of and is substantially similar in use and scale to actions that either received processed under a FONSI. Moreover, it has also been determined that the Proposed Action is anticipated to have direct, indirect, and cumulative effects similar to those analyzed under previously completed Chapter 343, Hawai'i Revised Statutes (HRS) environmental review processes.

  
Signature of Director or Delegate

  
Date

- This document is on file on our website and is available for public review.
- This document has been submitted to the Office of Environmental Quality Control for publication in *The Environmental Notice*.

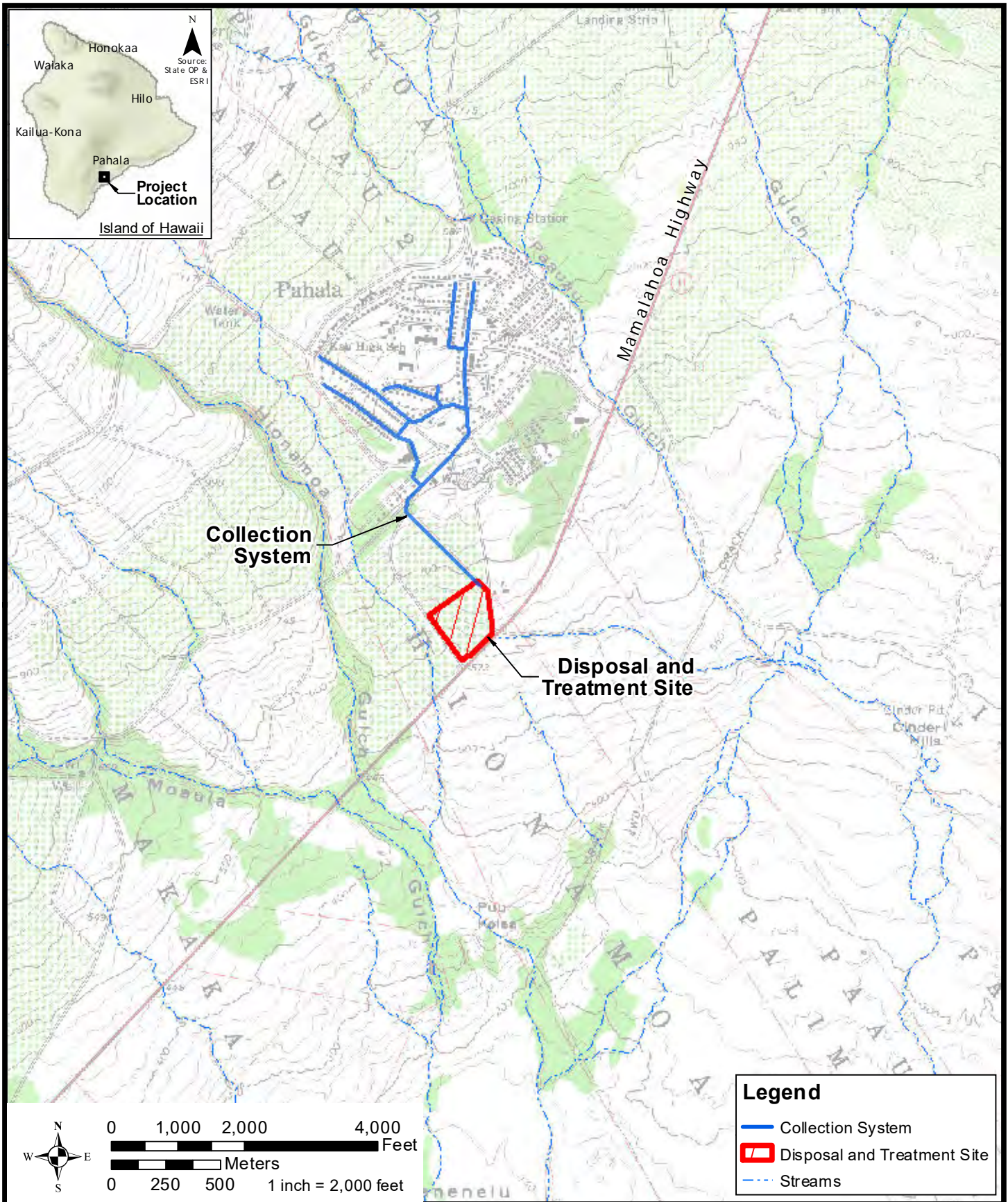
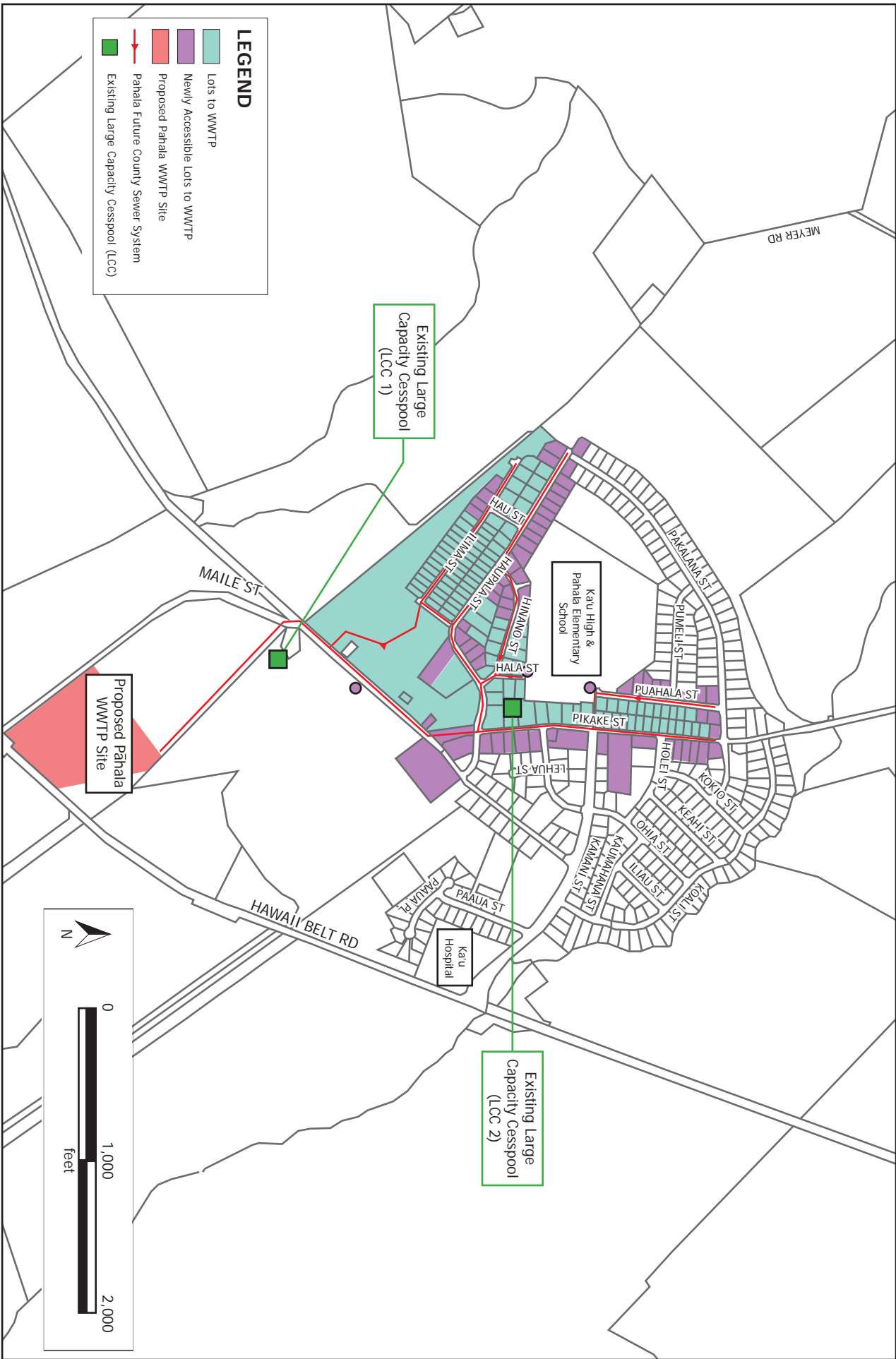


FIGURE 1  
PROJECT LOCATION MAP





# ALTERNATIVE 1 SITE PLAN

PĀHALA LARGE CAPACITY CESSPOOL CLOSURE PROJECT

FIGURE 2

Final Environmental Assessment / Finding of No Significant Impact Notice  
(Joint NEPA/HEPA)  
Pahala Large Capacity Cesspool Replacement Project  
February 2020



Harry Kim  
Mayor

Roy Takemoto  
Managing Director



FILE COPY

MAR - 8 2020

William A. Kucharski  
Director

Diane A. Noda  
Deputy Director

County of Hawai'i  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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February 24, 2020

Dr. Keith Kawaoka, Acting Director  
Office of Environmental Quality Control  
State of Hawai'i  
235 South Beretania Street, Room 702  
Honolulu, Hawai'i 96813

**Subject: Final Environmental Assessment/Finding of No Significant Impact Notice  
(Joint NEPA/HEPA)  
Pāhala Large Capacity Cesspool Replacement Project  
Pā'au'au, Ka'ū, Hawai'i Island, Hawai'i  
WWTP Tax Map Key (TMK): (3) 9-6-002:018**

Dear Dr. Kawaoka:

The U.S. Environmental Protection Agency (EPA) and the Hawai'i County Department of Environmental Management (DEM) are issuing a joint Final Environmental Assessment (FEA) of the Proposed Pāhala Large Capacity Cesspool Replacement Project. With this letter DEM hereby transmits the subject FEA notice.

This FEA was prepared in accordance with the National Environmental Policy Act (NEPA), EPA and Council on Environmental Quality NEPA regulations as well as the Hawai'i Environmental Policy Act (HEPA-Hawai'i Revised Statutes, Chapter 343) and implementing rules Hawai'i Administrative Rules (HAR), Title 11, State of Hawai'i Department of Health Chapter 200, Environmental Impact Statement Rules.

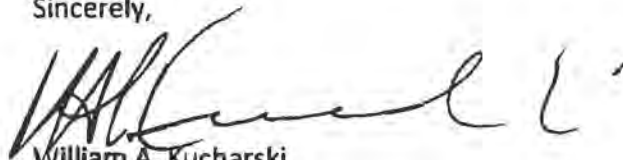
A Finding of No Significant Impact is determined for this project. The basis for this determination is set forth in the FEA Section 8.1.1, which follows the significance criteria set forth in HAR, Title 11, Chapter 200, Section 12.

Pursuant to the requirements of Sections 11-200-9.1 and 11-200-11.1 Hawai'i Administrative Rules, we request that you publish notice of the FEA in the March 8, 2020, periodic bulletin *The Environmental Notice*.

Dr. Keith Kawaoka, Acting Director  
Office of Environmental Quality Control  
February 24, 2020  
Page 2

Please contact Dora Beck, County of Hawai'i Wastewater Division Chief, at (808) 961-8513 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Kucharski', written in a cursive style.

William A. Kucharski  
Director

cc: Dora Beck, DEM-WWD  
Sandra Mendonca, DEM-WWD  
Kate Rao, Environmental Protection Agency  
Craig Lekven, Brown and Caldwell  
Earl Matsukawa, Wilson Okamoto Corporation  
Patrick Goodwin, ERG

WK:mf



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

### FINDING OF NO SIGNIFICANT IMPACT

Pāhala Large Capacity Cesspool Replacement Project, Hawai'i, United States

#### ***Proposed Action***

In accordance with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370h, and its implementing regulations, 40 C.F.R. §§ 1500.1-1508.28, as well as the U.S. Environmental Protection Agency (EPA) procedures for implementing NEPA, 40 C.F.R. Part 6, EPA has prepared a Final Environmental Assessment (EA) describing the potential environmental impacts associated with, and the alternatives to, the proposed Pāhala Large Capacity Cesspool (LCC) Replacement Project (Proposed Action).

#### ***Project Background***

In 2006, EPA awarded a Special Appropriations Act Project (SAAP) grant to the County of Hawai'i (County) for the Ka'ū LCC Replacement Project (Grant No. XP-96942401) in the amount of \$1.842 million. The initial SAAP grant work plan included wastewater upgrade projects for LCCs serving both the Nā'ālehu and Pāhala communities in the Ka'ū District. It was later determined that federal grant funds would only cover a portion of one of the projects. The grant work plan was revised to address the LCCs serving the Pāhala community since the timeline appeared to be on a faster path than Nā'ālehu and there was a concern about spending grant funding within the project period.

EPA's award of the SAAP grant for the Proposed Action is considered a major federal action requiring compliance with NEPA in accordance with 40 C.F.R. § 1508.18. In addition, NEPA regulation 40 C.F.R. § 1506.2, calls for federal agencies to cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements. The Final EA has been prepared by both the EPA and the County of Hawai'i to meet the content and procedural requirements of both NEPA and Hawai'i State and local requirements.

#### ***Purpose and Need for Action***

In 1999, EPA promulgated regulations under the Safe Drinking Water Act's (SDWA) Underground Injection Control (UIC) Program which prohibited the construction of new LCCs as of April 2000 and required the closure of all existing LCCs by April 5, 2005 (40 C.F.R. § 144.88). Under federal regulations, an LCC is a cesspool which serves multiple dwellings, or for non-residential facilities has the capacity to serve 20 or more persons per day. In June 2017, EPA and the County entered into an Administrative Order on Consent (AOC) to close the LCCs serving the Pāhala community by June 2021. The compliance date was revised in September 2019 to April 2023.

The purpose of the Proposed Action is to enable the County to comply with the SDWA and to fulfill the compliance provisions of the June 2017 AOC between EPA and the County with respect to closure of the Pāhala LCCs by April 2023.

The need for action is driven by the public health and environmental concerns associated with LCCs. Cesspools can release disease-causing pathogens and other pollutants (e.g., nitrates) into groundwater aquifers, streams, and eventually the ocean, thus leading to public health and environmental concerns.

## ***Alternatives Analysis and Selection of the Preferred Alternative***

The proposed location for the Proposed Action is both within and immediately south of the community of Pāhala, which is about 52 miles southwest of Hilo, in the Ka'ū District, Island of Hawai'i. Pāhala is located west (mauka) of Māmalahoa Highway (State Route 11) about 3.8 miles from the shoreline. Most of the community lies between 980 feet above mean sea level (msl) on the western end and approximately 800 feet above msl on the eastern end.

Candidate sites were identified based on three primary criteria. First, the site would have to be appropriate for the preliminary design of the treatment and disposal facility. Second, access to the site would allow the County to meet the various requirements of the AOC that stipulated closure of the LCCs by June 2021. Third, the environmental impacts of construction of the treatment and disposal facility were considered. Based on these three primary criteria, and considering additional suggestions from the Pāhala community obtained during Community Outreach meetings in December 2017, nine candidate sites for the proposed wastewater treatment and disposal facility were identified.

As detailed in the Final EA, the suitability of each candidate site was evaluated using a weighted scoring system that considered twenty-one criteria within four general categories (environmental, social, and cultural; location and site; land use and availability; and collection system and service area). The three highest-scoring candidate sites (Sites 7, 8, and 9) were carried forward as alternatives for evaluation, and the highest-scoring site (Site 7) was ultimately selected as the Preferred Alternative.

### **Site 7 Alternative (Preferred Alternative)**

Under the Preferred Alternative for the Proposed Action, the County will perform the following actions:

- 1) Acquire, or otherwise obtain the right to develop and use, a 14.9-acre portion of a 42.5-parcel (Tax Map Key (TMK): 9-6-002:018), identified as "Site 7", that is currently owned by B. P. Bishop Estate Trustees (commonly known as Kamehameha Schools), then construct a new secondary wastewater treatment and disposal facility within that portion of the parcel;
- 2) Construct a new wastewater collection system, primarily within the public right-of-way (ROW) and three segments within easements in the Pāhala community, to collect and convey sanitary waste from the currently connected and accessible (in accordance with Hawai'i County Code) properties to the new wastewater treatment and disposal facility;
- 3) Close and abandon two LCCs, according to State of Hawai'i Department of Health closure procedures; and
- 4) Abandon the existing wastewater collection system in place.

Under the Preferred Alternative, the proposed wastewater treatment and disposal facility will occupy about 14.9 acres and will consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen, an adjacent disinfection system to remove pathogens, and four slow-rate land treatment basins that occupy a total area of approximately 8.0 acres for disposal of the treated effluent. The proposed wastewater collection system will be located within five streets in the western portion of the community (Maile, 'Ilima, Huapala, Hīnano, and Hala Streets) and three public streets in the eastern portion of the community (Puahala, Pīkake, and Kamani Streets).

### **Site 8 Alternative**

Under the Site 8 Alternative for the Proposed Action, the County would perform the same actions as described above for the Preferred Alternative, with the exception that the new wastewater treatment and disposal facility would be constructed at Site 8, a 45.2-acre parcel (TMK: 9-6-002:021) located southwest of and adjacent to Site 7, across Maile Street and above Māmalahoa

Highway. The Site 8 Alternative would require approximately 1,600 feet of additional pipe within the ROW of Lower Maoula Road for the new wastewater collection system and, because of the steeper slopes, would require larger slow-rate land application groves totaling approximately 12 acres. Site 8 was not selected as the Preferred Alternative because it scored lower in the weighted scoring system due to the presence of a stream bisecting the parcel lengthwise that would complicate siting of the treatment and disposal facility.

#### Site 9 Alternative

Under the Site 9 Alternative for the Proposed Action, the County would perform the same actions as described above for the Preferred Alternative, with the exception that the new wastewater treatment and disposal facility would be constructed at Site 9, a 157-acre parcel (TMK: 9-6-002:049) located southeast of Sites 7 and 8 across Māmalahoa Highway. The Site 9 Alternative would require approximately 3,200 feet of additional pipe within the ROW of Maile Street and across Māmalahoa Highway for the new wastewater collection system. Site 9 was not selected as the Preferred Alternative because it scored lower in the weighted scoring system due to the presence of surface water within the parcel and the added difficulty of access given its location relative to existing roads.

#### No-Action Alternative

In addition to the Site 7, 8, and 9 Alternatives, EPA considered a No-Action Alternative, under which the County would continue to use the two existing LCCs in Pāhala, existing substandard gravity sewer lines, and individual septic systems. No additional properties would be added to the community sewer system under this alternative. Under the No-Action Alternative, the action would not be implemented and the Pāhala community would not be provided with an acceptable wastewater collection, treatment, and disposal system. This alternative would not fulfill the purpose and need for the action and would result in non-compliance with the AOC between EPA and the County. Because this alternative would not achieve the objectives of the SAAP grant, protect human health and the environment, or enhance State and local agency efforts to achieve compliance with the Safe Drinking Water Act, it was not considered to be the Preferred Alternative.

### ***Environmental Impacts***

In compliance with NEPA, EPA has prepared a Final EA that analyzes the environmental impacts of the Pāhala LCC Replacement Project. After considering a wide range of regulatory, environmental (both natural and human), and socioeconomic factors, the Final EA did not identify any significant impacts to the environment that will result from the implementation of the Preferred Alternative for the Proposed Action. The following is a summary of environmental impacts as described in the Final EA associated with the Preferred Alternative.

#### Summary of Endangered Species Act, Section 7 Consultation

The collection system will be constructed primarily within areas that were disturbed during construction of County streets, plus two short segments within easements in the Pāhala community. The treatment and disposal facility site has previously been cleared, graded, and planted with a macadamia nut orchard. The affected sites do not provide habitat for federal or State of Hawai'i listed or candidate threatened or endangered species of flora or fauna. A biological field survey in August 2018 did not identify any native mammalian or avian species within Site 7, though the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus newelli*) have been recorded flying over the general area between April and the end of November each year. Construction and design of the wastewater treatment and disposal facility will incorporate impact avoidance measures as summarized below to avoid or minimize adverse effects to protected avian species. On December 21, 2018, the designated non-federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of EPA and the County of Hawai'i, requested concurrence from the U.S. Fish and Wildlife Service (FWS)

that the Pāhala LCC Replacement Project is not likely to adversely affect federally listed threatened and endangered species or critical habitat. The FWS concurred on February 15, 2019 that the Preferred Alternative may affect, but is not likely to adversely affect, listed species.

#### Summary of National Historic Preservation Act, Section 106 Consultation

An Archaeological Inventory Survey (AIS), which included subsurface testing within Site 7, was conducted to test for the presence of archaeological resources on the project site. The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface within the proposed treatment and disposal facility site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching in Site 7. On September 26, 2019, EPA sent a letter to Hawai'i State Historic Preservation Division (SHPD) to document its determination that no historic properties will be affected by the undertaking and to request concurrence from SHPD in accordance with 36 C.F.R. § 800.4(d)(1). Pursuant to 36 C.F.R. §800.5(c)(1), EPA may proceed after the close of a 30-day review period if SHPD does not provide a response within such time. No response was received within this timeframe, therefore, EPA fulfilled its responsibilities under Section 106. The Preferred Alternative will incorporate appropriate mitigation measures as summarized below to avoid impacts should unanticipated archeological resources be discovered during construction.

Consultation letters were delivered to invite comments from organizations that may attach religious or cultural significance to properties affected by the Preferred Alternative. A total of 14 letters were mailed to various Native Hawaiian Organizations requesting comments. No responses were received from these organizations.

#### Summary of Other Resource Area Impacts

The Preferred Alternative will result in minor, short-term impacts to noise, air quality, and traffic in the immediate vicinity of the project site during the period of construction. Short-term construction-related impacts include intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including a possible short-term increased noise impact associated with the removal of bedrock depending on conditions encountered in the collection system area. Construction of the wastewater treatment and disposal facility will also require removal of macadamia nut trees, removal of several of the Cook pines (*Araucaria columnaris*) that line Maile Street, and clearing and excavating for construction of various improvements. Wastewater treatment plants can be a source of nuisance odors to the surrounding community if not properly designed or operated. However, the facility will include an odor control system to limit odors typically associated with a wastewater treatment facility. The minor short-term increase in traffic during construction of the proposed wastewater treatment and disposal facility will be due to the transport of construction equipment and supplies to the construction site. Deliveries to the construction site could require temporary stoppage of traffic on Maile Street to safely unload equipment and supplies. Operation of the wastewater treatment and disposal facility will contribute almost no additional light pollution, noise, or air emissions to the local area or detrimentally affect air or water quality.

Construction of the treatment and disposal facility will result in an increase in impervious surfaces. However, the treatment and disposal facility would be designed with an on-site drainage system and will ensure there is no adverse impact on adjacent or downstream properties due to post-development flows. In addition, the wastewater treatment and disposal facility would be designed and sized so the exposed (not enclosed) treatment processes have sufficient free-board depth to accommodate a 24-hour, 100-year storm event at the site. The wastewater treatment processes would be designed to accommodate the peak flows caused by the design storm event, including precipitation that falls on the aerated and covered lagoon treatment system.

Other resource areas besides those described above were evaluated in the Final EA but will not be impacted by the Proposed Action. These include, but are not limited to, floodplains, wetlands,

coastal zones, and Sole Source Aquifers. The Preferred Alternative does not establish a drinking water system, and since no Sole Source Aquifers are present on the Island of Hawai'i, will not impact such aquifers based on the location. The collection system and wastewater treatment and disposal facility will not affect coastal resources and is not located within a floodplain area and therefore will not have an adverse impact on floodplains and will minimize the risk of flood-related impacts on surrounding properties. The site of the Preferred Alternative contains no wetland features and no streams and therefore is not expected to impact surface water or wetland resources.

The Pāhala LCC Replacement Project will allow the County to provide wastewater collection, treatment, and disposal facilities meeting the needs of the Pāhala community and will have a beneficial impact on the economic and social welfare of the community. The Preferred Alternative will not result in population changes in the Pāhala area. The Preferred Alternative will not result in disproportionately high and adverse human health or environmental effects on sensitive populations.

### ***Mitigation Measures***

The Preferred Alternative will include the incorporation of certain mitigation measures as discussed in the Final EA, including, but not limited to, measures related to archeological resources and those that were specified in the FWS Section 7 Consultation process. The Preferred Alternative will incorporate appropriate mitigation measures to avoid impacts should unanticipated archeological resources be discovered during construction. The contract documentation will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease immediately and the find will be protected from further damage.

The Preferred Alternative will incorporate the avoidance and minimization measures cited in the FWS Section 7 Consultation letter, including, but not limited to, avoiding impacts to potential Hawaiian hoary bat habitat during the bat birthing and pup rearing season, conducting a Hawaiian hawk nest survey prior to any work during the nesting season, avoiding activities near active nests, and avoiding nighttime construction during the seabird fledging period.

### ***Public Review and Comments***

A Draft EA was circulated for public comment from September 23, 2018 through December 10, 2018. In accordance with 40 C.F.R. § 6.203(b)(1), a preliminary FONSI was made available for public review and comment as part of the Draft EA. A public information meeting was conducted by the County on October 10, 2018 in Pāhala at the Ka'ū Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA and process for submitting comments. In addition, the County conducted two additional workshops for property owners that would be affected by the Proposed Action prior to the October 10 public information meeting. Lastly, the County voluntarily convened an additional public meeting in Pāhala on March 21, 2019 to gain further input from property owners and provide financing options available to owners of certain parcels that would be affected by the Proposed Action.

EPA received detailed, technical, and other public comments from individuals, various agencies, and interested parties. In total, 77 comment letters were received, some of which included multiple individual comments. Responses to comments were developed and are attached to the Final EA as an appendix. No substantial changes to the Proposed Action were necessary as a result of comments on the Draft EA.

**Finding**

After carefully considering the regulatory, environmental, and socioeconomic factors as described in the Final EA, EPA has determined that the Preferred Alternative of the Proposed Action will not significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of NEPA. Accordingly, preparation of an environmental impact statement on the Proposed Action is not required and this FONSI formally documents EPA's finding of no significant impact in accordance with 40 C.F.R. § 1508.13, 40 C.F.R. § 6.206, and 40 C.F.R. § 6.203(b).

APPROVAL



Tomás Torres  
Director, Water Division



Date



## AGENCY PUBLICATION FORM

Project Name:	Pāhala Large Capacity Cesspool Replacement Project
Project Short Name:	Pāhala Large Capacity Cesspool Replacement
HRS §343-5 Trigger(s):	Use of State and County lands and funds
NEPA Trigger	Use of congressional earmark funds
Island(s):	Hawai'i
Judicial District(s):	Ka'u
TMK(s):	9-6-002:018
Permit(s)/Approval(s):	State of Hawai'i Department of Health - Approval to Construct, Approval to Use, National Pollutant Discharge Elimination System (NPDES) Permit, Underground Injection Well Abandonment, Noise Noise Permit, Noise Variance (if required) County of Hawai'i - Special Permit, Plan Approval, Grading Permit, Building Permit, Fence Permit, Street Usage Permit
Proposing/Determining Agencies:	County of Hawai'i Department of Environmental Management / U.S. Environmental Protection Agency, Region 9
<i>Contact Name, Email, Telephone, Address</i>	Dora Beck, 345 Kekūanāo'a St., Suite 41, Hilo, HI 96720 <a href="mailto:Dora.Beck@hawaiicounty.gov">Dora.Beck@hawaiicounty.gov</a> (808) 961-8083
Accepting Authority:	(for EIS submittals only)
<i>Contact Name, Email, Telephone, Address</i>	
Consultant:	Wilson Okamoto Corporation (COH) / Eastern Research Group, Inc (EPA)
<i>Contact Name, Email, Telephone, Address</i>	Keola Cheng, Project Manager 1907 S. Beretania Street, Suite 400 Honolulu, HI 96826 <a href="mailto:PahalaEA@wilsonokamoto.com">PahalaEA@wilsonokamoto.com</a> tel: (808) 946-2277 / fax: (808) 946-2253

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

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

 X FEA-FONSI

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

 FEA-EISPN

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

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

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

 DEIS

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

 FEIS

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

 FEIS Acceptance  
Determination

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

- FEIS Statutory Acceptance Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
- Supplemental EIS Determination The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
- Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.
- Other Contact the OEQC if your action is not one of the above items.

**Project Summary**

Provide a description of the proposed action and purpose and need in 200 words or less.

The County of Hawai'i Department of Environmental Management proposes to construct wastewater system improvements to replace the existing large capacity cesspools (LCCs) currently serving Pāhala, in order to comply with U.S. Environmental Protection Agency (EPA) regulations. The project improvements would include a new wastewater collection system located primarily within public streets in the Pāhala community, and a treatment and disposal system on land to be acquired by the County (TMK: 9-6-002: 018). The project would be partially funded by an EPA grant and by the State of Hawai'i Department of Health Clean Water State Revolving Fund loan program.

The collection system would consist of approximately 12,150 linear feet of 8 to 12-inch diameter underground gravity flow piping in Maile, 'Ilima, Huapala, Hīnano, Hala Streets, Puahala, Pīkake, and Kamani Streets. The treatment and disposal facility would occupy about 14.9 acres and consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen with an adjacent disinfection system to remove pathogens, and four slowrate land treatment basins for further treatment and disposal of the treated effluent. A perimeter security fence would enclose the entire facility. The existing LCCs and associated wastewater collection system would be abandoned.

**ENVIRONMENTAL ASSESSMENT**  
for the  
Pāhala Large Capacity Cesspool (LCC)  
Replacement Project  
EPA Grant XP-96942401

**VOLUME 1**

Pāhala, District of Ka‘u, County of Hawai‘i, Hawai‘i  
TMK: 9-6-002:018

**U.S. Environmental Protection Agency**

Region 9  
75 Hawthorne Street  
San Francisco, California 94105

**County of Hawai‘i**

25 Aupuni Street  
Hilo, HI 96720

FINAL

February 2020

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**TITLE PAGE**

Prepared for:

U.S. Environmental Protection Agency and the County of Hawai'i

Prepared By:

Brown & Caldwell – contractor to the County of Hawai'i

Wilson Okamoto Corporation – subcontractor to Brown & Caldwell

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## PREFACE

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The National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321 – 4347), requires a federal agency proposing to undertake a project to consider the potential environmental impacts of the proposed project. Use of federal funds for a project is among the criteria set forth in NEPA that require preparation of environmental review documentation under NEPA and procedural requirements at 40 CFR Parts 1500-1508 (Council on Environmental Quality (CEQ) regulations), and 40 CFR Part 6 (U.S. Environmental Protection Agency (EPA) regulations). The Pāhala Large Capacity Cesspool (LCC) Replacement Project will be constructed with funds provided by EPA. EPA Region 9 has determined that NEPA requirements for the proposed project can be fulfilled by preparing an Environmental Assessment (EA) with a Finding of No Significant Impact (FONSI).

Comparably, Hawai'i Revised Statutes (HRS) 343, as amended, and implementing rules under Hawai'i Administrative Rules (HAR) 11-200 (Environmental Impact Statement Rules) require state and local governmental agencies undertaking projects utilizing state or county lands or funds to consider the potential environmental impacts of a proposed project by preparing environmental review documentation. The Pāhala LCC Replacement Project will be constructed by the County of Hawai'i Department of Environmental Management (DEM) using County funds. Based on HAR § 11-200-9(a)(4), construction and use of the proposed project does not warrant the preparation of an environmental impact statement. Further, based on the findings and the assessment of potential impacts of the proposed project as set forth in HAR § 11-200-12 and documented in Section 8.1.1 of this Final EA, a FONSI is determined by DEM (see Section 8.1.2).

Federal NEPA regulations at 40 CFR § 1506.2 direct federal agencies to cooperate with state and local agencies to the fullest extent possible to reduce duplication between NEPA and state and local requirements. See also 40 CFR §§ 6.200 and 6.201. Hawai'i law and regulations similarly direct agencies subject to HRS 343 to cooperate with federal agencies to the fullest extent possible (HRS § 343-5(h), HAR § 11-200-25(2)). This EA has been prepared to jointly meet the content and procedural requirements of both NEPA and federal cross-cutting authorities, and HRS 343, as amended.

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## ACRONYMS

AAQS	Ambient air quality standards
AC	Asphaltic concrete
ACS	American Community Survey
AHPA	Archaeological and Historic Preservation Act
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawai'i
AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
BMP	Best management practice
BOD <sub>5</sub>	Five-day biochemical oxygen demand
CAA	Clean Air Act
CBRA	Coastal Barrier Resources Act
CBRS	Coastal Barrier Resources System
CDP	Community Development Plan
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CREAT	Climate Resilience Evaluation and Awareness Tool
CWRM	Commission on Water Resource Management
CWSRF	Clean Water State Revolving Fund
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
dBA	A-weighted decibel scale
DBEDT	(State of Hawai'i) Department of Business, Economic Development and Tourism
DEM	(County of Hawai'i) Department of Environmental Management
DLNR	(State of Hawai'i) Department of Land and Natural Resources
DOE	(State of Hawai'i) Department of Education
DOH	(State of Hawai'i) Department of Health
DOT	(State of Hawai'i) Department of Transportation
DWS	(County of Hawai'i) Department of Water Supply
EA	Environmental Assessment
EFH	Essential Fish Habitat
EMS	Emergency medical services
EO	Executive Order
EPA	(United States) Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FWS	(United States) Fish and Wildlife Service

GAC	Granular activated carbon
HAR	Hawai'i Administrative Rules
HCC	Hawai'i County Code
HDPE	High-density polyethylene
HELCO	Hawai'i Electric and Light Company
HRS	Hawai'i Revised Statutes
HUD	(United States) Department of Housing and Urban Development
IBC	International Building Code
LCC	Large capacity cesspool
LF	Linear feet
LSB	(University of Hawai'i) Land Study Bureau
LUC	(State of Hawai'i) Land Use Commission
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
msl	Mean sea level
NAAQS	National ambient air quality standards
NEPA	National Environmental Policy Act
NFPA	National Fire Prevention Association
NHO	Native Hawaiian Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OEQC	(State of Hawai'i) Office of Environmental Quality Control
OSHA	Occupational Safety and Health Administration
PER	Preliminary Engineering Report
PM <sub>2.5</sub>	Particulate matter with a diameter of 2.5 micrometers or less
PM <sub>10</sub>	Particulate matter with a diameter of 10 micrometers or less
PVC	Polyvinyl chloride
REC	Recognized environmental concern
ROW	Right-of-way
SAAP	Special Appropriations Act Project
SDWA	Safe Drinking Water Act
SF	Square feet
SHPD	(Hawai'i) State Historic Preservation Division
SIHP	(Hawai'i) State Inventory of Historic Places
SIP	State Implementation Plan
SMA	Special Management Area
SO <sub>2</sub>	Sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
TMK	Tax Map Key



TSS	Total suspended solids
TTEE	Trustees
UIC	Underground Injection Control
U.S.C.	United States Code
USDA	United States Department of Agriculture
USDA-RD	United States Department of Agriculture – Rural Development Program
USGS	United States Geological Survey
UV	Ultraviolet light

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# 1 SUMMARY

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**Proposing County Agency:**

County of Hawai'i  
Department of Environmental Management  
345 Kekūanāo'a Street, Suite 41  
Hilo, HI 96720

**Proposing Federal Agency:**

U.S. Environmental Protection Agency, Region 9  
75 Hawthorne Street  
San Francisco, CA 94105

**EA Preparers:**

Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826  
Contact: Earl Matsukawa, AICP, Project Manager  
Tel: 808.946.2277; Fax: 808.946.2253

Eastern Research Group, Inc.  
14555 Avion Parkway, Suite 200  
Chantilly, VA 20151  
Contact: Patrick Goodwin, Project Manager  
Tel: 703.615.4371

**Project Location:**

Pāhala, Hawai'i

**Recorded Fee Owner:**

B. P. Bishop Estate, TTEES (Kamehameha Schools) (wastewater treatment and disposal facility site)

**Tax Map Key:**

9-6-002:018 (wastewater treatment and disposal facility)  
9-6-005:036 and 9-6-005:044 (easements for wastewater collection system)  
9-6-002:016 (LCC 1)  
9-6-016:041 (LCC 2 and associated temporary easement)  
Various (laterals to wastewater collection system)

**Area:**

14.9 acres (wastewater treatment and disposal facility)  
42.5 acres (parcel for wastewater treatment and disposal facility)

**State Land Use Classification:**

Urban  
Agricultural

**County Zoning:**

Single and Multi-Family Residential; Village Commercial; Industrial; and A-20a

**Proposed Action:**

The proposed wastewater collection system would be located within five streets in the western portion of the community (Maile,

'Ilima, Huapala, Hīnano, and Hala Streets) and three streets in the eastern portion of the community (Puahala, Pīkake, and Kamani Streets).

The proposed wastewater treatment and disposal facility would occupy 14.9 acres and would consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen and an adjacent disinfection system to remove pathogens and four slow-rate land treatment basins for disposal of the treated effluent.

**Impacts:**

No significant impacts are anticipated from construction and use of the collection system and the wastewater treatment and disposal facility.

**Agencies Consulted in  
Pre-Draft Assessment:**

**Federal**

U.S. Army Corps of Engineers

U.S. Fish and Wildlife Service

U.S. Department of Agriculture Natural Resources Conservation  
Service

National Oceanic and Atmospheric Administration

National Park Service Hawai'i Volcanoes National Park

**State of Hawai'i**

Department of Agriculture

Department of Accounting and General Services

Department of Business, Economic Development and Tourism  
(DBEDT)

DBEDT, Hawai'i State Energy Office

DBEDT, Land Use Commission

DBEDT, Office of Planning

Hawai'i Emergency Management Agency

Department of Health (DOH)

DOH, Office of Environmental Quality Control

DOH, Office of Director

DOH, Environmental Management Division

DOH, Environmental Planning Office

DOH, Clean Water Branch

DOH, Safe Drinking Water Branch

DOH, Wastewater Branch  
Department of Land and Natural Resources (DLNR)  
DLNR, Engineering Division  
DLNR, Division of Forestry and Wildlife  
DLNR, State Historic Preservation Division  
DLNR, Commission on Water Resources Management  
Department of Transportation  
Department of Hawaiian Home Lands  
Office of Hawaiian Affairs  
University of Hawai'i, Environmental Center  
Hawai'i State Library  
Hilo Regional Library

**County of Hawai'i**

Hawai'i Fire Department  
Department of Parks and Recreation  
Planning Department  
Police Department  
Department of Public Works  
Department of Water Supply

**Elected Officials**

Congresswoman Tulsi Gabbard  
State Senator Russell Ruderman  
State Representative Richard H.K. Onishi  
Councilmember Maile David

**Native Hawaiian Organizations**

Hawai'i Island Burial Council  
Association of Hawaiian Civic Clubs  
Charles Pelenui Mahi 'Ohana  
Friends of 'Iolani Palace  
Hawaiian Civic Club of Hilo  
Kamehameha Schools  
Kanu o ka'Āina Learning 'Ohana

Ko'olau Foundation

Maku'u Farmers Association

Na Koa Ikaika Ka Lāhui Hawai'i

Office of Hawaiian Affairs

Pacific Agricultural Land Management Systems

Partners in Development Foundation

Pi'ihonua Hawaiian Homestead Community Association

**Other**

Hawai'i Gas

Hawaiian Electric Light Company

Hawaiian Telcom

Spectrum Hawai'i

Mr. Stason Nishimura

Mr. Lance Uno

Ms. Julia Neal

The comments and responses are shown in Appendix A.

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## 2 PROPOSED PROJECT DESCRIPTION

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### 2.1 Background

#### 2.1.1 Pāhala Community

The community of Pāhala is located about 52 miles southwest of Hilo, in the Ka'ū District, Island of Hawai'i. Pāhala is located west (mauka) of Māmalahoa Highway (State Route 11) about 3.8 miles from the shoreline. Most of the community lies between 980 feet above mean sea level (msl) on the western end and approximately 800 feet above msl on the eastern end. Figure 2.1 shows the location of Pāhala.

Even though Ka'ū was one of the originally settled areas in the Hawaiian Islands, it remains a vast remote area. Only a fraction of a percent of the Ka'ū District has been developed with residential properties, and the remainder is largely used for agricultural purposes or is undeveloped. The District of Ka'ū is situated at the southern tip of the island and extends across the southern and southeastern flanks of Mauna Loa. The Ka'ū District covers about 922 square miles (approximately 590,000 acres), with over 80 miles of virtually undeveloped coastline. Nearly two-thirds of its total land area is in the Conservation district. The Ka'ū district consists of several communities, including the Pāhala community, which has a population of approximately 1,341 persons. The distance to the communities of Hilo and Kailua-Kona means that the Ka'ū District is relatively isolated from the major infrastructure systems found in these communities, including wastewater treatment and disposal facilities.

Founded in 1826, C. Brewer and Company, Ltd. (C. Brewer) was both the oldest company in Hawai'i and a major developer of the sugar industry in Pāhala. The Ka'ū Sugar Company operations were closed in 1996, meaning that the sugar industry was no longer the major agricultural activity of the Ka'ū region. However, agriculture is still the major source of economic activity in the region. Today, macadamia nuts and coffee are the major crops grown within the Ka'ū District; however, growing competition from foreign producers is beginning to affect the macadamia nut industry.

#### 2.1.2 Project Funding

Planning level cost comparisons for the Pāhala Large Capacity Cesspool (LCC) Replacement Project are summarized in the November 2019 *Pahala Wastewater Treatment Plant Preliminary Engineering Report (PER)*, which is included as Appendix B. The capital cost of an aerated lagoon/constructed wetland/land application treatment and disposal facility is estimated at \$16 million (plus \$2 million for concrete lagoon lining if required) and has an estimated annual operations and maintenance cost of \$227,000. The capital cost of closure of two community LCCs and a new collection system is estimated at \$14 million. These numbers represent conceptual planning level cost estimates and do not include administrative, planning, design, land acquisition, or past project costs. Of the treatment alternatives that were deemed feasible and compared in the PER, the proposed wastewater treatment and disposal facility design has the lowest estimated capital cost and estimated annual operations and maintenance cost.

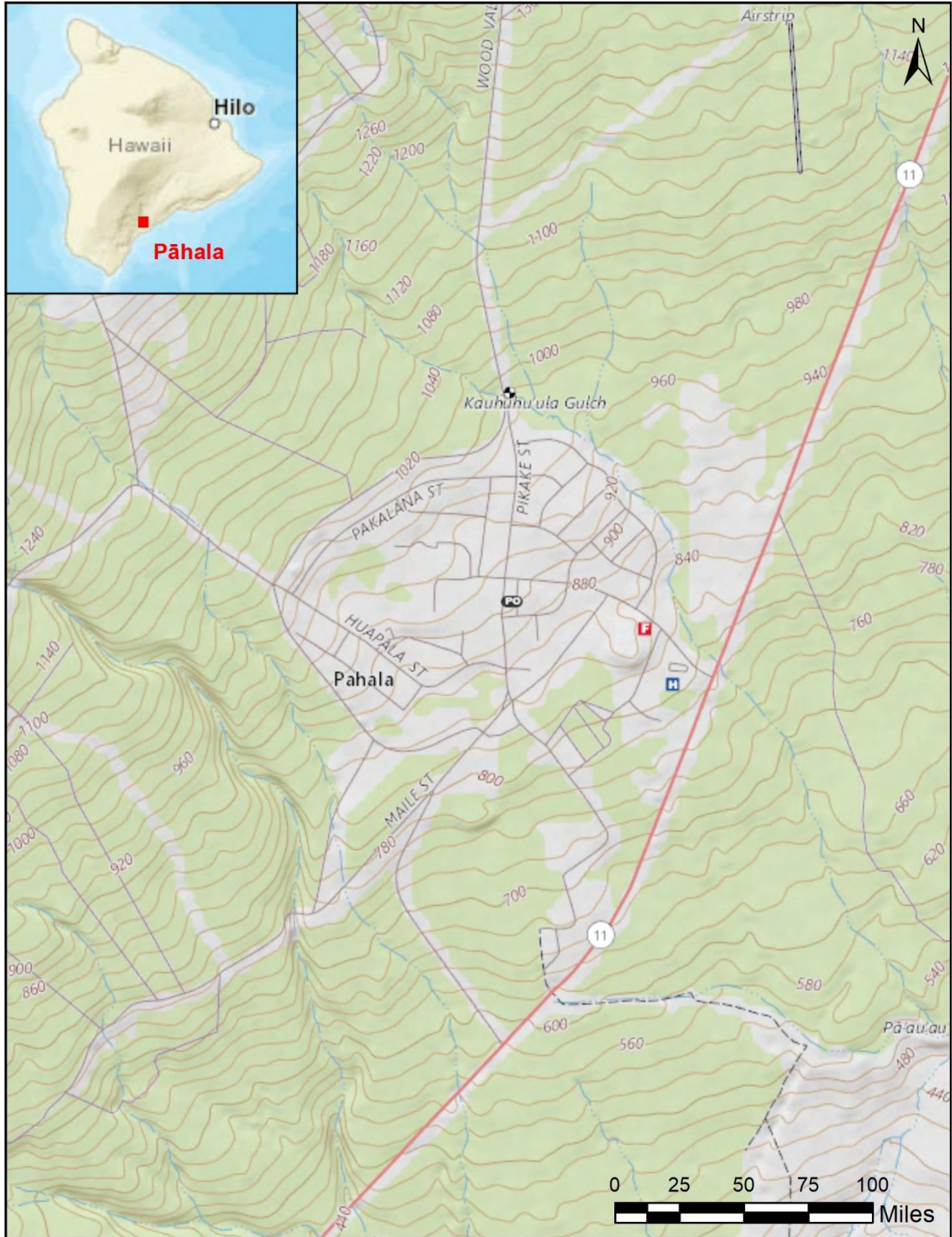


Figure 2.1. Location of Pāhala Community on the Island of Hawai'i



(a) EPA Special Appropriations Act Project Grant

In 2006, a U.S. Environmental Protection Agency (EPA) Special Appropriations Act Project (SAAP) grant was awarded to the County of Hawai'i for the Ka'ū LCC Replacement Project (XP-96942401). The grant's federal funding amount is \$1.842 million which currently expires in October 2020. The purpose of the award is for the design and construction of wastewater system improvements to replace LCCs in the Ka'ū District. The initial SAAP grant was awarded for the design and construction of wastewater system improvements to replace other LCCs in the Ka'ū District in addition to those located in Pāhala. As stated in Section 2.1.4 (History of Wastewater Management in Pāhala), LCCs in the community of Nā'ālehu were originally included in earlier funding considerations.

However, since the projects were separated as described in Section 2.9 (Relationship to 2007 Final Environmental Assessment), the grant workplan for the EPA SAAP grant has been revised to only include funding for the Pāhala LCC Replacement Project. This decision was made based on two points: 1) the federal grant funds would only cover a portion of one of the projects and 2) it was expected that the Pāhala LCC Replacement Project could be completed faster than the Nā'ālehu Project, and there was therefore a lesser likelihood that funds associated with the grant would be de-obligated before they could be spent. Consequently, the grant award and current work plan provide funding to replace only the two LCCs serving the Pāhala community.

(b) State Revolving Fund

This project may also be funded by the State of Hawai'i Department of Health (DOH) Clean Water State Revolving Fund (CWSRF) Program. Under the CWSRF program, the project consists of two parts: Pāhala Large Capacity Cesspool Conversion and Pāhala Wastewater Collection System. The CWSRF Program was created by the federal Water Quality Act of 1987 and authorizes low interest loans for the construction of publicly owned wastewater treatment works. In 1988, the Hawai'i State Legislature passed Act 365, now Chapter 342D of the Hawai'i Revised Statutes (HRS), to establish the State Water Pollution Control Revolving Fund to receive the federal capitalization grant. HRS 342D, Part V (Water Pollution Control Financing), and, more specifically, HRS § 342D-81 set forth that the State's policy is to promote water pollution prevention and control, including the use of recycled water, by financing eligible projects consistent with applicable federal and state laws. The State Revolving Fund receives annual funding from EPA, which the State of Hawai'i DOH is then responsible for allocating among eligible projects.

**2.1.3 Large Capacity Cesspools**

In 1999, EPA promulgated regulations under the Safe Drinking Water Act's (SDWA) Underground Injection Control (UIC) Program which prohibited the construction of new LCCs as of April 2000 and required the closure of all existing LCCs by April 5, 2005 (40 CFR § 144.88). Under federal regulations, an LCC is a cesspool which serves multiple dwellings, or for non-residential facilities has the capacity to serve 20 or more persons per day. Cesspools can release disease-causing pathogens and other pollutants (e.g., nitrates) into groundwater aquifers, streams, and eventually the ocean, thus leading to public health and environmental concerns.

In 2017, a state law, Act 125, was enacted requiring all cesspools not exempted by the DOH to be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. This legislation will affect all parcels in Pāhala currently using cesspools. Unlike LCCs, which serve multiple dwellings and/or have the capacity to serve 20 persons or more per day, small capacity cesspools typically serve individual homes and are not regulated under federal law.

In June 2017, EPA and the County entered into an Administrative Order on Consent (AOC) to close the LCCs serving the Pāhala community by June 2021. In September 2019, EPA accepted the County's request to extend the Pāhala LCC closure date from June 2021 to April 2023.

#### **2.1.4 History of Wastewater Management in Pāhala**

Part of the Pāhala community is currently served by a sewer system comprised of substandard gravity lines that convey sewage from approximately 109 parcels to two LCCs, which were previously owned and operated by C. Brewer. The existing sewer system was constructed in the backyards of the residential parcels and some within the streets. In 1996, C. Brewer shut down its sugar growing and processing facility in Pāhala. In 2003, C. Brewer requested assistance from the County to close their LCCs as required by EPA.

Around 2006, C. Brewer requested that the County construct and maintain a new and improved community sewer system. A County Council Resolution approved the C. Brewer request. In anticipation of C. Brewer's dissolution, C. Brewer proposed, and the County agreed, to enter into a formal agreement to not only construct and maintain a new and improved community sewer system but to assume ownership of the existing system including the LCC's by April 30, 2010. As part of this agreement, for the majority of Pāhala and Nā'ālehu properties connected to the LCCs, C. Brewer committed to complete the line (called a lateral) between the residences and the property line at the edge of the public right-of-way adjacent to the new collection system.<sup>1</sup> It was agreed, if the County did not complete its portion of the work by April 30, 2010, the County would assume pending and unfinished obligations to connect the new laterals installed by C. Brewer to the residences and new collection system when complete. Thus, because that date has passed and the County has not completed installation of the new collection system, this project includes connecting these C. Brewer laterals, which may now need to be replaced, or installing private laterals for currently connected properties if authorized by the property owner and approved by County Council.

On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā'ālehu and Pāhala LCC Replacement project. As part of the meeting, an informational handout prepared by the County's Wastewater Division provided a brief history of the project documenting that, in 2004, Mayor Kim's office used a ballot system distributed via mail to get input from property owners regarding different wastewater treatment/disposal alternatives for those residents who would no longer be served by the C. Brewer system after LCC closure. 87 percent of the returned ballots were in favor of a new sewer collection system and a treatment and disposal system to be owned and maintained by the County. The handout indicated Mayor Kim's office advised the property owners the County would move forward with new sewer systems for Nā'ālehu and Pāhala on November 5, 2004. Additionally, the handout stated public meetings were held in both Nā'ālehu and Pāhala in November 2006, to discuss the wastewater system alternatives. The handout included that adequate land for the treatment and disposal system had not been identified in Pāhala.

## **2.2 Purpose and Need for Action**

EPA's purpose for the Proposed Action considered in this Environmental Assessment (EA) is to provide the infrastructure necessary to enable the County to comply with the SDWA and fulfill the compliance provisions of the AOC between EPA and the County with respect to closure of the Pāhala LCCs by April 2023.

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<sup>1</sup> C. Brewer did not commit to construct laterals on then-connected private properties whose owners did not consent or on approximately 30 house lots and commercial businesses subsequently sold or having Deed restrictions making them liable for all costs associated with a new sewer system for those lots.

The County's purpose for the Proposed Action considered in this EA, as stated in the June 22, 2017 EPA Region 9 AOC, is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources. Though closure of individual wastewater systems by the County is not part of the Proposed Action, legislation described in Section 2.1.3 affects the future of all parcels in Pāhala utilizing cesspools for sewage disposal.

The need for action is driven by the public health and environmental concerns associated with LCCs, as described in Section 2.1.3.

### **2.3 Proposed Action – Site 7 Alternative (Preferred Alternative)**

This section describes the Preferred Alternative under the Proposed Action.

Under the Preferred Alternative, the County of Hawai'i would perform the following actions:

- 1) Acquire, or otherwise obtain the right to develop and use, a portion of the 42.5-acre Site 7 that is currently owned by B. P. Bishop Estate Trustees (commonly known as Kamehameha Schools), then construct a new secondary wastewater treatment and disposal facility within a portion of the parcel (see Figure 2.3);
- 2) Construct a wastewater collection system, primarily within the public right-of-way (ROW) and three segments within easements in the Pāhala community, to collect and convey sanitary waste from the currently connected and accessible (in accordance with Hawai'i County Code) properties to the new treatment and disposal facility;
- 3) Close and abandon two LCCs, according to DOH closure procedures; and
- 4) Abandon the existing wastewater collection system in place.

These actions are described in further detail below and are depicted in Figure 2.2.

#### **2.3.1 Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility**

Under the Preferred Alternative, the County would acquire, or obtain the right to develop and use, a 14.9-acre portion of Tax Map Key (TMK) 9-6-002:018 located about 0.5 miles (2,600 feet) south of the developed area of the community and identified as Site 7 for construction of a new secondary wastewater treatment and disposal facility. This 42.5-acre parcel is owned by Kamehameha Schools and used as a macadamia nut orchard. It is located adjacent to LCC #1. An at-grade irrigation system runs in a north-south direction which allows vehicle access between the rows. Slopes throughout Site 7 are between approximately 3 and 10 percent.

The County would work with the current landowner to subdivide the 42.5-acre parcel into two parcels: 1) a 14.9-acre parcel that would be owned by the County; and 2) a 27.6-acre parcel that would include a 25-foot-wide by 1,500-foot-long utility easement and would continue to be owned by the current owner. See Figure 2.3 for a preliminary site plan showing the proposed location of the treatment and disposal facility within Site 7. This location is in the northeast corner of the Maile Street and Māmalahoa Highway intersection outside of the State of Hawai'i Department of Transportation (DOT) right-of-way, east (makai) of an existing access road from Maile Street. Access to both parcels would be provided from driveways on Maile Street sited mauka of the Maile Street and Māmalahoa Highway intersection.

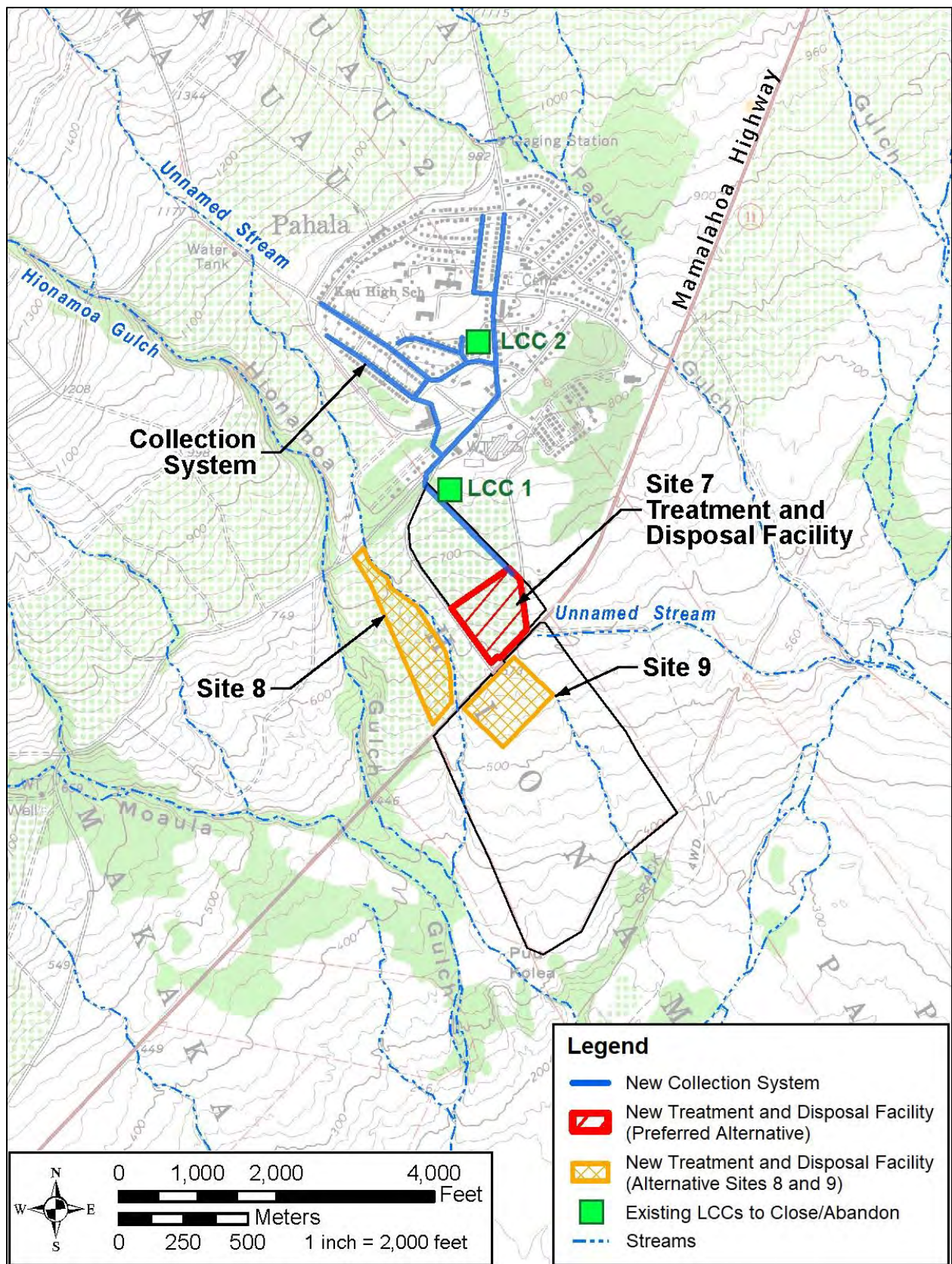


Figure 2.2. Elements of the Proposed Action

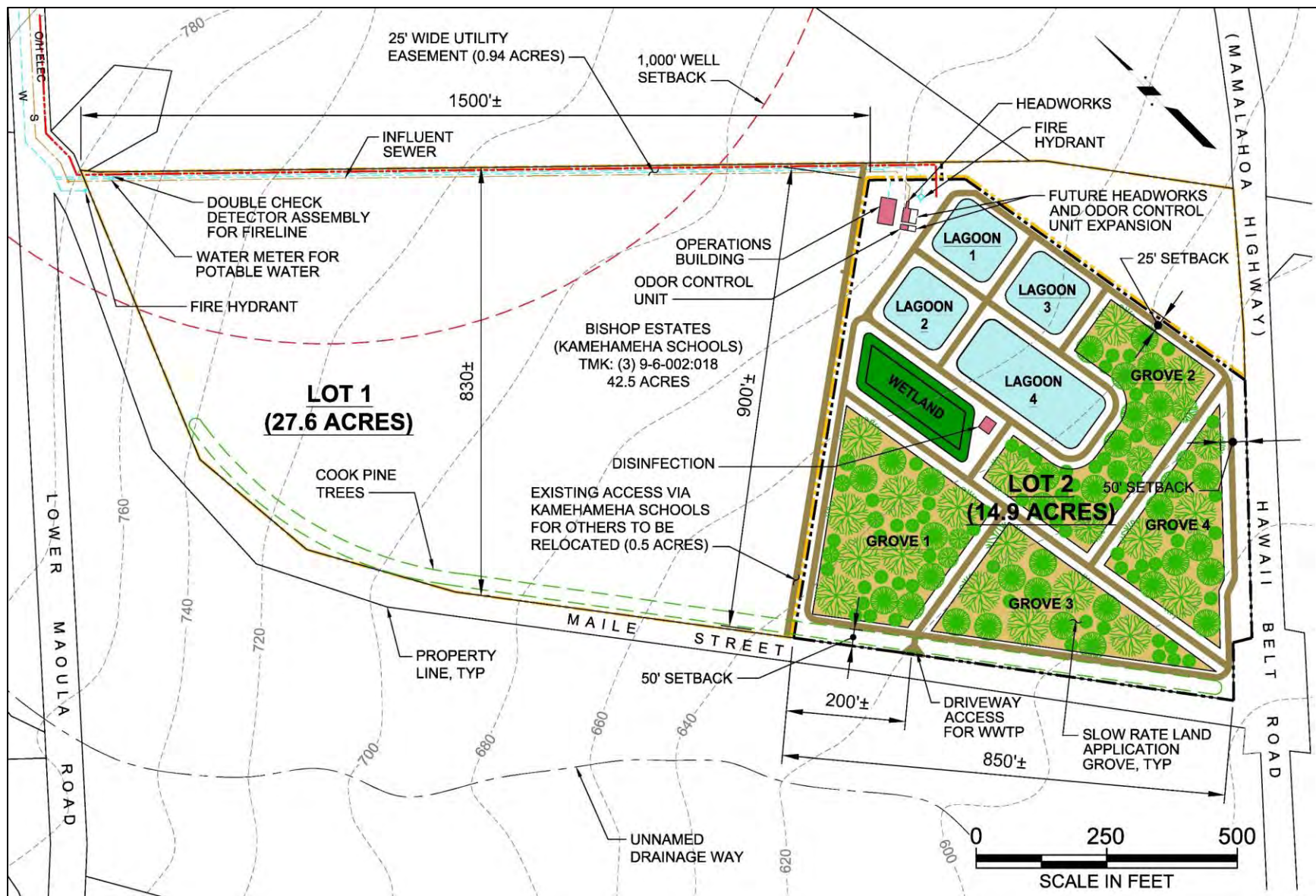


Figure 2.3. Preliminary Site Plan for New Wastewater Treatment and Disposal Facility at Site 7 (Preferred Alternative)

The County developed wastewater flow projections for the treatment and disposal facility using the City and County of Honolulu current wastewater standards, most recently updated during 2017. Based on these standards, the treatment and disposal facility would be designed to provide an average dry weather flow capacity of 190,000 gallons per day, which would be sufficient capacity to allow closure of the two LCCs.

The wastewater treatment and disposal facility would consist of the following primary components:

- Headworks preliminary treatment system. The headworks would protect the downstream system operations from large objects, debris, and rags that may be present in the incoming flows. It would include a below-grade concrete tank with channels to control flows; a fiberglass or aluminum cover plate to facilitate foul air collection; an above-grade screening system; a granular activated carbon (GAC) scrubber for odor control; and influent flow measurement and sampling equipment. A free-standing roof structure over the headworks would protect operators and equipment from rain and sun conditions.
- Aerated lagoon treatment system. A series of three 0.4-acre partial-mix aerated lagoons would provide biological wastewater treatment. Partial-mix aerated lagoons allow the solids to settle while providing enough aeration and mixing to meet the oxygen demands of the naturally occurring micro-organisms in the system. The lagoons would be equipped with high-speed floating aerators and lined with either high-density polyethylene (HDPE) or concrete to prevent wastewater seepage into the subsurface.
- Subsurface flow constructed wetland. The approximately 0.6-acre wetland would provide additional treatment of the effluent from the aerated lagoons via a process called denitrification, which would decrease the land area required for the slow-rate land application (see below). The subsurface flow wetland would consist of a shallow HDPE-lined basin filled with gravel media and planted with emergent wetland vegetation. Effluent from the lagoons would flow through the gravel media layer, with the effluent level being maintained below the gravel surface at all times. Treatment would occur through physical, chemical, and biological mechanisms.
- Covered lagoon and disinfection. The 0.8-acre lined and covered lagoon (Lagoon 4) would allow for effluent storage and algae removal, followed by disinfection to kill pathogens or render them incapable of reproduction or harm to humans. The lagoon would feature a floating cover of HDPE shade balls to prevent algae growth while allowing rainwater to pass through. Disinfection would occur through the use of an ultra-violet system.
- Slow-rate land application system. Disposal of the treated and disinfected effluent would be accomplished through land treatment in four groves of native, water-tolerant native trees occupying a total area of approximately 8.0 acres. Application of the effluent would be rotated to a different grove each day, resulting in a wet/dry cycle of 1-day wetting and 3-days drying. A lined irrigation equalization basin would be provided to facilitate grove dosing.

Figure 2.4 shows a preliminary process schematic for the proposed facility. Figure 2.5 illustrates an example of a lagoon using a floating cover of shade balls.

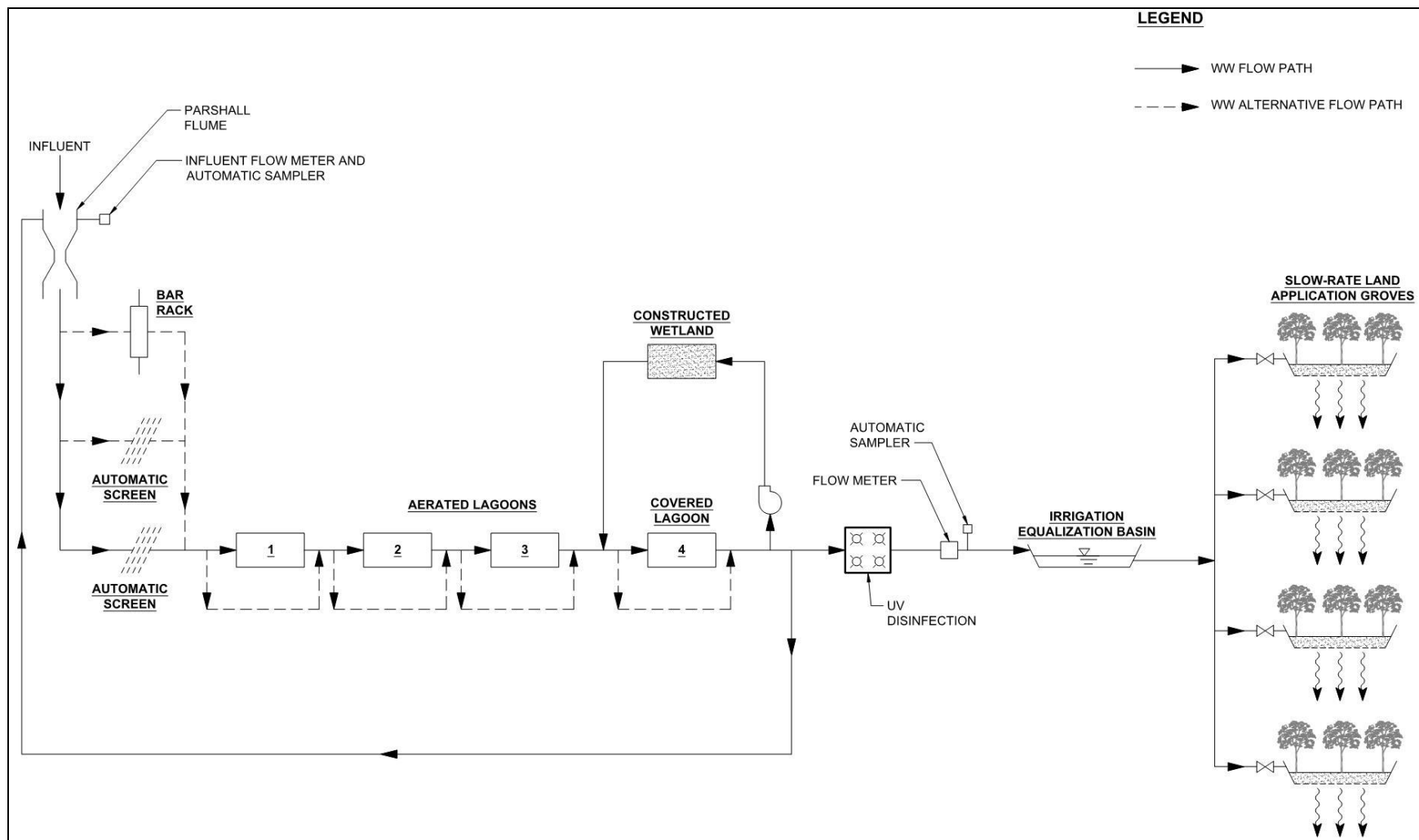


Figure 2.4. Preliminary Process Schematic for New Wastewater Treatment and Disposal Facility at Site 7 (Preferred Alternative)



**Figure 2.5. Example of Shade Ball Floating Cover in a Lagoon**

EPA defines land treatment as “the application of appropriately pre-treated municipal and industrial wastewater to the land at a controlled rate in a designed and engineered setting. The purpose of the activity is to obtain beneficial use of these materials, to improve environmental quality, and to achieve treatment goals in a cost-effective and environmentally sound manner.” Land treatment systems rely on soil and vegetation to achieve treatment objectives, rather than energy-intensive mechanical equipment. As such, they are considered to be a form of “natural” treatment. The slow-rate land application concept is to intermittently apply wastewater to vegetation growing in permeable soils. As the applied effluent percolates through the soil matrix or is taken up by the crop, it is treated by physical filtration and biological mechanisms. After an application period or wetting period, the surface is allowed to dry, and oxygen can enter the soil matrix, which aids aerobic biological treatment. The frequent wetting and drying of the soils also maintains the infiltration rate through the soil surface and minimizes clogging. This treatment process is effective for five-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), trace organics, phosphorus, metals and pathogen removal. Furthermore, nitrogen removal can be significant if it is necessary to manage the system for that objective.

The facility would be appropriately designed to have capacity to accommodate upset conditions, including pump and other equipment failures. In addition, the wastewater treatment and disposal facility would be designed not to preclude expansion to treat future average dry weather flows up to 360,000 gpd to meet the future needs of the community. As a matter of good engineering practice, and to the extent practical, the wastewater treatment and disposal facility and collection system would be designed to be expandable should the County or community decide in the future



that expansion is necessary in accordance with the requirements established in the Ka'ū Community Development Plan Policy 120. See Appendix B.

It should be noted that wastewater flows from a community are highly variable, and peak flow rates from small community wastewater collection systems are typically three to five times higher than the average flow rates. The City and County of Honolulu standards take this variability into account, and application of the standards results in conservatively designed facilities that are protective of human health and the environment in anticipated operational conditions.

The wastewater treatment and disposal facility would be designed and sized so the exposed (not enclosed) treatment processes have sufficient free-board depth to accommodate the 24-hour, 100-year storm event at the site. The wastewater treatment processes would be designed to accommodate the peak flows caused by the design storm event, including precipitation that falls on the aerated and covered lagoon treatment system. The aerated lagoons would be lined with HDPE liners or concrete to prevent water seepage through the bottom and sides of the lagoons. The aerated lagoons would be designed with operational freeboard that would be available to contain and to equalize lagoon flows during wet weather events. In addition, the slow-rate land application groves would be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event.

The groves would be designed in accordance with EPA's "*Process Design Manual, Land Treatment of Municipal Wastewater Effluents.*" Effluent would be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

Stormwater runoff generated mauka of the treatment and disposal facility project site would be directed around the perimeter of the site via diversion swales that would convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There would be no changes to this culvert and the proposed treatment and disposal facility would not be located within the area of the culvert.

The treatment and disposal facility would be designed with an on-site drainage system to collect runoff caused by impervious portions of the site. The system would collect the runoff via grated inlets or swales and the flows conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins, to detain flows and volumes to their pre-development condition. In addition, landscape buffers with soil berms would be constructed around most of the perimeter of the site to function as a secondary containment in the event of a large storm event. The design is to ensure there is no adverse impact on adjacent or downstream properties due to post-development flows.

A geotechnical engineering assessment of berm stability would be conducted during the design process for any berms constructed to act as containment in the event of a large storm event.

The wastewater treatment and disposal facility design would meet the requirements of Hawai'i County Code (HCC) § 27-20(e) (Standards for subdivisions and other developments), which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain runoff caused by the proposed development, within the site boundaries, up to the expected one-hour, ten year storm event as shown in the department of public works '*Storm Drainage Standards*' unless those standards specify a greater interval." Also, to meet the requirements of HCC § 27-20(f), the project site "shall not alter the general drainage pattern above or below the development." Thus, no increase in flow amount would be directed to either of the culverts at the highway as a result of the site development.

Any “type” of wastewater treatment process (such as aerated lagoons, activated sludge “mechanical” treatment plants, etc.) must incorporate both peak flows from the collection system and precipitation that falls on the exposed process components into the design. The proposed aerated lagoon system is a “flow through” process, not a storage reservoir. Wastewater from the community (including peak wet weather flows) would move through the lagoon system to the disposal system and would not be stored in the lagoons. The proposed aerated lagoon system would be lined and designed to have adequate freeboard to contain the required storm event and not overflow offsite. Further:

- Stormwater flows generated outside of the treatment and disposal facility would be directed around the site;
- An onsite stormwater collection and management system would contain runoff generated at the facility; and
- The proposed land application groves would be designed to completely contain both peak effluent flows and precipitation from a design storm event.

Because the above measures would be incorporated no matter what “type” of treatment process is chosen, flooding was not a criterion specifically evaluated as part of the treatment process selection.

The facility would also include an operations building (approximately 1,620 square feet (SF)), which would include an electrical room, restroom, and maintenance/storage room. The Draft EA described a chlorination system for this disinfection process. The Proposed Action has since been revised to instead include an ultraviolet light (UV) disinfection system to reduce the use of chemicals at the facility. Disinfection would occur through a UV system which destroys microorganisms by affecting their deoxyribonucleic acid and ribonucleic acid and impeding their ability to reproduce. A UV disinfection system is comprised of lamps, a reactor, and control panel. Wastewater flows parallel to the lamps in the reactor, while the control box provides a starting voltage and maintains the continuous electrical current needed. The UV reactor would be covered to contain the UV light within the facility, which would also prevent spill-over of the light to the surrounding area. Currently, most such systems are equipped with an automated lamp cleaning system to maintain lamp efficiency levels.

The Draft EA stated a pad-mounted diesel generator would be used as the emergency power supply in the event of power loss from the commercial system. The Proposed Action has since been revised to instead place the emergency generator within the operations building, which is now feasible due to the descoping of the chlorine disinfection system from the operations building in favor of ultra-violet disinfection. This would better protect the generator from corrosion and also provide a more secure location. The generator would be connected to an exterior, aboveground double-walled, concrete-encased fuel tank with capacity to support three consecutive days of operation. The tank would have a capacity of about 250 gallons. An electrical service panel would be equipped with a manual transfer switch and generator receptacle mounted to the exterior wall of the building. This would provide a connection for a portable, trailer-mounted generator, in the event of emergency generator maintenance or failure during an extended power outage.

Emergency backup power would be required whether commercial power or alternative energy systems are utilized. It is feasible to partially augment commercial power utilizing photovoltaic solar panel arrays on the headworks and operations building rooftops. Potential use of alternative energy systems would be further analyzed during the detailed design phase after loads and demand patterns have been determined. Also, the proposed electrical systems would be

designed to accept or be adaptable to additional alternative energy input in the future if prioritized and funded by County Council.

The design of the treatment and disposal facility would not include utilizing alternative energy systems such as photovoltaic solar or wind as a total replacement for connecting to the HELCO grid due to:

- The need for consistent power supply;
- Up-front capital cost;
- The need for additional land to accommodate alternative energy systems;
- The objective to minimize the amount of land area removed from agricultural production; and
- EPA-enforced project deadlines.

Methane gas is generated at wastewater treatment plants that use a treatment process called anaerobic digestion. The proposed wastewater treatment facility would be too small for anaerobic digestion to be economical. As stated previously, the dry weather design flow to the Pāhala LCC Replacement Project for the Proposed Action is 190,000 gallons per day. Anaerobic digestion is only economically attractive for wastewater treatment and disposal facilities that treat at least 5 to 10 million gallons per day. In addition, the anaerobic digestion process requires primary clarifiers as part of the liquid treatment process, but primary clarifiers tend to be odorous in tropical climates, due to the relatively high wastewater temperatures. The proposed wastewater treatment and disposal facility would instead rely on natural treatment systems that require relatively low energy input. Additional detail regarding the preliminary analysis of alternative energy options can be found in the PER (Appendix B).

The entire wastewater treatment and disposal facility would be enclosed with a 6-foot-high chain-link fence, which would not be topped with barbed wire stringers, and posted to prevent public access. Gate(s) to the facility would be locked, except when County or other County-authorized personnel are present. The site fencing would not extend into the Maile Street or Māmalahoa Highway rights-of-way.

A 25-foot-wide by approximately 1,500-foot-long easement located along the eastern edge of the Kamehameha Schools parcel would be used to provide access to utilities from Maile Street to the treatment and disposal facility site. The easement would contain the incoming sewer line from the collection system, potable water line, and above-ground electric service from the Hawai'i Electric and Light Company (HELCO) system. The easement would not be improved as an access road to the treatment and disposal facility. Potable water would be provided by extending the existing water main in Maile Street operated by the County of Hawai'i Department of Water Supply (DWS), located approximately 2,000 feet northeast of the parcel, and by installing a service line in the easement to connect the new facility to that extended water main. The above-ground electric service would likely consist of 480-volt, three-phase electrical power via a pole-mounted transformer to a service panel with a meter. Provided utilities would also include a land-line and/or cellular telephone telemetry system would be used to connect the wastewater treatment and disposal facility to Department of Environmental Management (DEM) operations staff based in Hilo or Kona and would facilitate automatic control of equipment and communication of operational data, malfunctions or intrusion. This system would have an auto-dialer to inform operators of alarm conditions. Operational procedures would be in place to address mechanical and electrical outages and other issues. Permanent, exterior site lighting would be limited to one shielded light mounted under the roof overhang of the operations building, and one shielded light

near the headworks, and one shielded light at the UV disinfection system. The exterior lighting would be manually switched and used only for emergency purposes; the facility would normally be unlit at night.

The treatment and disposal facility would be designed according to National Fire Prevention Association (NFPA) 820 "Standard for Fire Protection in Wastewater Treatment and Collection Facilities." In accordance with Hawai'i Fire Department requirements, Fire Department access and water supply to the site would be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by Hawai'i County.

It is anticipated that the wastewater treatment and disposal facility would require only weekly visits by an operator based in Hilo or Kona to check and occasionally maintain it.

A geophysical survey of the treatment and disposal facility site would be performed during detailed design with the specific intent to locate potential subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new facility. The presence of potential subsurface voids identified by the geophysical survey would be confirmed by geotechnical borings. The intent of the subsurface investigations is to minimize the impacts of lava tubes on the project, including avoiding excessive damage to lava tubes and burials from construction of the treatment and disposal facility at Site 7.

Hazards related to hurricanes, such as wind, rain, and flood loads, would be taken into account during detailed design. Applicable regulations and standards, including IBC 2006, would be adhered to. The County would develop a facility management plan in accordance with applicable rules and regulations.

The aerated lagoon plant design would not result in the migration of aerosols outside of the site boundaries. In addition, disinfection processes selectively kill pathogens or render them incapable of reproduction or harm to humans. As outlined in Appendix B Section 3.2, continuous disinfection of the treated effluent would be provided to protect human health and the environment. The land application groves would incorporate a distribution system at the ground surface which would not produce aerosols (Appendix B, Section 4.5.1).

To mitigate potential nuisance odors, the headworks would be equipped with an odor control system with a GAC scrubber to remove odor. A package GAC scrubber passes the odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon. The County currently operates GAC scrubbers at other facilities, and it has been proven to be an effective means of odor control both locally and nationwide. The treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring under normal operating conditions. The disposal groves would be irrigated with fully treated and aerobic secondary effluent from the treatment process; irrigation with secondary effluent is not associated with development of nuisance odor conditions.

Construction of the wastewater treatment and disposal facility would require extensive site modifications, including the following:

- Clearing and grubbing of approximately 14.9 acres of macadamia nut trees within Site 7 to accommodate the new facility, and clearing of up to approximately 0.9 acres of trees from within the utility easement – these trees would be disposed of at an approved site or re-used for some other purpose;
- Removal of Cook pines (*Araucaria columnaris*) along Maile Street, limited to those necessary to accommodate the main access to Site 7 via Maile Street and an existing private road to be relocated northwest (mauka) of its current location in order to provide

continued access between Maile Street and the macadamia nut processing plant immediately northeast of Site 7.

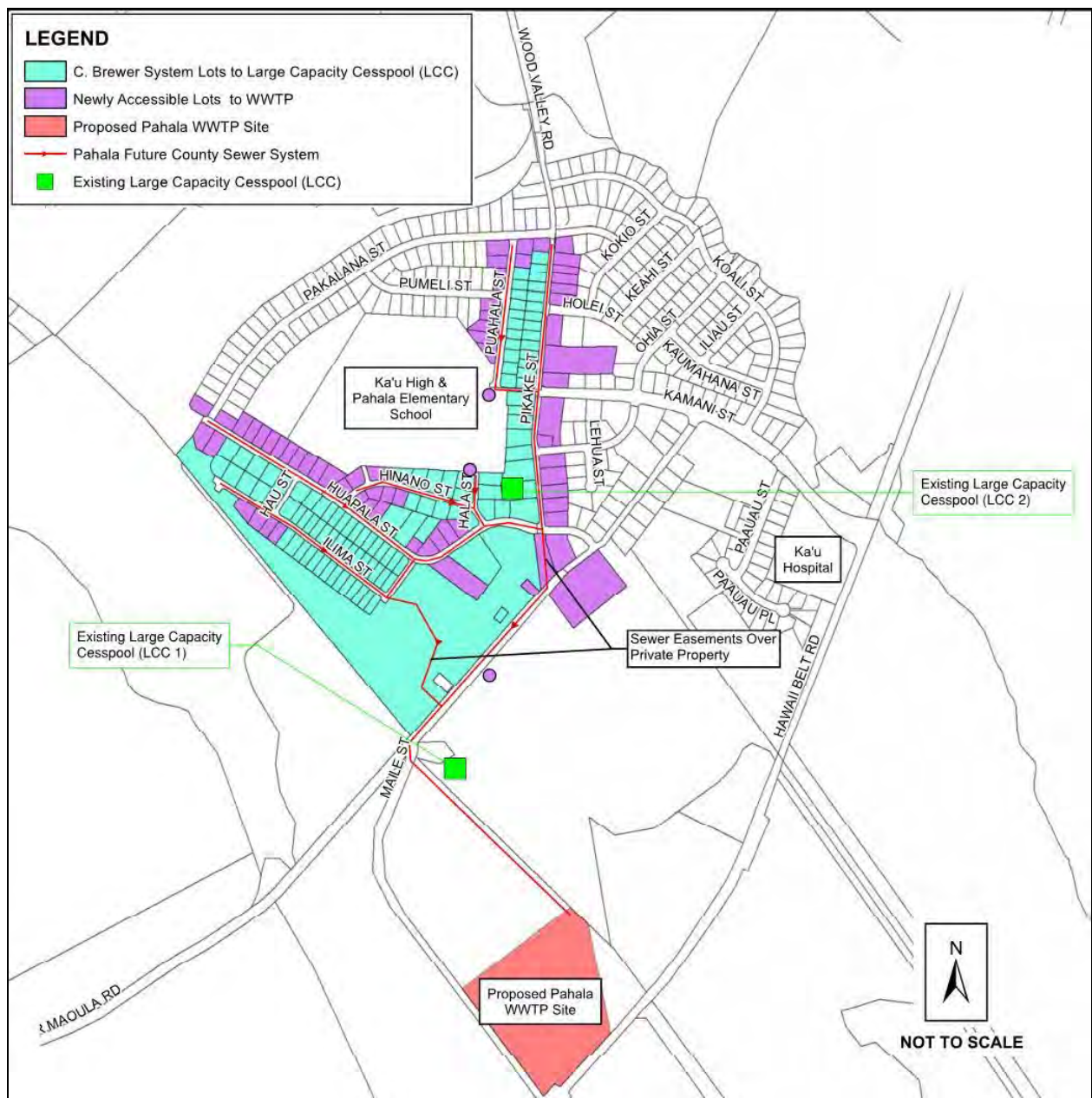
- Excavation to a depth of approximately 10 feet to provide the necessary capacity for the lagoons;
- Excavation to a depth of approximately 4 feet to provide the necessary depth for the media in the subsurface constructed wetland;
- Excavation to a depth of approximately 6 feet to provide sufficient depth for the planted groves and disposal of the effluent;
- Construction of a berm (with approximate 4-foot height) on all four sides of the groves to contain rainfall from a 100-year, 24-hour storm event, with perimeter roads on the top of the berms to provide operator access;
- Construction of internal service roads to provide access to the new facilities; and
- Relocation of the existing access road from Maile Street to the macadamia nut processing facility (see above).

Prior to construction of the treatment and disposal facility, the County would need to obtain the necessary discretionary and ministerial approvals from various federal, state, and county agencies.

### **2.3.2 Construct New Wastewater Collection System**

Under the Preferred Alternative, the County would construct a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that convey sewage to the two LCCs and connect it to the proposed wastewater treatment and disposal facility on Site 7. The new collection system would consist of a total of approximately 12,150 linear feet (LF) (2.3 miles) of corrosion-resistant polyvinyl chloride (PVC) piping almost entirely within the public ROW of eight public streets. This includes five streets in the western portion of the community (Maile, 'Ilima, Huapala, Hīnano, and Hala Streets) and three public streets in the eastern portion of the community (Puahala, Pīkake, and Kamani Streets). The new collection system would service a total of between 176-177 lots (111 existing or previously connected lots, plus 65-66 newly accessible lots as described later in this subsection), with the specific number being dependent on the results of the topographic survey and the design of the collection system, conveying sewage to the new wastewater treatment and disposal facility at Site 7. Figure 2.6 shows the collection system plan.

Similar to the treatment and disposal facility, the collection system would be designed not to preclude expansion to meet the requirements of Policy 120 of the Ka'ū Community Development Plan.



**Figure 2.6. Preliminary Collection System Plan with New Wastewater Treatment and Disposal Facility at Site 7 (Preferred Alternative)**

The County would construct the collection system in two phases to ensure that residential units can maintain sewer system access all times. Phase 1 would construct segments totaling approximately 2,510 LF to divert sewage flows from the existing LCC collection system to the new treatment and disposal facility and extend laterals to individual properties making them accessible to this portion of the new collection system. Specifically, Phase 1 would include the following:

- A new 1,730-LF, 16-inch diameter line within the Maile Street ROW to intercept flows from the existing system serving 'Ilima, Huapala, Hīnano, and Hala Streets and convey this sewage to the new wastewater treatment and disposal facility at Site 7. This new line would be sized to accommodate the flows from the entire community.

- A new 780-LF, 14-inch diameter line partially within the Pīkake Street ROW that would connect the existing collection system above LCC 2 to the new line on Maile Street described above. A 350-LF portion of this line would run through an easement on a privately owned parcel (TMK 9-6-005:044) to access Maile Street from Huapala Street.

Phase 2 would complete the new collection system by constructing segments totaling approximately 9,630 LF throughout Pāhala, installing pumps on selected properties, making individual properties accessible to the new collection system and re-connecting individual properties currently serviced by the existing collection system to the new collection system. These main lines would range from a 14-inch line on Pīkake Street to mostly 8-inch lines on the remaining streets and would run primarily within County ROWs for ease of access. However, an approximately 1,100-LF segment would follow the existing system alignment in an industrial area between 'Ilima and Maile Streets. The property (TMK 9-6-005:036) is owned by Edmund Olsen and leased to M L Macadamia Orchards. The County would obtain an easement for the work proposed within this area.

Construction of the new collection system would involve temporary impacts within the public ROWs of eight streets. The streets within the community are under the jurisdiction of the County, with the exception of a privately owned portion of Pīkake Street for which the County would obtain an easement. The streets have been improved with asphaltic concrete (AC) surfaces; most shoulder areas are somewhat improved or consist of grassy swales. Most of the streets have two travel lanes, are approximately 22 to 24 feet wide (plus shoulders), and do not have curbs or gutters. Residential lots along the streets have driveways with direct access to the travel lanes. Overhead utility poles are located outside the travel lanes. Typical sewer trenches would be about 3 feet wide and at least 6 feet deep to allow the placement of the lines to meet County standards. The existing pavement would be sawcut, the trench would be excavated (which could require removal of bedrock), sewer pipe installed, and then the trench would be backfilled and compacted. The cut portion of the AC pavement would then be patched with new AC material. Additional resurfacing may be required where trenches parallel streets. The collection system would be installed with the proper horizontal and vertical clearances from existing water system facilities and concrete jacketing at waterline crossings, where necessary, as recommended by the County of Hawai'i DWS Water System Standards.

As discussed in Section 3.3, geophysical and geotechnical surveys of the proposed collection system sites would be performed during detailed design with the specific intent to locate potential subsurface voids (such as lava tubes) which, if present beneath the sites, could require minor adjustments to the preliminary collection system plan where practicable.

All accessible properties would be required to connect to the new wastewater collection system in accordance with HCC § 21-5. However, in April 2007, the County entered into an agreement with C. Brewer to eliminate LCCs from the existing community sewer systems and connect properties discharging to them to new County collection, treatment, and disposal systems. Once the actual costs are determined, County Council action is still required to approve the expenditure of funds on private property for existing connections.

The new collection system would be subject to HCC 21 (Sewers). Specifically, HCC § 21-5 states the following:

*“(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.*

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- (b) *If, due to rock, wastewater collection system depth, or other construction problems, a building cannot be practically served, the owner shall install, operate and maintain a residential pumping station.*
- (c) *The director may grant a variance/exemption of the foregoing connection requirements to owners of single-family dwellings existing at the time of installation of the public wastewater system, if the following is found:*
- (1) *There are special or unusual circumstances applying to the subject real property which exist that render the ability to connect to a wastewater system an extreme physical or financial hardship; and*
  - (2) *There are no other reasonable alternatives; and*
  - (3) *The variance is consistent with the general purpose of the chapter and will not be materially detrimental to public health, safety, or welfare."*

Accordingly, additional newly accessible lots in Pāhala would be required to connect to the new wastewater collection system after it becomes operational. These other lots are near the existing service area and are presently connected to individual wastewater systems. Under the Preferred Alternative, the design of the new collection system would include stub-outs to accommodate the eventual connection of these newly accessible lots. However, the respective lot owners would be responsible for the design and completion of these connections and for the proper closure of their individual wastewater systems.

Additionally, as discussed in Section 4, the State of Hawai'i Department of Education (DOE) would connect the Ka'ū High School and Pāhala Elementary School and the recently completed Ka'ū Gymnasium and Shelter to the new collection system following completion of the Proposed Action. As stated in Section 4.7.2 of the County of Hawai'i, Department of Public Works, Final Environmental Assessment and Finding of No Significant Impact, Ka'ū Gym and Shelter, Pāhala, Ka'ū District. April 2012: "In accordance with Section 21-5, Hawai'i County Code (HCC), Ka'ū High and Pāhala Elementary School, including the Ka'ū District Gym and Shelter, will be required to connect to the County sewer system when access becomes available. The State Department of Education will be responsible for coordinating and constructing the connection to the sewer system via a branch main on Hala Street and properly closing their onsite system."

### **2.3.3 Close and Abandon Two Existing Large Capacity Cesspools**

Under the Preferred Alternative, following DOH approval to operate the new wastewater treatment and disposal facility and completion of Phase 1 of the new collection system, the County would close and abandon LCC 1 (located within TMK 9-6-002:016) and LCC 2 (located within TMK 9-6-016:041) as instructed by DOH Safe Drinking Water Branch UIC requirements. HAR § 11-23-19 sets forth the plugging and abandonment requirements, which state the following:

*"(a) any owner who wishes to abandon an injection well shall submit an application, in accordance with Section 11-23-12, containing the details of the proposed abandonment. The DOH may require an abandoned well to be plugged in a manner which will not allow detrimental movement of fluids between formations. If required, plugging shall be completed by grouting with the tremie method in accordance with the Honolulu Board of Water Supply's "Water System Standards", dated March, 1977; or by some other method found appropriate and acceptable to the DOH; (b) The DOH may order an injection well to be plugged and abandoned when it no longer performs its intended purpose, or when it is determined to be a threat to the ground water resource. The owner shall schedule the plugging so that DOH staff may be present to monitor the abandonment operation."*



The specific methods to be used for closure of the LCCs have not yet been determined but would be consistent with the requirements described above.

The two LCCs in Pāhala are readily accessible for closure activities. LCC 1 is located in a parcel that has been previously cleared. However, it is currently overgrown with tall grasses and it may be necessary to clear a path for construction vehicles and equipment to access. Clearing an access road (or other similar work) would not be necessary at LCC 2, which is located in the backyard of a residential lot with access via the house driveway. After the new treatment and disposal facility is operational, temporary easement(s) and a pipeline may be needed to bypass LCC 2, connect the existing collection system to the new collection system in Pikake Street, and close the LCC.

### **2.3.4 Close and Abandon Existing Wastewater Collection System**

Under the Preferred Alternative, following completion of Phase 2 of the new collection system, the County would close and abandon the existing C. Brewer wastewater collection system. This system includes some lines located in the back yards of residential lots and some within public streets; therefore, abandoning the lines in place would minimize impacts related to their excavation and removal. The cut ends of the abandoned laterals to the collection system would be plugged with concrete to prevent unauthorized use of the old system and to prevent maintaining an unused underground hydraulic conduit.

## **2.4 Proposed Action – Site 8 Alternative**

Under the Site 8 Alternative, the County would perform the same actions as described in Section 2.4 for the Preferred Alternative, with the following exceptions:

- The new secondary wastewater treatment and disposal facility would be constructed at Site 8 instead of Site 7; and
- The new wastewater collection system would require approximately 1,600 feet of additional pipe within the ROW of Lower Maoula Road to reach Site 8.

The County would acquire, or obtain the right to develop and use, the area identified as Site 8 for construction of the new secondary wastewater treatment and disposal facility (see Figure 2.7). The 45.2-acre parcel (TMK 9-6-002:021) containing Site 8 is southwest of and adjacent to the parcel containing Site 7, across Maile Street and above Māmalahoa Highway. As with Site 7, it is owned by Kamehameha Schools and used as a macadamia nut orchard. Site 8 is more steeply sloped than Site 7, with slopes between approximately 10 and 20 percent. An unnamed branch of Hi'onamoa Gulch crosses from northwest to southeast near the center of the parcel.

The secondary wastewater treatment and disposal facility at Site 8 would consist of the same treatment components, and would require the same support facilities and infrastructure, as the facility described in Section 2.3.1 for the Preferred Alternative. However, because of the steeper slopes in Site 8, use of this site would require larger slow-rate land application groves totaling approximately 12 acres. Also, depending on the selected configuration of the wastewater treatment facility and the land application groves, this alternative could require trenching and construction of piping across an unnamed branch of Hi'onamoa Gulch within the parcel.

As with the Preferred Alternative, the Site 8 Alternative would close and abandon LCC 1 and LCC 2 following completion of the wastewater treatment and disposal facility and Phase 1 of the new collection system and would close and abandon the existing C. Brewer wastewater collection system following completion of Phase 2 of the new collection system.



**Figure 2.7. Site 8 Alternative – Preliminary Site Plan for New Wastewater Treatment and Disposal Facility**

## 2.5 Proposed Action – Site 9 Alternative

Under the Site 9 Alternative, the County would perform the same actions as described in Section 2.3 for the Preferred Alternative, with the following exceptions:

- The new secondary wastewater treatment and disposal facility would be constructed at Site 9 instead of Site 7; and
- The new wastewater collection system would require approximately 3,200 feet of additional pipe within the ROW of Maile Street and across Māmalahoa Highway to reach Site 9.

The County would acquire, or obtain the right to develop and use, the area identified as Site 9 for construction of the new secondary wastewater treatment and disposal facility (see Figure 2.8). The 157-acre parcel (TMK 9-6-002:049) containing Site 9 is south of Sites 7 and 8, across Māmalahoa Highway. As with Sites 7 and 8, it is owned by Kamehameha Schools and used as a macadamia nut orchard. Slopes throughout Site 9 are between approximately 3 and 10 percent. An unnamed branch of Hi'onamoa Gulch crosses the parcel from north to south near the northwest corner of the site (through the upper westerly portion of the parcel).

The secondary wastewater treatment and disposal facility at Site 9 would consist of the same treatment components, and would require the same support facilities and infrastructure, as the facility described in Section 2.3.1 for the Preferred Alternative, and the slow-rate land application groves would total approximately 8 acres. However, an unnamed branch of Hi'onamoa Gulch or the outfall from the concrete box culvert crossing the highway at the intersection of Maile Street and Māmalahoa Highway near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, because the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW, which would require approval by the State DOT. Also, depending on the selected configuration of the wastewater treatment facility and the land application groves, this alternative could require trenching and construction of piping across an unnamed branch of Hi'onamoa Gulch within the site. Finally, this alternative would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

As outlined in the PER Section 8 (Appendix B), Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

As with the Preferred Alternative, the Site 9 Alternative would close and abandon LCC 1 and LCC 2 following completion of the wastewater treatment and disposal facility and Phase 1 of the new collection system and would close and abandon the existing C. Brewer wastewater collection system following completion of Phase 2 of the new collection system.



Figure 2.8. Site 9 Alternative – Preliminary Site Plan for New Wastewater Treatment and Disposal Facility

## 2.6 No-Action Alternative

Under the No-Action Alternative, the County would continue to use the two existing LCCs in Pāhala and existing substandard gravity sewer lines. No additional properties would be added to the community sewer system under this alternative.

This alternative would not provide the Pāhala community with an acceptable wastewater collection, treatment, and disposal system; would not fulfill the purpose and need for action described in Section 2.2; and would result in non-compliance with the AOC between EPA and the County.

## 2.7 Development of Site Alternatives and Selection of Preferred Alternative

For several years, the County has considered various alternative sites in the Pāhala area for construction of a new wastewater treatment and disposal facility. The County has primarily considered sites that could be obtained at “minimal or no” cost and currently vacant sites to avoid displacement and relocation.

The County identified candidate sites based on three primary criteria. First, the site would have to be appropriate for the preliminary design of the treatment and disposal facility. For example, the site would need to have sufficient area to accommodate the facility and have soil conditions that are suitable for effluent management purposes. Second, access to the site would allow the County to meet the various requirements of the AOC that stipulated closure of the LCCs by June 2021.<sup>2</sup> Third, the environmental impacts of construction of the treatment and disposal facility should be considered. For example, the site would need to be located where a treatment and disposal facility would not create nuisance impacts (e.g., odor or visual impacts) to the community.

Based on these three primary criteria, and considering additional suggestions from the Pāhala community obtained during Community Outreach meetings in December 2017, the County identified nine candidate sites for the proposed wastewater treatment and disposal facility. Figure 2.9 shows the locations of these nine sites, identifies the landowners for each, and depicts their proximity to the existing LCCs. The County evaluated the suitability of each candidate site according to the following process:

1. Twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) were established and defined for the analysis.
2. Six “fatal flaw” conditions were identified. Sites with a fatal flaw were eliminated from further consideration.
3. Relative weighting factors were established for each category and criteria. Environmental, social and cultural considerations, and location and site characteristics were weighted highest (35 percent each), the collection system and service area category was weighted at 20 percent, and the land use and availability category was weighted at 10 percent.
4. Sites were mapped using Geographic Information System. Data such as size, soil type, location of subsurface and surface water, topography, zoning and prevailing wind direction were determined.
5. Each site was evaluated and scored for the twenty-one criteria.

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<sup>2</sup> In September 2019, EPA accepted the County’s request to extend the Pāhala LCC closure date from June 2021 to April 2023.

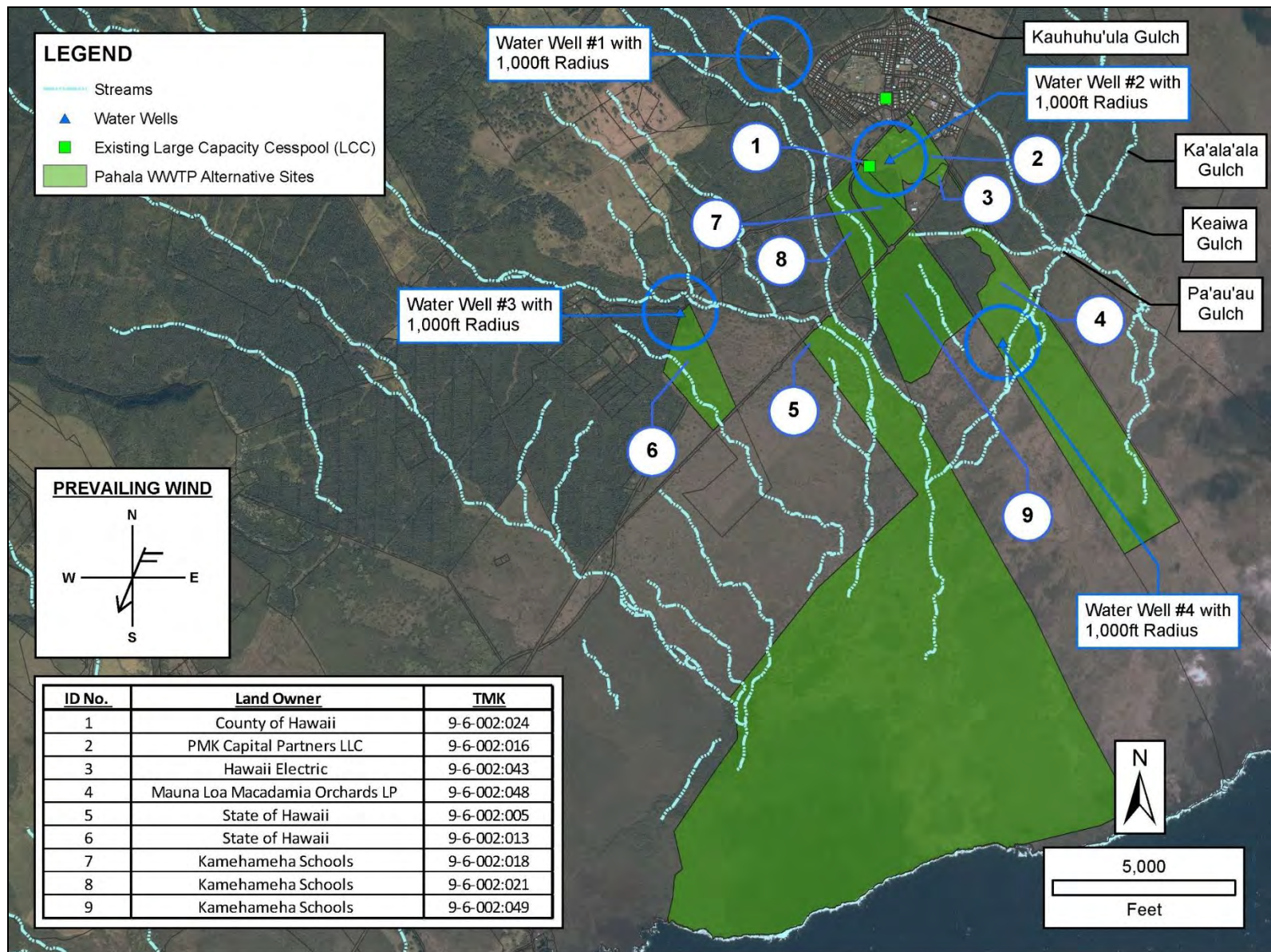


Figure 2.9. Locations of Nine Candidate Sites Considered for New Wastewater Treatment and Disposal Facility

6. A weighted ranking was determined for each site based on the weighting factors established in Step 3.
7. A preferred site was identified, based on the weighted high scores.

As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs. Site 8 has a stream bisecting the parcel lengthwise that complicates siting of the treatment and disposal facility. Site 9 also has some surface water within the parcel but is also more difficult to access given its location relative to existing roads. Site 9 would require construction of additional access roads to facilitate construction and operation of the treatment and disposal facility and would also require a longer transmission line given its distance from the existing LCCs.

Additional information on the specific scoring criteria and the results of the weighted analysis can be found in the PER (Appendix B).

Section 2.3 describes the Preferred Alternative under the Proposed Action, including the preferred site (Site 7) for construction of the treatment and disposal facility. Sections 2.4 and 2.5 describe the other two sites (Sites 8 and 9, respectively) identified as reasonable alternatives for construction of the treatment and disposal facility under the Proposed Action. Section 2.8.1 describes the six sites (Sites 1-6) that were eliminated from consideration as reasonable alternatives.

## **2.8 Alternatives Considered but Not Carried Forward**

### **2.8.1 Other Site Alternatives**

During evaluation of site alternatives, six “fatal flaw” conditions were identified, and sites with a “fatal flaw” were eliminated from further consideration. For more information on fatal flaw conditions, refer to the PER (Appendix B).

#### **(a) Alternative Site 1: LCC Parcel**

Site 1 (TMK 9-6-002:024) is owned by the County of Hawai'i. This parcel is only 0.41 acres, precluding it from being suitable for a wastewater treatment facility due to parcel size. As a result of this “fatal flaw,” Site 1 was removed from further consideration.

#### **(b) Alternative Site 2: Macadamia Nut Plant Site**

Site 2 (TMK 9-6-002:016) is located adjacent to the 0.41-acre County LCC parcel. This parcel occupies about 64.8 acres, is privately owned and contains an active macadamia nut processing facility that occupies only a portion of the entire parcel. The site is located near the Pāhala community meaning it would be close the collection system, limiting the environmental impacts related to construction of the influent and fire protection lines.

However, due to the soil type, Site 2 would require an area of approximately 200 acres to accommodate the slow-rate land application basins. The unoccupied area of Site 1 is located on the northern portion of the parcel. As a result, the proposed treatment and disposal site would be nearly adjacent to a residential area and the Pāhala Hongwanji Mission. Use of this site would potentially have adverse impacts to residents and the Pāhala Hongwanji Mission. For these reasons, use of Site 2 for the treatment and disposal facility is not considered a reasonable and feasible alternative.

(c) Alternative Site 3: HELCO Substation

Site 3 (TMK 9-6-002:043) is owned by HELCO and occupies 4.46 acres. It is currently used as a substation to supply electrical power to the Pāhala community. The size of the parcel and the requirement for approval from the State of Hawai'i Public Utilities Commission made use of Site 3 for the treatment and disposal facility not a reasonable and feasible alternative.

(d) Alternative Site 4: Mauna Loa Macadamia Nut Parcel

Site 4 (TMK 9-6-002:048) is located east of Māmalahoa Highway and occupies about 339 acres. The parcel is privately owned and contains an active macadamia orchard. An unnamed gulch runs east-west between the highway and orchard area that would need to be crossed by influent and fire protection lines. The state may require a Stream Channel Alteration Permit should the two lines alter the stream banks. Placing the lines below the stream might require separate pump stations for the lines to access the treatment and disposal facility. The only access to Site 4 is from Māmalahoa Highway. Approval would be needed to construct within the right-of-way. Due to the soil type, Site 4 would require an area of approximately 200 acres to accommodate the slow-rate land application basins. For these reasons, use of Site 4 for the treatment and disposal facility is not considered a reasonable and feasible alternative.

(e) Alternative Site 5: State of Hawai'i

Site 5 (TMK 9-6-002:005), a vacant parcel owned by the State of Hawai'i, is located about 3,300 feet south of Maile Street below Māmalahoa Highway and occupies about 2,160 acres. Hi'onamoia and Moa'ula gulches lie between Maile Street and Site 3 and influent and fire protection lines would need to cross the gulches to reach the site. A Stream Channel Alteration Permit would be required should the two lines alter the stream banks. Approval would also be required to construct within the state right-of-way. Due to the soil type at Site 5, approximately 200 acres would be required to accommodate the slow-rate land application basins. For these reasons, use of Site 5 for the treatment and disposal facility is not considered a reasonable and feasible alternative.

(f) Alternative Site 6: State of Hawai'i

Site 6 (TMK 9-6-002:013), a vacant parcel owned by the State of Hawai'i, is located about 1.25 miles south of Maile Street above Māmalahoa Highway and occupies about 75.8 acres. Influent and fire protection lines would need to cross two, and possibly three, gulches to reach the site. A Stream Channel Alteration Permit would be required if the lines alter the stream banks. Approval would also be required to construct utilities within the highway ROW. Because Site 6 lies above the highway, one or two pump stations might be required for the influent line. Due to the soil type at the site, approximately 200 acres of this soil type would be required to accommodate the slow-rate land application basins. For these reasons, use of Site 6 for the treatment and disposal facility is not considered a reasonable and feasible alternative.

### **2.8.2 Other Wastewater Treatment Alternatives**

As previously discussed, wastewater flows from a community are highly variable, and peak flow rates from small community wastewater collection systems are typically three to five times higher than the average flow rates. The City and County of Honolulu standards take this variability into account, and application of the standards results in conservatively designed facilities that are protective of human health and the environment in anticipated operational conditions. The selected wastewater treatment alternative must be capable of achieving these standards and receiving discretionary and ministerial approvals. The following other wastewater treatment alternatives were evaluated.



(a) Septic Tank Alternatives

Several septic tank alternatives were identified and considered. Additional details on each alternative can be found in the PER (Appendix B).

- **Community Septic Tank.** Based on current design criteria and current flow projections, an approximately 800,000-gallon community septic tank would be necessary to provide the extended detention times needed to optimize treatment performance, to avoid the need for frequent septage pumping, and to account for peak flow rates. A community septic tank of this size would require pumping on a 3-year interval. Septic tanks produce hydrogen sulfide, reduced sulfur compounds, and other odorous gases; a community septic tank would concentrate these emissions to a single point source, requiring treatment with a dual-stage scrubber to avoid nuisance odor conditions. More significantly, a community septic tank would not be capable of achieving the effluent quality standards (less than 30 mg/L of both BOD<sub>5</sub> and TSS) specified in HAR 11-62. Therefore, use of a community septic tank is not considered to be feasible.
- **Converting LCC to Seepage Pit.** Converting LCC 1 to a seepage pit regulated as an injection well (LCC 2 could not be converted as it is on private land) would lead to numerous potential compliance issues with HAR 11-23-07, which regulates injection wells. The condition and structure of LCC 1 is unknown, and HAR 11-62-25 requires all new and proposed effluent disposal systems to have a backup system. No such system could be feasibly constructed as new injection wells are not allowed. A DOH variance necessitating renewal applications every 5 years (which are not certain to be approved) would also be required. No additional flow or connections would be allowed, meaning the proposed new collection system could not conform to the project purpose, meet currently applicable Hawai'i County Code requirements, or be expandable to serve the rest of the community.
- **Leachfield Disposal.** To meet DOH's leachfield design criteria, a minimum of 30 acres of land would be required to meet loading rate and redundancy requirements. Achieving even distribution of effluent over a leachfield of this size would be challenging. Therefore, leachfield disposal is not considered to be feasible.
- **Conversion to Individual Wastewater Systems.** Many of the lots in Pāhala are too small to construct individual septic systems, and for those that could accommodate a septic tank, the soils may have percolation rates that are too slow to allow for seepage pits based on HAR 11-62-34 regulations. Residents with insufficient space for a seepage pit may need to import fill soil to create elevated mound systems or convert to household aerobic treatment units. Conversion to individual wastewater systems is therefore not considered feasible.
- **Package Plants.** Package plants are pre-manufactured treatment facilities that may be used to treat wastewater in small communities or on individual properties. Typical flows for this technology range between 10,000 and 250,000 gallons per day. Although they have the advantage of a small footprint and associated capital cost, these plants have limited storage and equalization capacity, require the addition of chemicals, and are operationally complex. In addition, they are energy intensive, and the solids produced must be properly handled and disposed. Package plants do not commonly achieve denitrification or phosphorus removal without additional unit processes. Often, package plants utilize proprietary equipment, adding to operational costs and equipment availability

issues when replacements are unavailable or the equipment becomes obsolete. Because of the need for daily operations and maintenance, on-site chemical storage and chemical addition, mechanical complexity, lack of operational flexibility under changing conditions, energy consumption and sludge handling concerns, package plants were removed from consideration for the Proposed Action. Additional issues include access for construction equipment, ownership of the units, and operation and maintenance of the units either by the County of Hawai'i on private property or by individual property owners in this remote location.

(b) Other Treatment Alternatives

Several other treatment alternatives were considered for the project. Additional details can be found in the PER (Appendix B).

- Option 1: Aerated Lagoons/Constructed Wetland/Land Application (Proposed Treatment Method). Option 1 consists of an aerated lagoon treatment system with a constructed wetland and disinfection, followed by land application for effluent management. This is the proposed treatment method for the Pāhala wastewater treatment and disposal facility.
- Option 2: R-1 Treatment/Land Application. Option 2 consists of a treatment system designed to produce recycled water that meets DOH R-1 recycled water criteria. The R-1 treatment system would be followed by land application.
- Option 3: R-1 Treatment/Seasonal Water Recycling. Option 3 consists of a treatment system similar to Option 2 to produce R-1 recycled water. The recycled water would then be used to irrigate nearby macadamia nut orchards. A water recycling analysis no irrigation is typically needed between October and March because precipitation exceeds evaporation during those months. During months when irrigation is unnecessary, recycled water could be land applied.
- Option 4: R-1 Treatment and Storage for 100 Percent Recycling. Option 4 adds a seasonal storage reservoir for recycled water. HAR 11-62 requires a disposal system for all recycled water systems to provide a means for disposal of water that does not meet R-1 standards or disposal of excess water should the seasonal storage reservoir capacity be exceeded during an exceptionally wet year. Storage in open reservoirs can also lead to algae growth and odor issues, requiring additional treatment to meet R-1 criteria before irrigation.
- Option 5: Maximum Practical Treatment. Option 5 consists of implementing advanced wastewater treatment processes that represent maximum practical treatment, eventually producing R-1 water. The same issues associated with utilizing or storing R-1 water described for Options 3 and 4 would apply to Option 5.

The treatment alternatives described above were removed from consideration due for several reasons, as described below. Additional details can be found in the PER (Appendix B).

- Labor Requirements. Options 2 through 5 require daily site visits from operators based in Hilo or Kona to conduct sampling required for R-1 compliance. These options also consist of mechanical treatment technology that requires more operator attention. Option 1 (preferred alternative) requires weekly visits by treatment plant operators based in Hilo or Kona, with periodic maintenance visits as needed.

- **Operational Complexity.** Options 2 through 5 require Grade IV certification through HAR 11-61 due to the complexity of treatment processes. Generally, the County has difficulty attracting and retaining Grade IV operators. Option 1 requires an operator certification level of Grade 1, the lowest level established by HAR 11-61.
- **Energy Consumption.** Options 2 through 5 require a substantial amount of electrical energy due to the use of mechanical processes. Option 1 requires significantly less energy due to the use of natural treatment systems.
- **Sludge Management.** Options 2 through 5 would require an anaerobic digester for sludge management, with solids trucked to a landfill on a weekly basis. Option 1 would require sludge removal from lagoons approximately once every 15 to 20 years. The resulting solids are well-digested and inoffensive.

Additionally, Living Machine<sup>®</sup> technology was suggested during community outreach meetings. The technology has been implemented in buildings but there is no evidence of the technology being used at a municipal scale. The proposed non-proprietary treatment system (aerated lagoons and subsurface flow wetland) uses essentially the same natural treatment processes as the Living Machine<sup>®</sup>, but on a municipal scale.

### **2.8.3 Other Effluent Management Options**

Several effluent management options were evaluated for feasibility as an alternative to land application. The options described below were removed from consideration due to their lack of feasibility and other concerns as outlined herein.

- **Ocean Discharge.** Ocean discharge of treated effluent is not considered a viable option for Pāhala due to the long distance from the site to the shoreline, the high cost to construct an outfall, stringent receiving water quality standards, high ocean water monitoring costs, and the difficulty and length of time required to secure permits.
- **Subsurface Disposal via Injection Wells.** Per HAR 11-23, disposal to groundwater via an injection well is not allowed west (mauka) of the DOH UIC line. Because the town of Pāhala is located mauka of the UIC line, an injection well is not a viable option.
- **Water Recycling.** Water recycling was considered as an alternative effluent management option but removed from consideration due to the low irrigation demand in the Pāhala area and DOH requirements for all water recycling programs to have a 100-percent backup system. Storage systems could be constructed but could lead to issues as described in Section 2.8.2.
- **Drain Field.** A drain field (i.e., a leachfield) is an alternative effluent management option, but was removed from consideration due to the reasons outlined in Section 2.8.2, most notably the large amount of land required for a drain field and difficulties with distributing effluent across such a large area.

## **2.9 Relationship to 2007 Final Environmental Assessment**

In August 2007, the County of Hawai'i DEM issued a Final EA for the Nā'ālehu-Pāhala LCC Conversion project. The County then made a Negative Declaration, also referred to as a FONSI, regarding the project on August 10, 2007, and published a notice of the determination in the August 23, 2007 issue of the Office of Environmental Quality Control (OEQC) publication *The Environmental Notice*.

As described in that Final EA, the County DEM initiated the project to address the closure of the LCCs within the Nā'ālehu and Pāhala communities. Although that Final EA addressed both communities, the proposed improvements were essentially similar for both communities. For Pāhala, the proposed project was to construct new sewer collection systems located primarily within the public ROWs and to replace the existing LCCs with six DOH-approved septic tanks for wastewater treatment and reuse of LCC 1 as a seepage pit for the effluent disposal system.

After the issuance of the 2007 Final EA and Negative Declaration/FONSI, the County conducted additional study and evaluation of the proposed LCC conversion project. The County eventually concluded that the LCC conversion project described in the 2007 Final EA would not meet the need to provide a collection system and a treatment and disposal facility, close the LCCs, and provide for the future needs of the Pāhala community. This determination was based on several factors, including the following:

- The capacity, structure, and condition of LCC 1 are not known; the County attempted to determine the structure and condition of LCC 1 via inspection by closed circuit television but could not ascertain its condition due to technological limitations. Additionally, poor results from soil percolation tests influenced the County to consider looking at a larger land area to construct a secondary treatment system to fulfill a longer-term vision of a higher level of wastewater treatment and options for plant expansion for possible community growth.
- HAR 11-62-25 requires new and proposed effluent disposal systems to have a backup disposal system capable of handling the peak flow. However, a second seepage pit would most likely not be allowed as the site is located mauka of the UIC line. Also, if the existing seepage pit were to fail, a replacement could not be constructed.
- The Ka'ū Community Development Plan was adopted as Ordinance No. 2017-66 in October 2017. This plan requires the County to provide for eventual construction of a collection system and treatment and disposal facility to serve the entire Pāhala community. Although the Ka'ū Community Development Plan was adopted subsequent to the 2007 Final EA, the Pāhala LCC Replacement Project would need to be consistent with the plan. Increasing flow to the converted existing LCC used as a seepage pit would not be allowed because it is located mauka of the UIC line. Therefore, the use of the existing LCC as a disposal system could prevent the County from providing the community's desired future wastewater needs.
- As discussed in Section 2.8.2(a), the use of a community septic tank would present odor concerns and would not be capable of meeting state effluent quality standards. Also, the County would need a variance to HAR 11-62 from DOH to install the system as proposed in the 2007 Final EA, which is not a long-term sustainable option.

Based on the above considerations, the County has decided not to move forward with the Pāhala LCC Conversion Project described in the 2007 Final EA and Negative Declaration/FONSI, and is instead evaluating the alternatives described in this Final EA.

## **2.10 Other Considerations**

### **2.10.1 Zoning Considerations**

Lands within the Pāhala community are designated "Urban" by the State Land Use Commission. The wastewater treatment and disposal project site is designated "Agricultural."

The 14.9-acre treatment and disposal facility would be owned by the County of Hawai'i and managed and operated by the County of Hawai'i DEM. The treatment and disposal facility would be a "public use" as defined by HCC § 25-1-5, as a use conducted by or a structure or building owned or managed by the federal government, the State of Hawai'i, or the County to fulfill a governmental function, activity, or service for public benefit and in accordance with public policy.

To ensure compliance with relevant code, the County would obtain a Plan Approval from the Planning Department for the treatment and disposal facility. Also, the County would submit a Special Permit application through the Planning Department to the County Planning Commission.

### **2.10.2 Land Transfer**

Construction of the portions of the collection system located within County ROWs would not require further land transfer approvals. As previously discussed, three segments of the planned collection system would be located within privately owned parcels. The County would obtain easements from the landowner(s) as part of the design process.

HCC Chapter 23 (Subdivisions) states that all subdivision plats and all streets or ways within the County created for the purpose of partitioning land shall be approved by the County Planning Department Director. Further, HCC § 23-11 includes requirements on lot sizes. The County would subdivide the 14.9-acre treatment and disposal facility based on HCC § 23-11, which states the following:

*"standards of this chapter shall not be applicable to public utility or public rights-of-way subdivisions and their remnant parcels; provided that the County Planning Department Director, upon conferring with the County Director of Public Works and Manager-Chief Engineer of the County Department of Water Supply, may require necessary improvements to further the public welfare and safety."*

Lastly, HCC § 23-12 (Submission of application and plans; filing) states the following:

*"(a) A person desiring to subdivide land or desiring to partition land by creation of a street within the County shall submit an application for subdivision and preliminary and final plans and documents for approval as provided in this chapter and State law; (b) No subdivision plat may be filed with the Bureau of Conveyances or Land Court until submitted to and approved by the Planning Department Director."*

The County has conducted a Phase 1 Environmental Site Assessment of the entire 42.5-acre parcel comprising Site 7. This review did not identify any recognized environmental concerns or liabilities associated with acquiring portions of Site 7.

### **2.10.3 Hawai'i Revised Statutes (HRS) Chapter 205 Considerations**

Lands within the Pāhala community are designated as "Urban" by the State Land Use Commission. The wastewater treatment and disposal project site is designated as "Agricultural." According to HRS § 205-4.5, permissible uses within the agricultural districts are the following:

*"(a) Within the agricultural district, all lands with soil classified by the Land Study Bureau's detailed land classification as overall (master) productivity rating class A or B shall be restricted to the following permitted uses:*

- (1) Cultivation of crops, including crops for bioenergy, flowers, vegetables, foliage, fruits, forage, and timber;*
- (2) Game and fish propagation;*

- (3) *Raising of livestock, including poultry, bees, fish, or other animal or aquatic life that are propagated for economic or personal use;*
  - (4) *Farm dwellings, employee housing, farm buildings, or activities or uses related to farming and animal husbandry.*
  - (5) *Public institutions and buildings that are necessary for agricultural practices;*
  - (6) *Public and private open area types of recreational uses, including day camps, picnic grounds, parks, and riding stables, but not including dragstrips, airports, drive-in theaters, golf courses, golf driving ranges, country clubs, and overnight camps;*
  - (7) *Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures;*
- (b) Uses not expressly permitted in subsection (a) shall be prohibited, except the uses permitted as provided in Sections 205-6 and 205-8.”*

Under HRS § 205-6, use of agricultural lands for non-agricultural purposes requires approval of a Special Permit by the County Planning Commission who submits the petition to the Land Use Commission, Office of Planning and State Department of Agriculture for their review and comment. HRS § 205-6 (Special permit) states the following:

*“(a) ...the county planning commission may permit certain unusual and reasonable uses within agricultural and rural districts other than those for which the district is classified. Any person who desires to use the person's land within an agricultural or rural district other than for an agricultural or rural use, as the case may be, may petition the planning commission of the county within which the person's land is located for permission to use the person's land in the manner desired. Each county may establish the appropriate fee for processing the special permit petition...”*

Based on the above, a Special Permit application for the proposed treatment and disposal facility would be prepared by DEM for submittal to the County Planning Commission.

## **2.11 Project Schedule and Implementation**

Information regarding project schedules, including EPA compliance dates, project updates and milestones can be found on the EPA website at: <https://www.epa.gov/uic/county-hawaii-administrative-order-consent-closure-cesspools-pahala-and-naalehu>.

The County will also provide information about the construction schedule for the collection system and the treatment and disposal facility to the DOE Facilities Development Branch Public Works Administrator on request. Impacts and mitigation measures for addressing construction-related dust, traffic, and noise are presented in Sections 3.14.2, 3.17.2, and 3.18.2. Further, the County will coordinate with the DOE Student Transportation Services Branch Manager and the School in order to minimize construction-related impacts to student transportation services.

If funds are available, appropriated by County Council, and encumbered in accordance with applicable law, the County of Hawai'i DEM is the County agency authorized to implement each phase of the project's completion including:

- Project schedules and budgets;
- Completion of the HRS Chapter 6E (Historic Preservation) process;

- Conduct and monitoring of necessary field investigations, as required;
- Preliminary and final design;
- Preparation of construction contract documents including plans, specifications, and boilerplate;
- Obtaining required plan and document approvals and clearances;
- Arranging for funding and coordination of right of entry, easement, and property acquisition;
- Ensuring required permits are identified and obtained;
- Coordinating construction contract advertisement, bidding, award recommendations, payments, and reimbursements with County of Hawai'i Department of Public Works Contracting, CWSRF, and EPA;
- Construction management, construction and field inspection of the proposed action;
- Development of O&M Manuals and preparation of record drawings;
- Operator training;
- Filing required reports and certifications;
- Operation, maintenance, and repair of the constructed facilities; and
- Collecting sewer user charges.

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## **3 DESCRIPTION OF EXISTING CONDITIONS, IMPACTS AND MITIGATION MEASURES**

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### **3.1 Climate**

#### **3.1.1 Existing Conditions**

(a) All Alternative Sites

Climate on the Island of Hawai'i and more broadly throughout the state can be characterized as having low day-to-day and month-to-month variability. Differences in the climate of various areas are generally attributed to local differences in geology and topography that create microclimates with different temperature, humidity, wind and rainfall, and associated local ecosystems (University of Hawai'i at Hilo, 1998).

The climate of Pāhala is typical of the predominantly dry condition found in the Ka'ū District. The National Oceanic and Atmospheric Administration (NOAA) designates the Ka'ū area as a Humid Tropical Zone with transitional lowland areas in locations between windward and leeward regions. The area receives less orographic rainfall since it is not oriented normal to trade wind flow and exhibits a distinctive summer dry season.

Temperatures in the Ka'ū District generally range between 70 and 80 degrees Fahrenheit during daylight hours and between 60 and 70 degrees Fahrenheit during night hours. The National Weather Service maintains a rainfall gauge at Pāhala. For calendar year 2017, the Hawai'i Rainfall Summary shows a total of 40.58 inches rain at Pāhala, about 71 percent of the average of 57.00 inches. Below-average totals were also observed at two other rainfall gauges nearby at Kahuku Ranch and South Point.

Prevailing trade winds in the Ka'ū District area are from the southeast and usually dominate from April to November. Wind speeds average about 15 miles per hour and vary between approximately 10 to 20 miles per hour. Winds from the southwest occur less frequently, mainly during the winter associated with "Kona" storms (Department of Geography, 1998).

Climate conditions in the Ka'ū District are likely to change in coming decades. Average annual precipitation is also likely to change, but climate models are uncertain in projections for Hawai'i. Based on ensemble model projections available through the U.S. Environmental Protection Agency's (EPA's) Climate Resilience Evaluation and Awareness Tool (CREAT) Climate Scenarios Projection Map, projections for the area surrounding Pāhala range from a minor decrease in annual precipitation (up to a 1.2-percent decrease) to up to a 17.3-percent increase by 2060, depending on the model scenario (hot/dry vs. warm/wet) (EPA, 2020). Climate models also predict changes in the intensity of storm events. Projections range from a 1.0-percent to a 19.8-percent increase in 100-year storm intensity by 2035, depending on the scenario used for the modeling ("stormy" vs. "not as stormy"). By 2060, projections range from a 1.9-percent to a 38.5-percent increase in storm intensity (EPA, 2020). Another climate concern for coastal areas and islands is sea level rise.

#### **3.1.2 Impacts and Mitigation Measures**

(a) All Alternative Sites

There is the potential for construction-related and operational greenhouse gas emissions under the proposed action. Heavy equipment during construction may temporarily emit greenhouse gases during their operation and trucks used to transport supplies and equipment may cause

emissions outside of the Pāhala area. Operation of the wastewater system under the Proposed Action also has the potential for minor greenhouse gas emissions due to operations at, and one-per-week vehicle trips to, the proposed treatment and disposal facility site. These emissions are expected to be minor and are not expected to contribute substantially to emissions from the Pāhala area.

Changes in average annual temperature are unlikely to impact the proposed wastewater treatment and disposal facility and its effluent because there is no discharge to surface water sources and therefore the temperature of streams in the area is unlikely to be impacted by the project. Because all project locations are at least 3.3 miles from the coast and at least 580 feet above mean sea level (msl), sea level rise is not expected to impact the proposed project.

The large amount of uncertainty in climate projections makes it difficult to determine potential impacts of increased storm intensity on the project, but it is likely that there is some change in storm intensity in the next few decades. The new infrastructure under the Proposed Action would be designed to collect sanitary wastewater only; the community's stormwater would be managed by other means. Some nominal inflow of stormwater into wastewater collection systems through manhole covers and other hydraulic pathways is normal and can be expected to increase with increasing storm intensity in the future. Because the proposed wastewater treatment and disposal facility does not intercept stormwater flows, there is unlikely to be a direct impact on inflow to the plant, although more intense or more frequent storms could impact the open aerated lagoons, subsurface flow constructed wetland, and land application processes from precipitation falling directly on these systems. Hazards related to hurricanes, such as wind, rain, and flood loads, would be taken into account during detailed design. Applicable regulations and standards, including International Building Code (IBC) 2006, would be adhered to. All potentially affected processes would be bermed to contain the 100-year, 24-hour storm event while maintaining at least two feet of freeboard to account for the uncertainty of the climate model projections.

(b) No-Action Alternative

Under the No-Action Alternative, the existing large capacity cesspools (LCCs) are at risk of impacts due to climate change, specifically changes in precipitation and storm intensity. The nature of the LCCs makes them more exposed to these threats, potentially leading to impacts to groundwater, surface water, and other resource areas.

## **3.2 Topography**

### **3.2.1 Existing Conditions**

The Pāhala community lies on the slope of Mauna Loa, west (mauka) of Māmalahoa Highway and occupies an area of about 0.61 square miles. The developed area of Pāhala slopes down at about 6 percent from the northwest to the southeast, from an elevation of 1,000 feet above msl to 800 feet above msl over a distance of 3,500 feet. The slope of the streets in the community approximately follows the contours to maintain level or appropriately sloped grades to allow vehicle travel. On certain streets, this condition results in house lots on the downhill side of the street to be several feet below the road surface, while those on the uphill side lie several feet above.

(a) Preferred Alternative (Site 7)

The 42.5-acre preferred location for the Proposed Action is generally situated on a southeast facing slope with an average slope of approximately 8.7 percent and a maximum of 18.9 percent. The elevation of the parcel ranges from 580 to 780 feet above msl.

(b) Alternative Site 8

The 45.2-acre Site 8 parcel faces approximately southeast with an average slope of approximately 9 percent and a maximum of 28.2 percent. The elevation of the parcel ranges from approximately 540 to 740 feet above msl. An unnamed branch of Hi'onamoa Gulch crosses the site from northwest to southeast near the center of the parcel.

(c) Alternative Site 9

The 157-acre Site 9 parcel faces approximately southeast with an average slope of approximately 7 percent and a maximum of 10 percent. The elevation of the parcel ranges from approximately 300 to 600 feet above msl. Two unnamed south-flowing branches of Hi'onamoa Gulch cross portions of the parcel.

### **3.2.2 Impacts and Mitigation Measures**

(a) Preferred Alternative (Site 7)

Construction of the new wastewater collection system would require trenching in locations throughout the Pāhala community, primarily within the right-of-way (ROW) of public streets plus three segments within easements. Trenches would typically be about 3 feet wide and at least 6 feet deep. Due to the existing topography, several locations may also require installation of pumps. Once the line is placed in the trench, the affected area would be backfilled to restore the existing topography, resulting in minimal localized effects to the site topography.

The construction of the wastewater treatment and disposal facility would involve grading, excavating, and fill activities on approximately 14.9 acres at Site 7. Excavation to depths of approximately 4 to 10 feet would be required to provide necessary capacity for the lagoons, constructed wetlands, and planted groves. An approximately 4-foot tall berm would be constructed on all four sides of the groves to contain rainfall from a 100-year, 24-hour storm event. As discussed in Section 3.7.2, stormwater and erosion control plans would be developed, necessary construction permits would be obtained, and appropriate stormwater and erosion control measures would be implemented.

Abandonment of the two LCCs and the existing wastewater collection system would not affect topography within the affected areas.

(b) Alternative Site 8

Under this alternative, the topographic impacts and mitigation measures would be similar to those described above for the Preferred Alternative (Site 7), with the following differences:

- Construction of an additional 1,600 feet of collection system piping to reach Site 8 would require additional trenching. The affected areas would be backfilled to restore the existing topography.
- Due to the steeper slopes at Site 8, construction of the wastewater treatment and disposal facility would require grading, excavating, and fill activities on approximately 4 additional acres to accommodate the terracing required to construct the slow-rate land application groves on the steeper site.

(c) Alternative Site 9

Under this alternative, the topographic impacts and mitigation measures would be similar to those described above for the Preferred Alternative (Site 7); however, an additional 3,200 feet of trenching would be required to extend the collection system piping, potable water line, and fire protection line to Site 9. The affected areas would be backfilled to restore the existing topography.

(d) No-Action Alternative

The No-Action Alternative would not involve grading, excavation, or fill activities, and therefore would not impact topography in the Pāhala area.

### **3.3 Geology**

#### **3.3.1 Existing Conditions**

(a) All Alternative Sites

The Island of Hawai'i was formed by the activity of five shield volcanoes. These shield volcanoes are Kohala (extinct), Mauna Kea (has had activity during recent geologic time), Hualalai (last erupted in 1801), and Mauna Loa and Kilauea (both of which are still active).

The project site is situated at the eastern end of the island and on the lower, southeastern flank of the Mauna Loa Volcano. This volcano appears to be made up of at least two huge shield volcanoes built around two separate eruptive centers, referred to as the Mauna Loa shield. The Mauna Loa shield has been built principally by eruptions along two rift zones that extend in a southwest and east-northeast direction from the caldera. Rift zones are elongated areas of ground fissures where volcanic activity such as earthquakes and volcanic eruptions are concentrated. In contrast, few eruptions have taken place along the lower northeast rift zone.

Pāhala is situated on the slopes of Mauna Loa. The surrounding area consists of several inter-stratified beds of volcanic ash that sit upon the exposed bedrock. The Pāhala area is known to contain lava tubes, which often occur in many places around the Island of Hawai'i. Generally, a lava tube is a natural conduit or void that forms when molten lava flows beneath the hardened surface of a previous lava flow. When the volcanic eruption stops, and the lava drains out, a lava tube forms in the void. Lava tubes can range in size from a few inches to more than 25 feet in diameter. The tubes are generally not visible from the surface and the diameter and length can usually be identified only through subsurface probing or geophysical surveys. The presence of lava tubes underneath the proposed collection system site and the alternative wastewater treatment and disposal facility sites is possible but unknown. The County is in the process of performing non-intrusive geophysical surveys of sites for the Proposed Action, which would be followed by geotechnical investigations where necessary to confirm the presence or absence of lava tubes.

#### **3.3.2 Impacts and Mitigation Measures**

(a) All Alternative Sites

Grading, excavating, and fill activities during construction of the wastewater treatment and disposal facility and the new collection system would occur no deeper than approximately 10 feet below grade and thus would have negligible impacts on the geology in the Pāhala area. If subsurface investigations determine that voids (such as lava tubes) are present, the site plan for the facility and/or collection system may require adjustments where practicable. If/when bedrock is encountered during excavation for the Proposed Action, removal would be accomplished using hydraulic and/or pneumatic hammers consistent with other construction activities on the Hawaiian Islands. Standard local practice for underground cavities encountered during excavations is to collapse unstable sections and backfill the void with engineered materials. Should any unanticipated archeological sites or materials be encountered, all work in the affected area would cease and the Hawai'i State Historic Preservation Division (SHPD) would be notified. Work in that area would cease until clearance to proceed from SHPD. An archeological monitoring plan will be prepared during design where deemed necessary by SHPD for their approval prior to ground disturbing activities.

Abandonment of the two LCCs and the existing wastewater collection system would not affect geology within the affected areas.

Impacts and mitigation measures associated with seismic hazards are discussed in Section 3.4.

(b) No-Action Alternative

The No-Action Alternative does not involve any construction activities or modification to the existing conditions, and therefore would not cause any impacts to geology in the Pāhala area.

### **3.4 Seismic Hazard**

#### **3.4.1 Existing Conditions**

(a) All Alternative Sites

Earthquakes in the Hawaiian Islands are primarily associated with volcanic eruptions resulting from the inflation or shrinkage of magma reservoirs beneath, which shift segments of the volcano. The Island of Hawai'i experiences thousands of earthquakes each year; however, most are so small that they can only be detected by instruments. Although difficult to predict, an earthquake of sufficient magnitude could cause structural or other damage to public facilities including wastewater collection systems. The seismic risk classification of the Island of Hawai'i is Zone 4 (County of Hawai'i, 2007).

Earthquakes may occur before or during an eruption or may result from the underground movement of magma that comes close to the surface. On the Island of Hawai'i, earthquakes directly associated with the movement of magma are concentrated beneath the active Kilauea and Mauna Loa Volcanoes. Typically, the risk of seismic activity and degree of ground movement decreases with the distance from these active volcanoes. A few of the island's earthquakes are less directly related to volcanism. These originate in the zones of structural weakness at the base of the volcanoes or deep within the earth beneath the island.

Several destructive earthquakes have occurred on the Island of Hawai'i. The locations of larger damaging on-island earthquakes since 1868 have generally occurred in the southeast portion of the island near Kilauea, with the most recent destructive earthquake on this south flank occurring on June 26, 1989 with a magnitude of 6.1. More recently, a magnitude 6.9 earthquake occurred on May 4, 2018 offshore and east of Kilauea, though this earthquake was classified as non-destructive.

#### **3.4.2 Impacts and Mitigation Measures**

(a) All Alternative Sites

Hawai'i County Code (HCC) § 5-3 indicates the "International Building Code, 2006 Edition" (IBC) – copyrighted and published in 2006 by the International Code Council, Incorporated – is adopted by the County. Chapter 5 is the applicable code for the construction of buildings, structures, and facilities in the County. The purpose of the seismic provisions in the IBC is primarily to safeguard against major structural failures and loss of life; limiting damage or maintaining functions is not a primary purpose. At a minimum, structures are to be designed and constructed to resist the effects of ground motions from seismic events. The seismic hazard characteristics described in the IBC are based on the seismic zone and proximity of the site to active seismic sources.

The wastewater treatment and disposal facility would be designed and constructed to meet the requirements of the 2006 IBC and HCC Chapter 5 and would comply with seismic loadings established for the County of Hawai'i. This would minimize the potential for an uncontrolled release of untreated or partially treated sanitary wastewater, or emergency generator diesel fuel

from the facility during a seismic event. The County would also develop a facility management plan in accordance with applicable rules and regulations.

(b) No-Action Alternative

The No-Action Alternative includes no construction or modification to existing conditions, and therefore would not impact seismic hazard in the Pāhala area.

### **3.5 Volcanic Hazard**

#### **3.5.1 Existing Conditions**

(a) All Alternative Sites

In 1997, the USGS prepared an updated volcanic hazard zone map for the Island of Hawai'i. The map shows lava flow hazard zones for the five on-island volcanoes. The current map divides this island into zones ranked from 1 (highest hazard) through 9 (lowest hazard) based on the probability of coverage by lava flows. Hazard zones from lava flows are based mainly on the location and frequency of both historic and prehistoric eruptions. Hazard zones also consider the larger topographic features of volcanoes that affect the distribution of lava flows.

Pāhala has been assigned a rating of Zone 3, which designates areas that are less hazardous than Zones 1 and 2 because of the greater distance from recently active vents and (or) because of topography. One to five percent of Zone 3 areas have been covered by eruptions since 1800, and 15 to 75 percent have been covered within the past 750 years.

#### **3.5.2 Impacts and Mitigation Measures**

(a) All Alternative Sites

Based on the volcanic hazard map, the potential for damage is moderate, given the distance between the Pāhala community and active vents and hazards. At this time, the County has no construction restrictions in Zone 3 areas. Thus, at this time, the volcanic hazard designation would not affect the construction and operation of a collection system or treatment and disposal facilities. Although the potential for volcanic activity in or around Pāhala is present, the likelihood of that impact is relatively small. In the event of a volcanic eruption that threatens the Pāhala area, it is likely that damage would occur to residences, the treatment and disposal facility, the collection system, and other assets in the area. There are no mitigation measures to prevent the potential impacts from volcanic activity, and the impacts would be similar regardless of the location of the treatment and disposal facility or treatment system employed.

(b) No-Action Alternative

The No-Action Alternative involves no change to the status quo, so the current risk faced by Pāhala and the LCCs would remain consistent.

### **3.6 Soils**

#### **3.6.1 Existing Conditions**

(a) All Alternative Sites

Figure 3.1 shows the soil types in the Pāhala area, based on the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Soil Survey of the Island. Soils at all alternative sites for the proposed wastewater treatment and disposal facility are primarily classified as Map Unit 521 – Nā'ālehu medial silty clay loam, 3 to 10 percent slopes. This soil profile consists of approximately 17 inches of medial silt loam over hydrous silty clay loam with a depth to bedrock greater than 59 inches. This soil series has moderately high to high permeability characteristics, and generally consists of well-drained soils that formed in volcanic ash. As shown in Figure 3.1,

the northwest half of Site 8 is composed of a slightly different soil type, Map Unit 522 – a Nā'ālehu medial silty clay loam, 10 to 20 percent slopes.

The western portion of the collection system and the wastewater treatment and disposal facility alternative sites consist of ash fields on pāhoehoe lava fields with soils that are well drained with a runoff class of low. The remainder of the area for the collection system has a soil classified as Map Unit 567 – Pu'u'eo- Nā'ālehu complex, 3 to 10 percent slopes with land consisting of basic volcanic ash fields over a'a lava flows. Soils in these areas are somewhat excessively drained with a runoff class of very low.

### **3.6.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

The collection system would be constructed below the travelways or shoulders of the streets in the Pāhala community. These were previously disturbed when the streets and shoulders were originally constructed, and therefore the collection system would not create new adverse impacts to soils in the area.

Construction of the wastewater treatment and disposal facility would require removal of macadamia nut trees and clearing and excavating for construction of various improvements as described in Section 2.3.1. The soils within the proposed treatment and disposal facility at Site 7, as well as similar locations at Sites 8 and 9 that are also part of the macadamia nut orchard, were previously disturbed during planting of the macadamia nut trees. A high-density polyethylene (HDPE) or concrete liner would be placed below the excavated areas for the lagoons and subsurface flow wetland, mitigating adverse impacts to soils in the area as well as groundwater.

The proposed location for slow-rate land application basins would also require excavation to allow placement of the soil medium (approximately 8 acres for Sites 7 and 9, and approximately 12 acres for Site 8). Although the soils would be disturbed, the natural permeability characteristics of the soil would mitigate adverse impacts due to construction. The Proposed Action would incorporate appropriate stormwater and erosion control measures in accordance with approved plans to ensure that soil erosion and transport during construction activities are minimized. Continued operation of the land application basins is not expected to cause adverse impacts to surrounding soils due to the physical and biological treatment that would occur as effluent percolates through the soil and is taken up by planted vegetation.

Abandonment of the two LCCs and the existing wastewater collection system would not affect soils within the affected areas.

#### **(b) No-Action Alternative**

The No-Action Alternative would not involve any direct or indirect impacts to soils. Continued use of the existing LCCs and wastewater collection system would not result in impacts to soils in the Pāhala area.

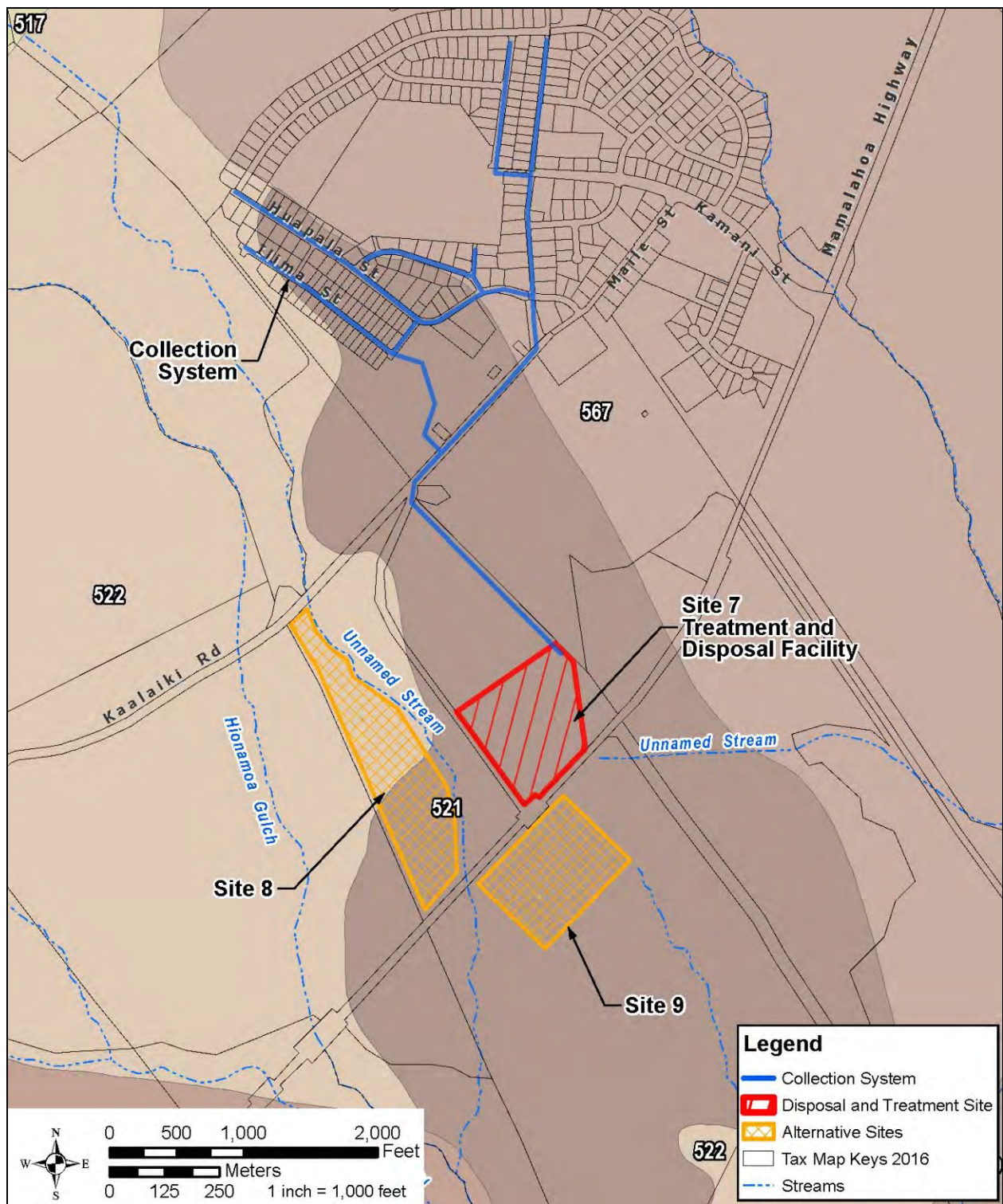


Figure 3.1. Pāhala Area Soils Map



### **3.7 Surface Water**

#### **3.7.1 Existing Conditions**

The Pāhala community is located between two surface water sources, Pā'au'au Gulch to the north and east, and an unnamed branch of Hi'onamoa Gulch to the south and west. The USGS topographic map shows flows from Pā'au'au Gulch end about 6,500 feet from the coast, while the unnamed branch flows into Hi'onamoa Gulch about 3,000 feet southwest of Maile Street. Flows from Hi'onamoa Gulch end about 6,000 feet from the coast. Figure 3.1 illustrates the known streams and gulches within the Pāhala area.

##### **(a) Preferred Alternative (Site 7)**

There are no surface water sources located within the Pāhala community near the existing or proposed wastewater collection system or the existing LCCs. Similarly, there are no surface water sources located within Site 7. The National Wetlands Inventory (NWI) Wetlands Mapper and USGS topographic maps identify no wetland features or streams within Site 7, at the two LCCs, or within the proposed collection system area. Biological and archeological field survey reports do not indicate any standing water or evident wetland vegetation within Site 7. On August 2018, a biological field survey was conducted at Site 7 and results of the field work indicated that no wetlands were observed on the site. The man-made drainage feature along Māmalahoa Highway along the edge of the parcel conducts flow generated from surface runoff underneath the highway and downslope to the east. Conditions within the ditch itself close to or on the property would not likely satisfy the hydric soil requirement to be defined as a wetland.

##### **(b) Alternative Site 8**

The unnamed branch of Hi'onamoa Gulch crosses the Site 8 parcel from northwest to southeast near the center of the parcel. The gulch is classified as a riverine wetland in the NWI, but it is unknown whether this has been confirmed through a field survey and delineation. No other wetlands or surface water bodies are known to be located on this parcel.

##### **(c) Alternative Site 9**

Two unnamed south-flowing branches of Hi'onamoa Gulch cross portions of the Site 9 parcel. Also, an unnamed east-flowing branch of Pā'au'au Gulch originates in the Site 9 parcel near the southeast boundary of the Site 7 parcel; this branch flows into Pā'au'au Gulch approximately 4,000 feet east of the Site 9 parcel. These gulches are classified as riverine wetlands in the NWI, but it is unknown whether this has been confirmed through a field survey and delineation. No other wetlands or surface water bodies are known to be located on this parcel.

#### **3.7.2 Impacts and Mitigation Measures – Construction Activities**

##### **(a) Preferred Alternative (Site 7)**

Given the cumulative areal extent of disturbance for the wastewater treatment and disposal facility and the new collection system, the Proposed Action would require coverage under a National Pollutant Discharge Elimination System (NPDES) construction stormwater permit. The NPDES permit would include best management practice (BMP) measures such as use of silt fences or filter socks along the perimeter of each construction site and sediment traps at drainage inlets. Further, to minimize the potential for inadvertent leaks or spills of fuels and other petroleum products, construction vehicles and equipment would be well maintained and kept at a temporary staging area where runoff is controlled.

Construction trenches would require the contractor to submit erosion control and stormwater control plans to the County and the Department of Health (DOH). Typically, the plans would require installation of erosion and sediment control BMPs. This may include the use of perimeter

controls, such as silt fences or filter socks. These BMPs would be used to surround all construction sites, including material storage and staging areas and all construction sites related to the collection system, to control pollutants in stormwater flow from the sites during construction.

The construction contract documents would require that a Site-Specific Construction BMP plan be prepared, addressing the measures that will be implemented onsite to prevent stormwater pollution. This may include spill response measures, waste management procedures, and other pollution prevention activities. The NPDES permit would also require periodic BMP inspections (and maintenance of associated documentation) to ensure the construction activities are compliant with the BMPs, Stormwater Pollution Prevention Plan (SWPPP), and NPDES permit.

Construction of the treatment and disposal facility would result in an increase in impervious surfaces. HCC § 27-20 requires an on-site drainage plan to accommodate any runoff caused by a proposed development, and requires all runoff to be retained within the site under conditions up to the design storm event. An on-site drainage system within the developed area would collect runoff via grated inlets or swales. These flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins, to detain flows and volumes to their pre-development condition. Typically, a 1-hour, 10-year storm event is used to determine the size of the on-site drainage system. As stated in HCC § 27-20:

*“(e) All developments requiring a site drainage plan under Section 25-2-72(3) shall submit such a plan for review and approval by the director of public works. The site drainage plan shall comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected one-hour, ten year storm event, as shown in the department of public works “Storm Drainage Standards,” dated October 1970, or any approved revision, unless those standards specify a greater recurrence interval. Expected runoff may be calculated by any nationally-recognized method meeting with approval of the director of public works. Runoff calculations shall include the effects of all improvements.*

*(f) Storm water shall be disposed into dry wells, infiltration basins, or other approved infiltration methods. The development shall not alter the general drainage pattern above or below the development.”*

To ensure that there is no adverse impact on adjacent or downstream properties due to post-development flows, landscape buffers with dirt berms would be constructed around most of the perimeter of the property, acting as secondary containment in the event of a large storm event. The planted groves for the land application system would be constructed with an approximately 4-foot-high berm on all four sides to contain the peak treated effluent flows plus rainfall from a 100-year, 24-hour storm event. Once the berms are constructed, no adverse effects to the surrounding areas would be likely for a storm of that magnitude. See Section 3.23 for more information regarding stormwater drainage.

Overall, the potential for construction-related impacts on surface water resources is temporary and adherence to BMPs will minimize the potential for these impacts to occur.

Abandonment of the two LCCs and the existing wastewater collection system would not affect surface waters within the affected areas. A single NPDES permit would be secured for all elements of the project, including LCC closure.

(b) Alternative Sites 8 and 9

All of the same information presented above for the Preferred Alternative (Site 7) is relevant to Alternative Sites 8 and 9. The same permits would be required, and the same or similar construction practices and BMPs would be implemented to mitigate potential impacts.

One difference between the Preferred Alternative (Site 7) and Alternative Sites 8 and 9 is the presence of south-flowing branches of Hi'onamoa Gulch in Sites 8 and 9, as shown in Figure 3.1. Depending on the selected configuration of the wastewater treatment facility and the land application groves, Alternative Sites 8 or 9 could require trenching and construction of piping across the unnamed branches of the gulch. A Stream Channel Alteration Permit would be required should the piping alter the stream banks. Extra attention would be required to ensure that BMPs are implemented to prevent erosion and sedimentation that could impact the surface water bodies. To avoid this potential impact for Site 9 and to minimize costs, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway which would result in other impacts. The potential for impacts to surface water is greater at Sites 8 and 9 due to the presence of these unnamed streams.

(c) No-Action Alternative

The No-Action Alternative includes no construction activities, and therefore would not lead to a construction-related impact to surface water.

### **3.7.3 Impacts and Mitigation Measures – Operation of Wastewater System**

(a) Preferred Alternative (Site 7)

EPA defines land treatment as “the application of appropriately pre-treated municipal and industrial wastewater to the land at a controlled rate in a designed and engineered setting. The purpose of the activity is to obtain beneficial use of these materials, to improve environmental quality, and to achieve treatment goals in a cost-effective and environmentally sound manner” (EPA, 2006).

The soils at the Preferred Alternative site (Site 7) are suitable for slow-rate land treatment. Slow-rate land treatment consists of irrigation of land and vegetation with treated effluent. Significant further treatment is provided as the water percolates through the soil and the vegetation uses the nutrients in the effluent as fertilizer and transpires a portion of the applied water. The proposed wastewater treatment and disposal facility would be designed to intermittently apply treated effluent to native trees and vegetation growing on permeable soils. After an application period or wetting period, the surface can dry, and oxygen can enter the soil matrix, which aids aerobic biological treatment. The proposed project estimates a reduction of greater than 99 percent in the annual load of five-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and phosphorus to the environment compared to the current LCCs, and a decrease of 83 percent in the annual load of nitrogen compared to the existing LCCs. As a result, operation of the collection system and the treatment and disposal facilities would not create adverse impacts to surface water resources of the Pāhala area.

(b) Alternative Sites 8 and 9

All of the same potential impacts described for the Preferred Alternative (Site 7) would apply for Alternative Sites 8 and 9. However, the presence of streams on both Sites 8 and 9, as shown in Figure 3.1, heightens the risk of potential impact from the wastewater treatment and disposal facility on surface water resources. BMPs could help mitigate these potential impacts, and siting of the facility and land application sites would be important to avoid adverse impacts to surface water sources.

(c) No-Action Alternative

The No-Action Alternative includes no modifications to the existing landscape. As such, any impacts to surface water resources would be caused by the existing LCCs. Closure of the LCCs is mandated by EPA regulations due to increased risk of impacts to water supplies and public health from continued use of LCCs.

### **3.8 Groundwater**

#### **3.8.1 Existing Conditions**

Groundwater occurs within portions of geologic formations where aquifers receive and store water. Depending on geology of the area, many areas on the island rely on groundwater wells to obtain drinking water. To protect the quality of underground sources of drinking water from contamination by subsurface disposal of fluids, Hawai'i has adopted the Underground Injection Control (UIC) program administered by the DOH Safe Drinking Water Branch. Hawai'i Revised Statutes (HRS) 340 E and Hawai'i Administrative Rules (HAR) 11-23 (Underground Injection Control) set forth the requirements related to protection of underground sources of drinking water.

Under HAR 11-62, Appendix F, a minimum separation of 1,000 feet from existing wells is required for wastewater treatment sites.

(a) Preferred Alternative (Site 7)

On April 3, 2018, in response to the pre-assessment notification, the DOH Safe Drinking Water Branch indicated that the proposed wastewater treatment and disposal project site at Site 7 is located above the UIC line and, as such, on top of underground sources of drinking water. To avoid impacts to drinking water wells, sewage injection wells cannot be constructed above the UIC line.

The State of Hawai'i Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM) maintains information on various types of wells throughout the state. The CWRM indicated that one County and one private well are located in the Pāhala area. The CWRM confirmed that the County well and storage tank are located approximately 5,300 feet north of Site 7. The USGS topographic map shows the tank lies at about 1,120 feet above msl, which is approximately 480 feet higher in elevation than Site 7. A private well is located within TMK 9-6-002:016, the parcel that contains the existing LCC 1 and lies adjacent to Site 7. The CWRM has indicated this well is used for agricultural purposes, not for domestic purposes.

(b) Alternative Sites 8 and 9

The existing conditions discussed above for the Preferred Alternative (Site 7) are similar to Alternative Sites 8 and 9. Compared to the Preferred Alternative (Site 7) parcel, Site 8 is located a similar distance away, while Site 9 lies further away from the existing County drinking water well and the private well. There is a well to the southeast of the Site 9 parcel, but the parcel is not located within a 1,000-foot radius of the well.

#### **3.8.2 Impacts and Mitigation Measures**

(a) Preferred Alternative (Site 7)

The approximately 6-foot trenches needed to support the collection system would be relatively shallow in relation to groundwater resources in the Pāhala area. Thus, construction of the collection system would not affect groundwater resources in the area.

The treatment and disposal facility would require excavation for the lagoons, subsurface constructed wetland, and the planted groves. Preliminary plans show the lagoons would require about 10 feet of excavation, the subsurface constructed wetland about 4 feet and the planted

groves about 6 feet. Construction activities would follow an approved SWPPP to minimize potential adverse impacts to groundwater resources and stormwater during construction activities.

The lagoons and the subsurface constructed wetlands would be lined to prevent infiltration to the groundwater. As previously described, the incoming sewage would be treated in the lagoons, further treated in the subsurface wetland, and then disinfected prior to application of effluent to the planted groves. The use of a slow-rate land application system following treatment in lagoons and the subsurface constructed wetlands would be very effective at removing pollutants and nutrients from the effluent. Compared to the existing LCCs, the proposed wastewater treatment and disposal facility would decrease loading of BOD<sub>5</sub>, TSS, and phosphorus by greater than 99 percent, and the release of nitrogen by 83 percent.

For these reasons, and because of the separation (both elevation and horizontal distance) between Site 7 and the uphill County drinking water well, construction and operation of the treatment and disposal facility would not affect groundwater resources in the Pāhala area.

While use of the two existing LCCs has not resulted in documented impacts to groundwater or drinking water resources, abandonment of the LCCs would remove a potential source of such impacts. Abandonment of the existing wastewater collection system would not affect groundwater within the affected areas.

(b) Alternative Sites 8 and 9

The groundwater impacts and mitigation measures discussed above for the Preferred Alternative (Site 7) would also apply to Sites 8 and 9. The construction of the proposed collection system and the treatment and disposal facility at either Site 8 or Site 9 would not affect groundwater resources in the Pāhala area. As discussed above, the closure of the LCCs would remove a potential source of adverse impacts to groundwater and drinking water resources.

(c) No-Action Alternative

The No-Action alternative has the potential to adversely impact groundwater resources due to the continued operation of the existing LCCs. EPA regulations mandate the closure of LCCs to prevent potential impacts on groundwater resources.

### **3.9 Flood Risk**

#### **3.9.1 Existing Conditions**

(a) All Alternative Sites

The Pāhala community is located between two surface water sources, Pā'au'au Gulch to the north and east, and an unnamed branch of Hi'onamoa Gulch to the south and west. The USGS topographic map shows flows from Pā'au'au Gulch end about 6,500 feet from the coast, while the unnamed branch flows into Hi'onamoa Gulch about 3,000 feet southwest of Maile Street. Flows from Hi'onamoa Gulch end about 6,000 feet from the coast. The unnamed branch of Hi'onamoa Gulch runs through Alternative Sites 8 and 9 and approximately 200 to 600 feet west of the Site 7 parcel.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows no special flood hazard areas present in the project area and that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2- percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-

percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC 1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i DLNR, Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal facility site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain. See Appendix A for the responses to pre-assessment consultation letters.

### **3.9.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

The Proposed Action would not result in construction of new above-ground infrastructure within the 500-year floodplain. Although a small portion of the proposed collection system is located within the 500-year floodplain, the associated trenching operations would be temporary and would not alter the 500-year floodplain. Thus, no impacts to the existing floodplain are expected from the Proposed Action. For information related to stormwater management and impacts, please refer to Section 3.23.

Abandonment of the two LCCs and the existing wastewater collection system would not affect floodplains within the affected areas.

#### **(b) No-Action Alternative**

The No-Action Alternative, specifically the continued operation of LCC 1, could lead to impacts during a flooding event. LCC 1 is located very close to an area mapped as within the 0.2-percent annual chance (500-year) floodplain. The existing collection system is substandard and in poor condition. A large flood could potentially cause the collection system and/or LCC to overflow as a result of stormwater inflow and result in an uncontrolled release of raw sewage, thus potentially contaminating flooded areas and creating a public health hazard.

## **3.10 Agricultural Lands**

### **3.10.1 Existing Conditions**

In November 1965, the Land Study Bureau (LSB) at the University of Hawai'i issued L.S. Bulletin No. 6, *Detailed Land Classification—Island of Hawai'i*. The LSB compiled and interpreted data on geology, topography, climate, water resources, soils, and crops and conducted field investigations to create a land classification for the island. Bulletin No. 6 assigned two types of ratings for each land type: the overall or master productivity rating, which reflects degree of overall suitability for agricultural use, ranging from A (Very Good) to E (Very Poor); and selected use ratings, which indicate the degree of suitability for selected use alternatives. Bulletin No. 6 has not been revised or re-issued and remains as the reference document for lands classified by the LSB.

In addition to the LSB rating, the State of Hawai'i has developed the Agricultural Lands of Importance to the State of Hawai'i (ALISH) Classification System. This system was developed and compiled in 1977 by the State Department of Agriculture with assistance from the NCRS, U.S. Department of Agriculture (formerly the Soil Conservation Service) and the College of Tropical Agriculture at the University of Hawai'i as part of a national effort to inventory important farmlands. Lands not considered for classification within this system are developed urban lands (over ten acres), natural or artificial bodies of water (over ten acres), public use lands, forest

reserves, lands with slopes in excess of thirty-five percent, and military installations (except undeveloped areas over ten acres). The ALISH Classification System identifies the following three categories of land (equivalent NRCS categories in parentheses):

- Prime Agricultural Lands (Prime Farmlands) – Land that has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods.
- Unique Agricultural Lands (Unique Farmlands) – Land that has a special combination of soil quality, location, growing season, and moisture supply, and is used to produce sustained high-quality yields of a specific crop when treated and managed according to modern farming methods.
- Other Important Agricultural Land (Additional Farmland of Statewide and Local Importance) – Land other than Prime or Unique Agricultural Land that is also of statewide or local importance to agricultural use.

Figure 3.2 and Figure 3.3 show the LSB and ALISH classifications, respectively, in the project areas.

The 2012 Census of Agriculture-County provides the most recent information related to acreage planted for various fruits and nuts across the state and for each county. These data show a total of 18,006 acres of macadamia nuts were planted in the state, 17,387 acres of which were planted in the County, comprising about 96.6 percent of the state total.

(a) Preferred Alternative (Site 7)

The LSB rating indicates the collection system project site as “not rated”, the rating assigned to developed communities, and a master productivity rating of “D 129” (poor) for about 50 percent of the proposed wastewater treatment and disposal facility at Site 7, with the remainder “B” (good). D 129 includes soils from the Māmalahoa series, deep depth, volcanic ash, stony, well drained, and very poorly suited for machine tillability.

The ALISH map, Figure 3.3, shows the collection system is located in “unclassified” lands. The ALISH map shows the proposed wastewater treatment and disposal facility at Site 7 would be located on approximately 20 percent “prime”, 40 percent “other” and 40 percent “unclassified” land.

(b) Alternative Site 8

Site 8 is located on a mix of “prime” and “other” agricultural land, with slightly more than 50 percent classified as “prime.” There is no “unclassified” land at Site 8. Depending on the selected site plan, the land application groves would potentially be located on land classified as “prime.”

(c) Alternative Site 9

Site 9 is made up primarily of “unclassified” land, with sections of both “prime” land (northwest corner of the parcel) and “other” land (northeast and southwest edges of the parcel). The proposed facility would likely be sited at the northern end of Site 9, on land that is a mix of “unclassified” and “prime” land.

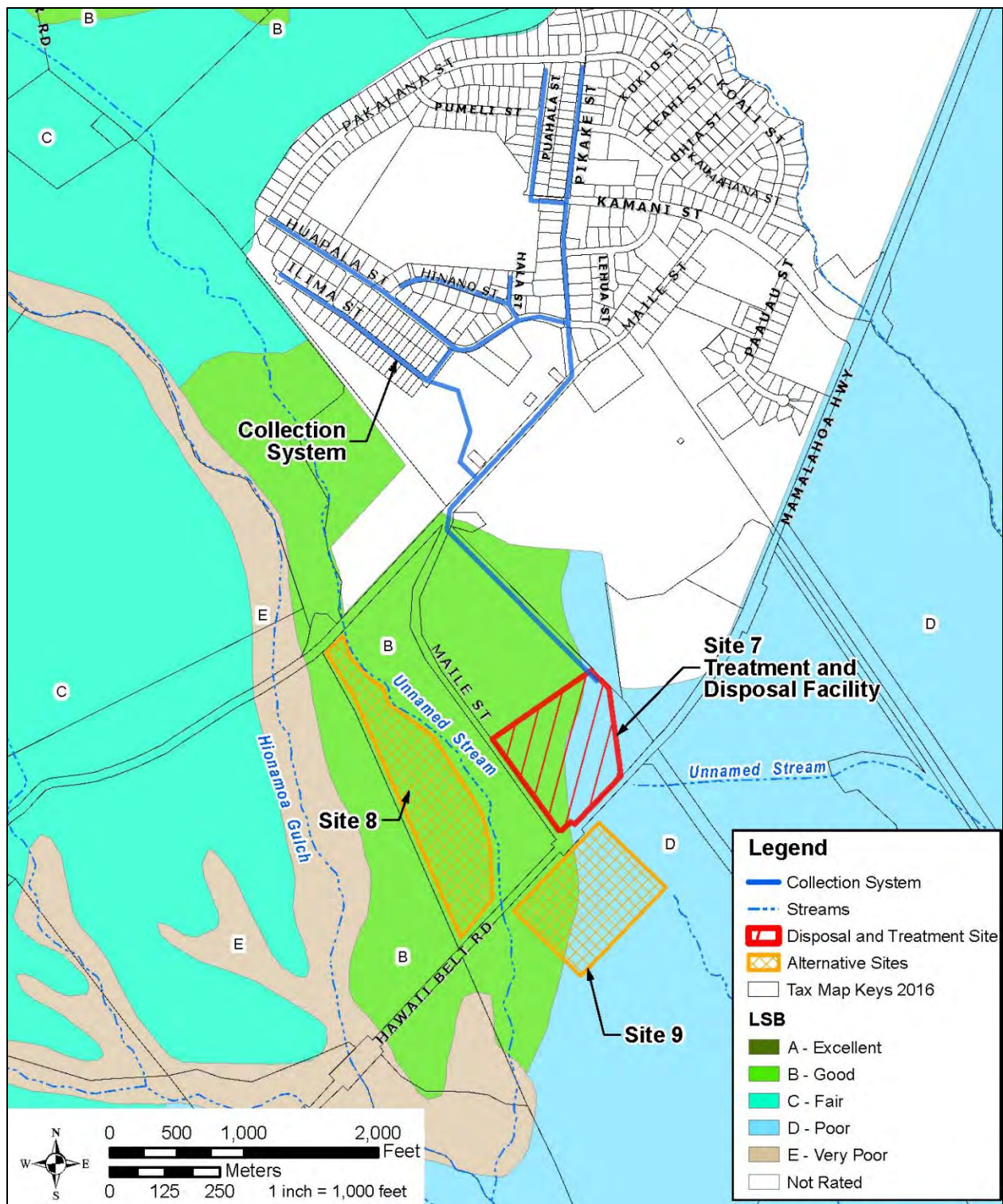
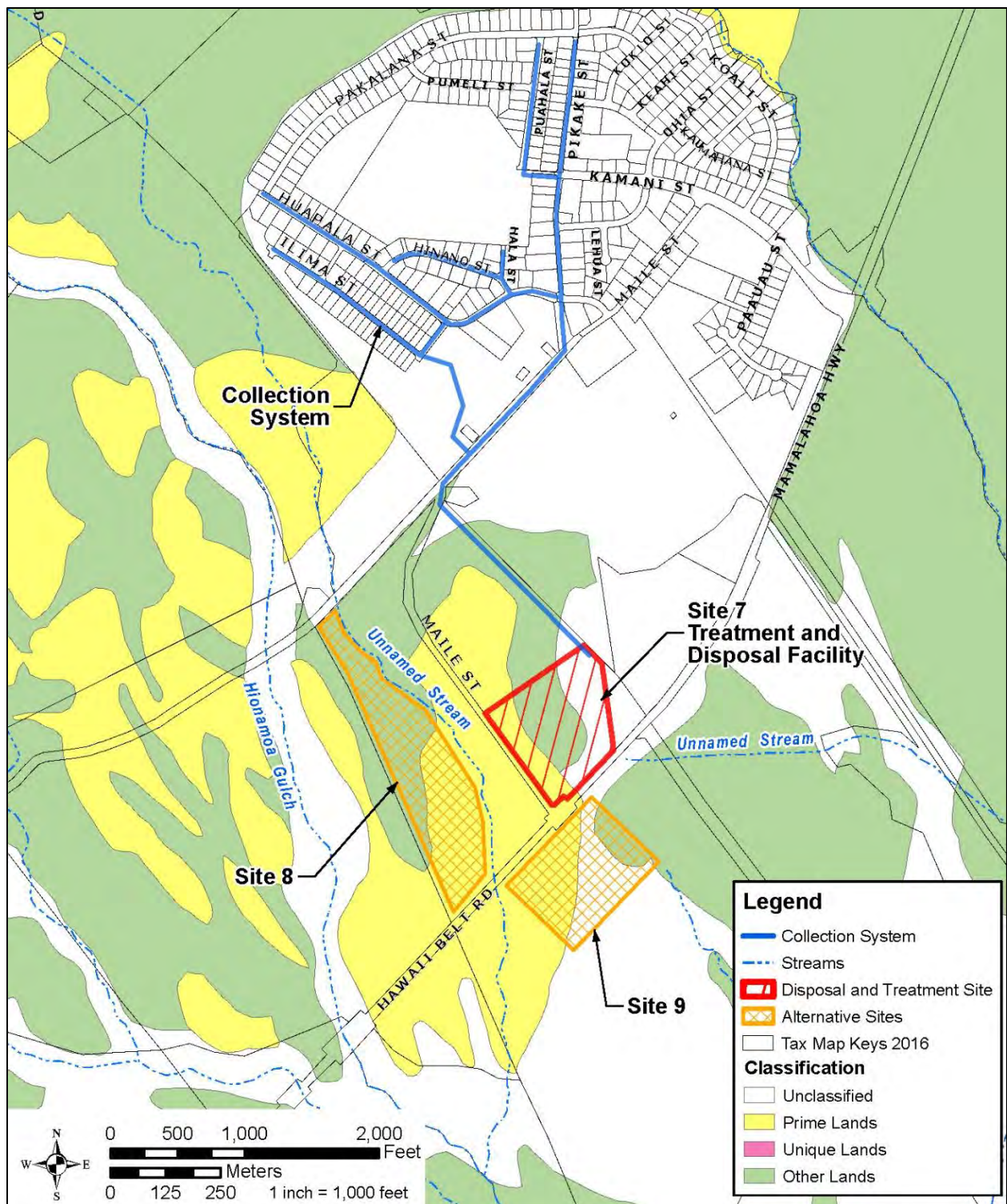


Figure 3.2. Pāhala Area Land Study Bureau (LSB) Ratings Map





**Figure 3.3. Pāhala Area Agricultural Lands of Importance to the State of Hawai'i (ALISH) Classification Map**

### **3.10.2 Impacts and Mitigation Measures**

#### (a) Preferred Alternative (Site 7)

Construction of the collection system within the County roads would not affect agricultural lands or the acreage utilized for the macadamia nut orchard. Construction of the wastewater treatment and disposal facility at Site 7 would require removal of approximately 14.9 acres of macadamia nut trees. This removal would amount to less than 0.1 percent of the total County lands planted with macadamia nut trees, which would not substantially affect the total macadamia nut acreage in the state or the County.

Abandonment of the two LCCs would reduce the potential for contamination of groundwater that is used for irrigation of agricultural lands. Otherwise, abandonment of the LCCs and the existing wastewater collection system would not affect agricultural lands within the affected areas.

See Section 5.8 regarding consistency with the Farmland Protection Policy Act.

#### (b) Alternative Site 8

As discussed above, construction of the collection system within the County roads would not affect agricultural lands or the acreage utilized for the macadamia nut orchard. Construction of the wastewater treatment and disposal facility at Site 8 would require removal of approximately 18.9 acres of macadamia nut trees, which would not substantially affect the total macadamia nut acreage in the state or the County.

Under HRS 205, use of agricultural lands for non-agricultural purposes requires approval of a Special Permit by the County Planning Commission who, for projects greater than 15 acres, submits their decision to the State of Hawai'i Land Use Commission (LUC) for their approval. The LUC approval process involves a presentation by the County and review of comments from the Office of Planning. The Commission can approve the County decision, add, amend, or revise any conditions from the County. The additional time required for the discretionary Special Permit approval would make it difficult for Site 8 to meet the conditions of the AOC.

#### (c) Alternative Site 9

As discussed above, construction of the collection system within the County roads would not affect agricultural lands or the acreage utilized for the macadamia nut orchard. Construction of the wastewater treatment and disposal facility at Site 9 would require removal of approximately 14.9 acres of macadamia nut trees, which would not substantially affect the total macadamia nut acreage in the state or the County.

#### (d) No-Action Alternative

The No-Action Alternative would not impact agricultural lands. Continued operation of the existing LCCs could introduce pathogens and other contaminants to groundwater that is used for irrigation of agricultural lands.

## **3.11 Solid and Hazardous Waste**

### **3.11.1 Existing Conditions**

#### (a) All Alternative Sites

In July 2017, a Phase 1 Environmental Site Assessment (ESA) was prepared for the County of Hawai'i in accordance with best practices and the requirements presented in the American Society for Testing and Materials (ASTM) Standard Practice E 1527-13 (ASTM E 1527-13). The Phase 1 ESA was conducted on the entire 42.5-acre parcel comprising Site 7 (preferred alternative), including the 14.9-acre location for the proposed treatment and disposal facility.

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Details on the Phase 1 ESA objectives and guidelines can be found by reviewing ASTM E 1527-13.

A review was conducted of standard environmental (regulatory) records and specified historical records covering Site 7. A review of historical aerial photographs (1972, 1977, 1985, 1992 and 2001) identified no recognized environmental concerns (RECs). The site was identified as sugar cane land from 1972 to 1977 and was converted to a macadamia nut orchard by 1985.

The surrounding area, including Sites 8 and 9, consisted primarily of sugar cane and vacant land prior to use for macadamia nut production. No properties adjacent to Site 7 had a historical use that would represent a REC.

The Phase 1 ESA concluded no further assessment of the Site 7 parcel and proposed project site for RECs is recommended at this time. While no Phase 1 ESA was conducted for Sites 8 and 9, similar results to those for Site 7 might be expected given their similar historical and current uses.

### **3.11.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

Construction activities would involve the use of equipment containing fuel and other petroleum products that could be hazardous if released. Construction contract documents would require that a Site-Specific Construction BMP plan be prepared, and that materials and equipment to clean up leaks or spills be kept on the project site during construction. In addition, contract documents would include specifications for weekly inspections and reports to ensure the construction activities comply with BMPs. These measures would mitigate adverse impacts to the project site and surrounding area from potential releases of these materials.

The proposed wastewater treatment and disposal facility would have an emergency generator that would use diesel fuel stored in an above-ground double-walled, concrete encased tank. A leak from the inner tanks would be contained in the interstitial space between the walls of the tank. Tanks of this nature are equipped with a monitor system to detect leaks in the inner wall. It is expected that at least a 250-gallon fuel capacity would be required to provide the desired 3-day backup supply of fuel for the proposed project. According to EPA, above-ground double-walled concrete tanks do not require an additional secondary spill containment system around its base. The fuel tank design would incorporate overfill prevention features to minimize potential spills.

Ongoing operation of the proposed collection system and treatment and disposal facility is not expected to result in the creation of any hazardous waste on a regular basis.

The lagoons would need to be cleaned of sludge approximately every 20 years, and the material removed at that point would be substantially degraded from biological activity. Municipal sewage sludge is typically not considered a hazardous waste, and the material would be tested prior to end use or disposal to verify compliance with applicable requirements. The sludge removed from the facility could be landfilled, composted, or applied to land as a soil amendment and fertilizer in accordance with state and federal requirements.

The Proposed Action includes closure of existing LCCs in Pāhala. LCCs are considered underground injection wells and are regulated by EPA and the State of Hawai'i DOH's UIC rules. Under the Proposed Action, the existing LCCs are considered waste management units and would be closed in accordance with DOH UIC regulations.

Abandonment of the existing wastewater collection system would not result in the generation of solid or hazardous waste. Any sanitary wastewater remaining in the existing collection system would be diverted to the new collection system prior to closure.

(b) No-Action Alternative

The No-Action Alternative would maintain the existing LCCs in Pāhala. Under State DOH rules, LCCs are considered waste management wells and are regulated by the DOH UIC program. Ongoing operation of LCCs is no longer allowed by EPA and their closure is mandated.

### 3.12 Flora

#### 3.12.1 Existing Conditions

(a) All Alternative Sites

In August 2018, a botanical field study was undertaken along the streets and areas adjacent to the proposed wastewater collection system and at the preferred location (Site 7) for the proposed wastewater treatment and disposal facility. Botanical field studies were not conducted for Site 8 or Site 9; however, similar results to those for Site 7 might be expected since these sites are also currently used for macadamia nut production. Appendix C shows the Biological Survey Report.

The area surveyed for the proposed collection system is along existing roadways within Pāhala. The survey in these areas indicated the vegetation was composed of maintained yards with ornamental plants.

The field survey for the proposed 14.9-acre wastewater treatment and disposal facility at Site 7 indicated 52 species of vascular plants: two ferns, one gymnosperm, and 49 species of angiosperms (flowering plants). Only two species (*Ipomoea indica* and *Waltheria indica*, 4 percent of the total number of observed species) are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Being widely distributed indigenous species, neither is listed as threatened, endangered, or of any special concern.

The field study indicated no species of plants currently listed or proposed for listing under either federal or State of Hawai'i endangered species regulations were present along the alignment for the proposed wastewater collection system or at the preferred site (Site 7) for the wastewater treatment and disposal facility. The field survey determined that federally delineated Critical Habitat was not present in the Pāhala area. No equivalent designation exists under State law in Hawai'i.

The macadamia nut orchard at Sites 7, 8, and 9 is a valuable commercial botanical resource but not an environmentally sensitive one. Similarly, the Cook pines (*Araucaria columnaris*) that line Maile Street along the western border of Site 7 and elsewhere are considered an important part of the community landscape element.

#### 3.12.2 Impacts and Mitigation Measures

(a) All Alternative Sites

Based on the results of the botanical field study, construction of the new collection system and new wastewater treatment and disposal facility is not likely to cause any adverse impacts on federally or state-listed threatened, endangered, or special concern botanical species in the Pāhala area and would not impact federally delineated Critical Habitat. The Proposed Action would require removal of several of the Cook pines (*Araucaria columnaris*) that line Maile Street along the western border of Site 7. All other Cook pines found elsewhere would be retained with no changes.

On April 23, 2018, as part of the pre-assessment consultation process, the U.S. Fish and Wildlife Service (FWS) provided a letter with recommended measures to avoid and minimize impacts to flora (see letter with reference number 01EPIF00-2018-TA-0275 in Appendix A). On February 15, 2019, EPA and the County of Hawai'i concluded consultation with FWS in accordance with

Section 7 of the Endangered Species Act. This consultation did not identify any potential effects to listed plants; however, the Proposed Action would adhere to additional biosecurity protocols provided by FWS to prevent the introduction of invasive species (see 01EPI1F00-2019-1-0153 in Appendix C-1).

Abandonment of the two LCCs and the existing wastewater collection system would not affect flora within the affected areas.

(b) No-Action Alternative

The No-Action Alternative includes no modifications to the existing LCC system, and therefore would not impact flora.

### 3.13 Fauna

#### 3.13.1 Existing Conditions

(a) All Alternative Sites

##### **Mammalian Survey:**

In August 2018, a biological field survey was conducted for mammalian species at the preferred site (Site 7). With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The biological survey was limited to visual and auditory detection coupled with visual observation of scat, tracks, and other animal signs. The survey identified no mammalian species within the survey area at Site 7. There was also no indication that pigs (*Sus scrofa*) utilize the survey area, despite reports from the community that the area is occasionally used for hunting. The biological survey report is included as Appendix C.

Biological field surveys were not conducted for Site 8 or Site 9; however, similar results to those for Site 7 might be expected since these sites are also currently used for macadamia nut production.

##### **Avian Survey:**

The biological field survey conducted in August 2018 also identified avian species in the Site 7 area. Six avian count stations were sited roughly equidistant from each other; two were placed along the proposed wastewater collection system alignment and four were placed within the proposed location for the 14.9-acre wastewater treatment and disposal facility at Site 7.

The avian survey found a total of 175 individual birds of 13 species representing nine separate families. Avian diversity and densities were very low, which is consistent with the current site use as a mature macadamia nut orchard with limited ground cover and few weedy or shrubby species. All of the recorded avian species are established alien species. No native avian species were recorded during this survey of Site 7. Biological field surveys were not conducted for Site 8 or Site 9; however, similar results to those for Site 7 might be expected since these sites are also currently used for macadamia nut production.

The findings of the avian survey are consistent with the location of Site 7 (and Sites 8 and 9) and the monoculture of macadamia nut trees present at all sites. The field survey report indicated that endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) have been recorded flying over the general area between April and the end of November each year. The petrel is listed as endangered and the shearwater as threatened under both federal and state endangered species statutes. As discussed in the August 2018 report, these seabirds are susceptible to impacts from outdoor lighting, which can result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the

lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

### **3.13.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

The field survey recorded no species of animals currently listed or proposed for listing under either the federal or state endangered species statutes. The preliminary proposed site plan shows no new infrastructure constructed above the existing tree line that could present a hazard to waterbirds.

The operations building at the proposed wastewater treatment and disposal facility would include down-shielded light fixtures mounted below the roof overhang. The light fixtures near the headworks and ultraviolet light (UV) disinfection system would also be down-shielded. These lights would be used only in the event of an emergency at night. All fixtures would meet requirements for outdoor lighting as set forth in HCC 14 (General Welfare). These measures would help avoid or minimize any potential adverse impacts to the Hawaiian Petrel and Newell's Shearwater.

After construction of the wastewater treatment and disposal facility is completed, the new lagoons would potentially attract various species of waterbirds, including the listed Hawaiian coot (*Fulica alai*), the endemic sub-species of the Hawaiian stilt (*Himantopus mexicanus knudseni*), and Hawaiian goose (*Branta (=Nesochen) sandvicensis*). Experience at other County wastewater facilities with aerated lagoons (e.g., the Kealakehe wastewater treatment plant) has demonstrated that the aerated lagoon wastewater treatment process can present a highly attractive breeding area for local bird species.

On April 23, 2018, as part of the pre-assessment consultation process, the FWS provided a letter with information on various avoidance and minimization measures to avoid adverse impacts to listed species (see letter with reference number 01EPIF00-2018-TA-0275 in Appendix A). The letter included measures for the Hawaiian hoary bat, the Hawaiian hawk (*Buteo solitarius*), and Hawaiian goose. FWS also recommended further consultation to determine whether the lagoons, despite their potential attractiveness to nesting seabirds, could represent a sub-optimal breeding environment.

EPA and the County of Hawai'i concluded consultation with FWS in accordance with Section 7 of the Endangered Species Act. On December 21, 2018, the designated non-federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of EPA and the County of Hawai'i, requested concurrence from the FWS that the Pāhala LCC Replacement Project is not likely to adversely affect federally listed threatened and endangered species or critical habitat. On February 15, 2019, the FWS provided a letter that concluded: "The Service has analyzed potential impacts to listed species due to the implementation of [the] project. Based on the inclusion of the avoidance and minimization measures listed above, the Service anticipates that any potential impacts will be discountable or insignificant and therefore we concur that the Pāhala LCC Replacement Project may affect, but is not likely to adversely affect the endangered Hawaiian hoary bat, Hawaiian Hawk, Hawaiian goose, Hawaiian Petrel, Band-rumped Storm-Petrel [(*Oceanodroma castro*)], Hawaiian Stilt, and Hawaiian Coot, and the threatened Newell's Shearwater" (see letter with reference number 01EPIF00-2019-I-0153 in Appendix C-1). The Proposed Action would incorporate the avoidance and minimization measures cited in the FWS letter, including (but not limited to) avoiding impacts to potential Hawaiian hoary bat habitat during

the bat birthing and pup rearing season; conducting a Hawaiian hawk nest survey prior to any work during the nesting season; avoiding activities near active nests; and avoiding nighttime construction during the seabird fledging period. The FWS letter also includes suggestions for biosecurity protocols to prevent the introduction of harmful invasive species into local natural areas and areas with native habitat. These measures would be incorporated into the Proposed Action.

The existing wastewater collection system is an aging system that has flaws and cracks that can provide access to pests such as rats and cockroaches. When the new collection system is installed, the existing system would be plugged, and the subsequent lack of use would reduce available habitat and pest food sources. The new collection system would be more resistant to developing cracks and openings, resulting in fewer opportunities for pests to access the sewer as compared to the existing system.

Closure and abandonment of the existing LCCs would eliminate potential pest attractants. In addition, the wastewater treatment and disposal facility would be located farther from the Pāhala community than the existing LCCs, thus conveying sewage to a more distant facility that would incorporate design elements to reduce attractiveness to pests. These design elements would include features such as appropriate removal and management of waste from screening mechanisms to reduce food sources; use of aerators in lagoons to agitate water sources that otherwise could attract mosquitoes; and intermittent dosing of effluent to avoid standing water in groves. The Proposed Action would not be expected to contribute to pest-related concerns in Pāhala.

Abandonment of the two LCCs and the existing wastewater collection system would not affect fauna within the affected areas.

(b) No-Action Alternative

The No-Action Alternative includes no modifications to the existing LCC system, and therefore would not be likely to impact fauna.

### **3.14 Air Quality**

#### **3.14.1 Existing Conditions**

(a) All Alternative Sites

Ambient air quality standards (AAQS) have been established at both the national (NAAQS) and state level for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). The state has also set a standard for hydrogen sulfide. Hawai'i ambient air quality standards are comparable to the national standards, although in some cases the Hawai'i standards are more stringent than the national standards, such as for carbon monoxide. For some other parameters, such as particulate matter, the national standards are more restrictive.

The DOH operates a network of air quality monitoring stations at various locations around the state. In December 2016, the DOH issued the Annual Summary 2015 Air Quality Data report (the most recent report) which provides the results from the network of air quality monitoring stations. The DOH maintains a monitoring station at the Ka'ū High School and Pāhala Elementary School. Established August 2007, the station was placed to monitor SO<sub>2</sub> and PM<sub>2.5</sub> from volcanic emissions. Criteria pollutant levels remain below federal and state ambient air quality standards throughout the state.

Existing air quality in the project area is affected mostly by air pollutants from vehicular, industrial, natural and/or agricultural activities and processes. Also, volcanic emissions affect air quality on

the Island of Hawai'i more than the other islands in the state. Since 1983, volcanic emissions from eruptions of Kīlauea Volcano have periodically affected the project area.

A recent analysis by the USGS shows the composition of volcanic smog (vog) depends on how much time the volcanic plume has had to react with the atmosphere. In areas closer to the volcano, such as Pāhala, vog contains both aerosols and unreacted sulfur dioxide (SO<sub>2</sub>) gas. SO<sub>2</sub> gas is colorless and invisible, but the tiny particles in vog create a visible light-colored haze by scattering sunlight and thus reduce visibility.

Vog concentrations on the Island are primarily dependent on the amount of SO<sub>2</sub> emitted from Kīlauea, the distance from the source vents, and the wind direction and speed on a given day. From May through September, the main wind direction in the Hawaiian Islands is from the northeast (trade winds) which occur about 80 to 95 percent of the time. Under trade wind conditions, vog travels around the southern part of the island. Most of the vog stays below 6,000 to 8,000 feet above msl, the usual height of the trade wind inversion. This layer of the atmosphere increases in temperature with altitude, inhibiting the rise of cooler, vog-laden air. When trade winds are absent, which occurs most often during winter months, the entire Island, or even the entire state can be affected by vog.

Volcanic eruptions are considered natural events and therefore EPA may exclude the exceedances of the 1-hour NAAQS from attainment determinations.

Consistent with its rural nature, the Pāhala area has no major stationary sources of air pollution. Further, the low level of vehicle traffic on Māmalahoa Highway and on the streets in the community limits mobile sources of emissions.

### **3.14.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

Short-term impacts on air quality could occur during construction of the proposed wastewater collection system and the wastewater treatment and disposal facility. Short-term impacts from fugitive dust emissions would likely occur during the construction phases. To a lesser extent, exhaust emissions from mobile construction equipment, traffic disruption associated with wastewater collection system construction, and from workers commuting to the construction site may also affect air quality during the period of construction. State HAR, 11-60.1 (Air Pollution Control) requires that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan would be implemented to ensure compliance with state regulations. During construction, fugitive dust emissions would be controlled to a large extent by watering of active work areas, the use of wind screens, keeping adjacent paved roads clean, and by covering open-bodied trucks. Other dust control measures may include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing areas where construction is not actively occurring. These dust control measures would be most applicable to construction activities at the wastewater treatment and disposal facility project site.

After construction, motor vehicle traffic from County employees and others visiting the treatment and disposal facility project site would be a minor source of increased air pollutant emissions. As discussed in Section 3.17 (Traffic), management of the facility requires weekly visits by a single operator based in Hilo and any intermittent visits for maintenance purposes. Given the low ambient levels of pollutants and infrequent visits to the facility, any increases would not result in exceedance of federal or state AAQS for the six criteria pollutants.

The treatment and disposal facility would have an emergency standby diesel-powered generator for use during periods of outage of the commercial electrical service. The generator would also



be operated periodically for testing to ensure proper operation. The operation and testing should not cause an exceedance of air quality standards.

Wastewater treatment plants can be a source of nuisance odors to the surrounding community if not properly designed or operated. Typically, nuisance odors are most commonly associated with anaerobic (without oxygen) conditions and with processing of residual solids. Incoming raw sewage flows to the proposed wastewater treatment and disposal facility would first be routed to the headworks, which is the facility where the solids are removed from the flows.

As previously discussed, to mitigate potential nuisance odors, the headworks would be equipped with an odor control system with a GAC scrubber to remove odor. A package GAC scrubber passes the odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon. The County currently operates GAC scrubbers at other facilities, and it has been proven to be an effective means of odor control both locally and nationwide. The treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring under normal operating conditions. The disposal groves would be irrigated with fully treated and aerobic secondary effluent from the treatment process; irrigation with secondary effluent is not associated with development of nuisance odor conditions.

Also, as previously discussed, the aerated lagoon plant design would not result in the migration of aerosols outside of the site boundaries under normal operating conditions. In addition, disinfection processes selectively kill pathogens or render them incapable of reproduction or harm to humans. As outlined in the Preliminary Engineering Report (PER) Section 3.2 (Appendix B), continuous disinfection of the treated effluent would be provided to protect human health and the environment. The land application groves would incorporate a distribution system at the ground surface which will not produce aerosols (Appendix B, Section 4.5.1).

Overall, construction and operation of the wastewater collection system and treatment and disposal facility would not result in significant impacts to air quality of the Pāhala area. Mitigation measures would be implemented, as appropriate, to minimize any potential impacts. By locating the facility at least 0.5 miles away from the developed area of the community (including the Ka'ū High School and Pāhala Elementary School), the Proposed Action would provide a buffer to mitigate potential concerns associated with nuisance odors or aerosol migration that could arise outside of normal operating conditions.

Abandonment of the two LCCs and the existing wastewater collection system would not affect air quality within the Pāhala area.

(b) No-Action Alternative

The No-Action Alternative includes no modifications to the current LCC system, and therefore is not likely to impact ambient air quality in the Pāhala area. Historically, air quality in the Pāhala area has met ambient standards during operation of the LCCs.

### **3.15 Archaeological and Cultural Resources**

#### **3.15.1 Existing Conditions**

(a) Preferred Alternative (Site 7)

A 2016 survey of available information identified the presence of one historic site in the immediate vicinity of the proposed wastewater collection system. In Pāhala, the Ka'ū High and Pāhala Elementary School is listed on the State of Hawai'i register of historic places. No other historic sites were identified within the areas planned for improvements.

In November 2016, as part of the initial planning for LCC closure, the County contracted for a 1-day archaeological field inspection of Site 7, including the preferred location for the proposed wastewater treatment and disposal facility. The purpose of the inspection, which involved pedestrian sweeps of the entire 42.5-acre parcel, was to determine if any historic properties or significant archaeological features were present. The inspection report stated that it is apparent that ground modifications undertaken during the plantation period destroyed any evidence of pre-contact agriculture or settlement activities. Furthermore, bulldozing associated with the creation of the macadamia nut orchard appears to have leveled any plantation-era land features.

The 2016 inspection identified surface artifacts as the only evidence of past human activity on Site 7. Artifacts included a single traditional artifact as well as more numerous late post-contact artifacts. The single traditional artifact was a crudely shaped discoidal hammerstone found on the ground surface near the northern edge of Site 7 near Maile Street. No other cultural material (either traditional or post-contact) was observed in this area, suggesting that the hammerstone reflects an isolated artifact rather than a buried cultural deposit. Given the possible agricultural activity that may have taken place in the region during the pre-contact period, it is not surprising that a traditional artifact was found within the inspection parcel.

The 2016 inspection stated that, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre Site 7 parcel, as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary by SHPD before any development can be initiated. The 2016 inventory report stated that, at minimum, an Archaeological Inventory Survey (AIS) was necessary to fully document, map, date and collect the surface artifacts. It may also be necessary to test for the presence of subsurface cultural deposits through hand excavation or mechanical trenching. The report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel.

Prior to conducting the AIS testing plan, SHPD needed to approve the AIS testing plan. To meet this requirement, the County submitted the AIS plan to SHPD on March 22, 2018. On April 25, 2018, SHPD requested clarification. Responses were submitted to SHPD on July 31, 2018 including the findings from the 2016 field survey report and a map of the proposed wastewater treatment and disposal facility. The map showed that the preferred site for the facility would avoid the area in which the traditional artifact was found during the 2016 inventory.

On August 20, 2018, SHPD approved the AIS plan and, between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with SHPD requirements, with the AIS approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on site. The completed AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with

SHPD as required by Section 106 of the National Historic Preservation Act (NHPA). The AIS was made available to the public on EPA and County websites.<sup>3,4</sup>

The AIS investigation was designed to comply with both federal and State of Hawai'i environmental and historic preservation review requirements. Use of federal (EPA) funding means that the project is a federal undertaking, requiring compliance with NEPA and Section 106 of the NHPA. As a project utilizing County funds, the project is also subject to historic preservation requirements found in HRS § 6E-8 and HAR § 13-275.

The AIS background research related to the collection system identified two properties that were issued State Inventory of Historic Places (SIHP) designations for identification purposes—specifically, the historic Wood Valley Road/Coastal Road corridor (SIHP # 50-10-69-31088) and the historic Volcano Road corridor (SIHP # 50-10-69-31089). Both corridors were assessed as significant under Criterion (d) for yielding important information for research on former rights of way in the history of the Pāhala community. The AIS stated that constructed elements of the portions of these road alignments in the area of the collection system have been thoroughly impacted by the development of modern roadways, becoming Pitake Street (SIHP # 50-10-69-31088) and Maile Street (SIHP # 50-10-69-31089), in Pāhala within the original corridors. Due to the impacts and changes to these roads in Pāhala over time, these historic properties only maintain integrity of location of the old corridor. The AIS concluded SIHP #s -31088 and -31089 are not eligible for inclusion on the National Register of Historic Places or the Hawai'i Register.

As part of the AIS, the entire collection system and wastewater treatment and disposal facility sites were covered in close pedestrian sweeps. The AIS found both project sites have been completely altered by past residential/town and agricultural development. Historic remnants of the sugar plantation are present throughout Pāhala and surrounding the project sites, but these remnants are all located outside the limits of the collection system and the treatment and disposal facility sites.

The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface within the proposed wastewater treatment and disposal facility site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching. Lastly, although outside of the area of potential effect considered in consultation with SHPD, research conducted during the AIS showed a sealed lava tube opening is located east and outside of the proposed wastewater treatment and disposal facility site.

On March 29, 2018, the County, as the EPA designated representative, initiated consultation for this project pursuant to Section 106 of the NHPA. Consultation letters were delivered to invite comments from organizations that may attach religious or cultural significance to properties affected by the Proposed Action. A total of 14 letters were mailed to various Native Hawaiian Organizations (NHOs) requesting comments (see Section 10); no responses have been submitted to the County. The list of NHOs was generated by EPA for NHPA Section 106 and HRS Chapter 6E compliance using the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization Notification List (Updated December 4, 2017). The HRS Chapter 6E determination and Section 106 review packet were submitted to SHPD with the Draft

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<sup>3</sup> On March 11, 2019, the AIS was posted on the EPA web site:  
[https://www.epa.gov/sites/production/files/2019-06/documents/cover-letter-draft\\_archaeological\\_inventory\\_survey\\_pahala\\_wwtp-optim-2019-03-11.pdf](https://www.epa.gov/sites/production/files/2019-06/documents/cover-letter-draft_archaeological_inventory_survey_pahala_wwtp-optim-2019-03-11.pdf).

<sup>4</sup> The AIS was made available for download from the County's website:  
<http://records.co.hawaii.hi.us/weblink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>.

AIS on March 13, 2019. In addition, the County sent a letter to SHPD on October 9, 2019, again requesting acceptance of the previously submitted Draft AIS findings.

On September 23, 2018, notice of availability of the Draft EA was published in the OEQC *The Environmental Notice*. Subsequently, on September 26, 2018, a public notice was published in the *Hawaii Tribune Herald*, *West Hawaii Today* newspapers, and the online *Ka'ū News Brief*. The public notice announced that a public information meeting was to be conducted by the County on October 10, 2018 in Pāhala at the Ka'ū Gym Multi-Purpose Conference Room to discuss the Draft EA as it related to DEM's compliance with HRS 343 requirements. A second part of the meeting addressed Section 106 of the NHPA involving consultation with NHOs and Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, or cultural religious attachment to the proposed project area. During the October 10 meeting, attendees were invited to provide information about the proposed project area. Eight persons placed their names on a sign-in sheet to contribute during the second part of the meeting related to Section 106; however, no comments or information from the public were forthcoming during this meeting.

To request clarification of comments received on the Draft EA, a letter was sent to the Pele Defense Fund requesting information about potential known lava tubes in the project area via certified mail on November 14, 2018 but no response was received.

(b) Alternative Sites 8 and 9

Alternative Sites 8 and 9 have similar existing conditions for historical resources as presented above. Although Sites 8 and 9 were not surveyed, they are both currently used as macadamia nut orchards and thus would be expected to exhibit similar ground modifications as Site 7. The ground modifications from the plantation period would have destroyed any evidence of pre-contact agriculture or settlement activities, in addition to extensive disturbance from bulldozing during creation of the macadamia nut orchard.

### **3.15.2 Impacts and Mitigation Measures**

(a) Preferred Alternative (Site 7)

Based on the AIS, no properties eligible for inclusion on the National Register of Historic Places or the Hawai'i Register are present within the area of potential effects for the Preferred Alternative, and no significant artifacts or cultural deposits on the ground surface and no cultural deposits or lava tubes were encountered during subsurface testing. Thus, in accordance with federal regulations (36 CFR § 800.5), the AIS results support a determination of "no historic properties affected." Further, under HRS § 6E-8 and in accordance with HAR § 13-275-7(a)(1), the County of Hawai'i DEM's project effect determination is "no historic properties affected." Under 54 U.S.C. § 300308, the term "historic property" means any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register.

Based on the above, in accordance with 36 CFR § 800.4(d) EPA reached a finding of "no historic properties affected for the project or undertaking." On September 26, 2019, EPA sent a letter to SHPD to document their determination that no historic properties will be affected by the undertaking and to request concurrence from SHPD. The potential for encountering unexpected archeological resources within the site of the proposed treatment and disposal facility is low due to historical ground modifications and ongoing harvesting activities; however, the Proposed Action would incorporate appropriate mitigation measures should archeological resources be discovered during construction. Specifically, the construction contract documents would state that, should archeological features such as walls, platforms, pavement or mounds, or remains such as artifacts, burial sites, or concentrations of shells or charcoal, be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor would immediately contact SHPD (at 808.981.2979), who would assess the

significance of the find and recommend appropriate mitigation measures, if necessary. The AIS and NHPA Section 106 consultation correspondence can be found in Appendix D and Appendix D-1, respectively.

To date, SHPD has not responded to the County's Draft AIS submittal from March 13, 2019; the EPA letter from September 26, 2019 requesting concurrence with the determination that no historic properties will be affected by the undertaking; or the County's follow-up letter from October 9, 2019 requesting concurrence with the Draft AIS findings. In accordance with 36 CFR § 800.4(d)(1)(i) and as specified in the September 26 letter, because no response was received within 30 days of SHPD receipt of the adequately documented finding, EPA has fulfilled their Section 106 responsibilities for this undertaking. However, construction would not proceed until SHPD has approved the Draft AIS.

Abandonment of the two LCCs and the existing wastewater collection system would not affect archaeological and cultural resources within the affected areas.

(b) Alternative Sites 8 and 9

Under these alternatives, the potential impacts to archaeological and cultural resources and the necessary impact avoidance and minimization measures would likely be similar to those described above for the Preferred Alternative (Site 7). If Site 8 or Site 9 are selected for development, an AIS, including subsurface testing, would be conducted to confirm the presence or absence of resources on the proposed wastewater treatment and disposal facility site. If archaeological sites are discovered during construction, work would cease and SHPD would be contacted (at 808.981.2979) to determine appropriate mitigation measures, if necessary. EPA and the County of Hawai'i would consult with SHPD in accordance with Section 106 of the NHPA and would incorporate impact avoidance and minimization measures as necessary to result in a finding of no adverse effects to historic properties.

(c) No-Action Alternative

The No-Action Alternative would not result in any disturbance to land within the Pāhala area and is therefore not expected to have any adverse impacts on archaeological or cultural resources.

### **3.16 Socioeconomic Characteristics**

#### **3.16.1 Existing Conditions**

(a) All Alternative Sites

In March 2017, the State of Hawai'i Department of Business, Economic Development and Tourism released 2016 population estimates for the state and counties. This analysis estimates that Hawai'i County had a resident population of 198,449 persons in 2016, which represents an annual increase of 1.2 percent from 2010.

The U.S. Census Bureau provides the American Community Survey (ACS), which updates selected demographic, social, and economic information for various years. This includes age, racial composition, and economic information, including employment and household income by Census Designated Place for several locations in Hawai'i County. The version of the ACS referenced is the 2012-2016 5-Year Estimates, released in 2017. See Table 3.1 below.

The ACS shows the Pāhala population has a similar age distribution to Hawai'i County, although Pāhala has a higher proportion of individuals in the "Under 5 to 19" age category, 28.5 percent compared to 24.4 percent for the County. The median age for Pāhala is 42.4 years compared to 41.8 years for the County.

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities than the County at large. The racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.

Pāhala has a higher proportion of residents that have completed high school and some college than the County overall, but a lower proportion with college degrees (bachelor's and graduate or professional degrees). From an economic perspective, Pāhala generally has more households in lower income brackets than the County, and a lower median household income.

Lastly, Pāhala had a higher proportion of employment in agriculture, forestry, fishing, hunting, and construction (31.9 percent), and in education and health care (22.1 percent), compared to the County (12.6 percent and 19.7 percent, respectively).

A subset of social resources is environmental justice. Environmental justice considers sensitive populations, such as children, minorities, and low-income communities. Sensitive populations are identified in two Executive Orders (EOs):

- EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, serves to avoid the disproportionate placement of adverse environmental, economic, social, or health impacts from federal actions and policies on minority and low-income populations.
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that federal agencies will identify and address environmental health and safety risks from their activities, policies, or programs that may disproportionately affect children.

As noted above and in Table 3.1 below, Pāhala has a higher proportion of low-income, minority, and children residents as compared to the County as a whole. For purposes of this assessment, and to correspond with the available ACS demographic characteristic data, "low income" is defined as having a household income of less than \$24,999; "minority" is defined as any race population other than White; and "children" is defined as the "Under 5 to 19" age category.

### **3.16.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

In the short term, construction projects under the Proposed Action would require a number of contractors and their subcontractors. Construction contract documents would reference HRS 103B, which requires the contractor (including subcontractors) to include not less than 80 percent Hawai'i residents in the work force. This would limit the importation of workers from outside the local area and the associated increase in demand for local housing.

The Proposed Action would generate employment as the contractor would need workers to undertake construction of the improvements for the wastewater collection system and the wastewater treatment and disposal facility. This employment would generate wages and salaries paid to the contractor and subcontractor work forces. The wages and salaries paid to the work force would in turn generate purchases of goods and services, which would result in taxes paid to the State of Hawai'i. In addition, the contractor and their subcontractors would need to purchase equipment, supplies, and materials, some of which would be purchased from local suppliers and vendors. Direct purchases of equipment, supplies, and materials by the contractor would also generate taxes. Overall, the Proposed Action would result in positive employment benefits which would result in higher levels of income and overall economic benefits to the local economy.

**Table 3.1  
Demographic, Economic, and Social Characteristics of Pāhala and Hawai'i County**

Item	Pāhala		Hawai'i County	
	Total	Percent	Total	Percent
<b>Demographic Characteristics</b>				
Total population	1,341	-----	193,680	-----
Under 5 to 19 years	382	28.5	47,258	24.4
20 to 34 years	193	14.4	34,475	17.8
35 to 59 years	306	22.8	61,978	32
60 to 74 years	367	27.4	36,993	19.1
75 years and over	94	7.0	13,170	6.8
Median age	42.4	-----	41.8	-----
<b>Race</b>				
White	106	7.9	64,255	33.2
African American (incl. American Indian/Alaska Native)	0	0.0	1,897	1.0
Chinese	10	0.7	1,844	1.0
Filipino	484	36.1	17,794	9.2
Japanese	54	4.0	17,981	9.3
Other Asian	46	3.4	3,722	1.9
Native Hawaiian	50	3.7	20,980	10.8
Other Pacific Islander	18	1.3	4,725	2.4
Some other race	1	0.1	3,230	1.7
2 or more races	572	42.7	54,564	28.2
<b>Social Characteristics</b>				
Less than 9 <sup>th</sup> grade	98	10.9	3,681	2.7
High school to HS graduate	489	54.5	50,586	37.3
Some college to associate degree	204	22.7	43,761	32.3
Bachelor's degree	97	10.8	24,704	18.2
Graduate or professional degree	10	1.1	12,649	9.3
<b>Household Income Characteristics</b>				
Less than \$24,999	130	33.6	17,337	26.3
\$25,000 to 49,999	73	18.9	13,615	20.6
\$50,000 to \$99,999	126	32.6	20,291	30.7
\$100,000 to \$199,999	48	12.4	12,201	18.5
\$200,000 or more	10	2.6	2,563	3.9
Median household income	\$47,625	-----	\$53,936	-----
<b>Employment Characteristics</b>				
Agriculture, forestry, fishing and hunting	120	26.2	3,713	4.4
Construction	26	5.7	6,806	8.2
Manufacturing and wholesale-trade	0	0	3,701	4.4
Retail trade	16	3.5	10,858	13.0
Transportation, warehousing, and utilities	14	3.1	4,250	5.1
Information tech, finance, insurance, and real estate	9	2.0	5,677	6.8
Professional, scientific, and technical services	48	10.5	8,709	10.4
Education and health care	101	22.1	16,437	19.7
Arts, entertainment, recreation	75	16.4	13,316	16.0
Other services, public administration	49	10.7	10,015	12.0

Source: 2012-2016 American Community Survey (5-Year Estimates) Hawai'i Geographic Area Profiles – Census Designated Places: Neighbor Islands.

The Proposed Action is not likely to directly impact long-term employment or education trends because the wastewater operator would likely be based in Hilo or Kona, meaning the project would not involve long-term relocation of any staff to Pāhala. Additionally, the proposed wastewater collection system and treatment and disposal facility would not be designed to encourage or accommodate substantial population growth in Pāhala.

Despite the relatively high proportions of low-income, minority, and children residents in Pāhala compared to the County overall, the Proposed Action would not result in disproportionately high and adverse human health or environmental effects on these sensitive populations. As discussed in Section 2.3.1 and Section 3.14.2, the design and location of the proposed wastewater treatment and disposal facility would minimize odor and air quality impacts. Construction of the wastewater collection system would result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However, as discussed in Section 3.18.2, construction activities within the community would comply with provisions of HAR 11-46 (Community Noise Control). This includes obtaining a noise permit for any activities that would generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit would limit excessive noise sources to daytime hours; would require the use of best available control technology to control noise levels from excessive noise sources; and would require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, the Proposed Action is expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater treatment system.

The financial impact of the project on individual newly accessible property owners (due to the requirement to connect to the new wastewater collection system, per HCC § 21-5) was raised by the community during the December 2017 public meetings and the October 2018 public meeting for the Draft EA. Although not required by HAR 11-200, the County voluntarily convened an additional public meeting on March 21, 2019 to gain further input from newly accessible property owners and fulfill a County commitment made in October 2018 to research and provide financing options available to owners of parcels that would become newly accessible to the County collection system. Available programs discussed included:

- U.S. Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program – Community Block Grant Program, and
- U.S. Department of Agriculture – Rural Development (USDA-RD) Program.

As noted during the March 2019 presentation, these programs may change in the coming years and additional options may be added to this preliminary list. Hawai'i Legislature, Senate Bill 221 SD1, which could amend HRS 342D to establish a low-interest loan program offering financial assistance to cesspool owners to connect to wastewater treatment systems approved by the DOH, was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

Abandonment of the two LCCs, which do not require substantial maintenance and operation, and abandonment of the existing wastewater collection system would have no impact on socioeconomic resources within Pāhala.

(b) No-Action Alternative

The No-Action Alternative includes no modifications to the current sewage system, and therefore is not expected to impact socioeconomic or demographic conditions in the Pāhala area.



### **3.17 Traffic**

#### **3.17.1 Existing Conditions**

(a) All Alternative Sites

Māmalahoa Highway (State Highway Route 11) is the major north-south roadway for the Pāhala area. This minor arterial highway provides two lanes, one lane in each direction, and shoulders within a 60-foot ROW. Pāhala is located about 51 miles south of Hilo and has two major access roads, Kamani Street on the northern end and Maile Street on the southern end.

In November 2010, State of Hawai'i Department of Transportation (DOT) conducted the most recent traffic counts on Māmalahoa Highway at the Pā'au'au Bridge, mile marker 51.32, located just north of Kamani Street. The counts provide 24-hour and peak-hour counts for traffic in both directions. The 24-hour period counts show a total two-way volume of 2,449 vehicles, with 1,212 vehicles southbound and 1,237 vehicles northbound. The peak morning hours occurred between 7:00am to 8:00am and had a total two-way volume of 186 vehicles with 108 vehicles southbound and 78 vehicles northbound. The peak afternoon hours occurred between 4:00pm to 5:00pm and had a two-way volume of 219 vehicles with 104 vehicles southbound and 115 vehicles northbound.

Within Pāhala, vehicle traffic primarily occurs on streets under the jurisdiction of the County of Hawai'i. The streets typically carry two-way traffic, one lane in each direction, within roadways with improved surfaces of 22 to 24 feet wide with no curbs and sidewalks. The shoulders consist mostly of grass swales which also serve to carry surface runoff along with the streets. These roadways carry vehicle traffic from adjacent and nearby residential areas. As a result, the traffic volumes are relatively low, which is consistent with traffic generation by a rural community.

The wastewater collection system and the wastewater treatment and disposal project site are located outside of the Māmalahoa Highway ROW.

#### **3.17.2 Impacts and Mitigation Measures**

(a) Preferred Alternative (Site 7) and Alternative Site 8

Under these two alternatives, the wastewater collection system and the wastewater treatment and disposal facility would be located outside of the Māmalahoa Highway ROW and would not require any disturbance or other impacts within the Māmalahoa Highway ROW. However, work on the collection system would require excavation of open trenches within the ROWs of several other roads within the Pāhala community (Maile, 'Ilima, Huapala, Hīnano, Hala, Puahala, Pīkake, and Kamani Streets). The contractor would be required to obtain permits to work within the County ROW and implement traffic control plans in the area of each open trench site that provide procedures for controlling traffic in the work area, including the placement of Manual on Uniform Traffic Control Device compliant signs, traffic delineators or barriers, lane closures, flaggers to direct traffic, and special duty officers to oversee conditions at the site. The traffic control plans would provide directions to temporarily divert traffic or close travel lanes during the construction period and would include measures to allow for emergency access during construction. Normally, such plans call for these diversions or closures during non-peak travel times to minimize disruptions to traffic flow. Typically, one traffic lane is kept open for two-way traffic during working hours and two lanes are kept open after hours. When not in use, trenches would be covered with steel plates or surrounded by traffic barriers to prevent accidents. The County would be required to approve any traffic control plans. Any scheduled road closures would be required to be coordinated at least two weeks in advance with the Police Department for County approval. Additionally, the County would coordinate with the DOE Student Transportation Services Branch

Manager and the School in order to minimize construction-related impacts to student transportation services.

Construction of the proposed wastewater treatment and disposal facility would require transport of construction equipment and supplies to the construction site, including excavators and other heavy equipment. Deliveries to the construction site could require temporary stoppage of traffic on Maile Street to safely unload equipment and supplies. To minimize traffic disruptions, contractors typically try to conduct these activities during off-peak traffic hours. No long-term road closures would be required.

The wastewater treatment and disposal facility would require only weekly visits by a single operator based in Hilo or Kona and intermittent visits for maintenance purposes. As such, no impacts to traffic are expected from wastewater treatment and disposal facility staff. Sludge removal would occur approximately every 20 years, so no impacts to traffic are expected due to truck activity associated with sludge removal.

Abandonment of the two LCCs and the existing wastewater collection system would not affect transportation within the Pāhala area.

Information regarding project schedules, including EPA compliance dates, project updates and milestones, can be found on the EPA website at: <https://www.epa.gov/uic/county-hawaii-administrative-order-consent-closure-cesspools-pahala-and-naalehu>. The County will also provide information about the construction schedule for the treatment and disposal facility and the collection system to the DOE Facilities Development Branch Public Works Administrator on request.

(b) Alternative Site 9

Transportation impacts under this alternative would be identical to those for the Preferred Alternative (Site 7) and Site 8, except it would require construction of piping and other utilities within the Māmalahoa Highway ROW to provide connections to the new wastewater treatment and disposal facility in Site 9. This would require obtaining an easement from the State DOT for work within the highway ROW and could delay the start of construction.

(c) No Action Alternative

The No-Action Alternative would not impact traffic in the Pāhala area because no modifications to the current system would be made.

### **3.18 Noise**

#### **3.18.1 Existing Conditions**

(a) All Alternative Sites

The A-weighted decibel scale (dBA) is a logarithmic scale generally used to measure noise levels because it can account for the sensitivity of the human ear across the frequency spectrum. The Occupational Safety and Health Administration (OSHA) regulates workplace noise with standards for two different types of noise: constant and impulse. The OSHA limit for constant noise is 90 dBA for eight hours; however, the National Institute for Occupational Safety and Health recommends a constant noise limit of 85 dBA for eight hours to minimize hearing loss induced by occupational noise. The OSHA maximum sound level for impulse noise is 140 dBA. In areas where workplace noise exceeds these sound levels, employers must provide workers with personal protective equipment to reduce noise exposure.

HAR 11-46 (Community Noise Control) sets forth various permissible sound levels by zoning districts or land uses. According to HAR § 11-46-3 and § 11-46-4, Class A zoning districts include

all areas equivalent to lands zoned as residential, conservation, preservation, public space, open space, or similar type. Class B zoning districts include all areas equivalent to lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type. Class C zoning districts include all areas equivalent to lands zoned agriculture, country, industrial, or similar type.

All alternative sites for the proposed wastewater treatment and disposal facility are in Class C zoning districts. The proposed wastewater collection system would primarily be located in Class A zoning districts. The maximum permissible sound levels in each zoning district are presented below in Table 3.2 and apply to stationary noise sources and equipment related to agricultural, construction, industrial activities.

<b>Table 3.2 Permissible Sound Levels by Zoning District</b>		
<b>Zoning District</b>	<b>Daytime: 7am to 10pm</b>	<b>Nighttime: 10pm to 7am</b>
Class A	55 dBA	45 dBA
Class B	60 dBA	50 dBA
Class C	70 dBA	70 dBA

HAR 11-46 recognizes that construction noise must often exceed the established permissible sound levels and provides procedures by which an applicant may obtain a noise permit from DOH for excessive noise sources. The DOH may consider several factors in determining whether to grant the noise permit, including (but not limited to) the use of best available control technology to control noise levels; the extent and impact of nighttime activities; notification of the public of planned nighttime construction activity; and whether the noise emitting activity is in the public interest.

According to HAR § 11-46-5(4) (Exemptions), the operation of emergency generators can be exempted if they are installed and used as required for the purpose of protecting public health and safety.

There are no current significant sources of noise impacting the proposed project areas. The proposed wastewater treatment and disposal facility would be located in active macadamia nut orchards where the primary source of noise is ongoing orchard operations. The proposed wastewater collection system would primarily be located in residential areas with background noise levels typical of a residential zone.

### **3.18.2 Impacts and Mitigation Measures**

#### **(a) All Alternative Sites**

In the short term, noise levels would increase in the Pāhala area due to construction activities along the wastewater collection system and at the site of the proposed wastewater treatment and disposal facility. Noise is expected to be intermittent and unavoidable because construction vehicles and heavy equipment generate noise as part of normal operations. Mitigation of noise from construction activities to inaudible levels is not practical in all cases due to the intensity and exterior nature of the work. Depending on the results of geotechnical surveys, construction of the collection system and the wastewater treatment and disposal facility could involve excavation to a depth that would require removal of bedrock. If necessary, this would likely be accomplished by using backhoe-mounted hydraulic and/or pneumatic hammers to break up the bedrock for removal, resulting in temporarily elevated impulse noise levels.

Construction activities for the Proposed Action would need to comply with provisions of HAR 11-46 (Community Noise Control). The majority of construction activity would occur during daytime hours, and construction at the site of the proposed wastewater treatment and disposal facility is not expected to result in exceedances of the 70 dBA Class C zoning district noise threshold outside of the property boundary or in residential areas. However, construction of the collection system would take place near residences in the Pāhala community. The construction contractor would be required to obtain a noise permit for any activities that would generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit would limit excessive noise sources to daytime hours; would require the use of best available control technology to control noise levels from excessive noise sources; and would require the applicant/contractor to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Further, the *Noise Reference Manual, Big Island Edition* also limits the use of certain types of equipment to hours of 9:00 a.m. to 5:30 p.m. Monday to Friday. DOH would be expected to grant the noise permit because the Proposed Action is in the public interest. After a permit has been issued, the contractor may request a modification the permit.

Construction contract documents would require that workers are provided with, and wear, appropriate personal protective equipment to reduce noise exposure to below the OSHA maximum sound level.

After construction, the proposed wastewater treatment and disposal facility is not expected to be a significant source of additional ambient noise during routine operation. Operational noise would be confined to the aerators within the lagoons, emergency generator operation, and vehicle movements at the facility. HAR 11-46-5(4) exempts operation of emergency generators from the provisions of HAR 11-46 when installed and used as required and necessary for the protection of public health and safety, provided the best available control technology is implemented. Emergency generator operation would occur only during emergencies and periodic testing and thus would be infrequent. In addition, construction and operation of the proposed wastewater treatment and disposal facility would not be anticipated to have any direct or indirect noise impact on the Ka'ū High School or Pāhala Elementary School, due to the distance between the proposed facility and the schools. Therefore, the Proposed Action is not likely to create an adverse impact to the noise environment in the Pāhala area.

Abandonment of the two LCCs and the existing wastewater collection system would not affect the noise environment in the Pāhala area.

(b) No-Action Alternative

The No-Action Alternative involves no construction activities or changes to the current system. Therefore, no impacts to the noise environment in the Pāhala area would occur.

### **3.19 Visual Considerations and Light Pollution**

#### **3.19.1 Existing Conditions**

(a) All Alternative Sites

The February 2005 County General Plan identified a number of sites as important visual resources contributing to the natural beauty of the Ka'ū District. These visual resources typically consist of scenic resources including major land forms, open spaces, viewing points, scenic drives, and other physical features. The natural beauty of the landscape in the southern part of the Ka'ū District is characterized by vistas from the mountain slopes to the oceans. The coastline is highlighted by Manuka Bay, Green Sands Beach, and Punaluu Black Sand Beach. Some of the natural beauty sites identified in the Ka'ū District most pertinent to the Pāhala area include: 1)

view of Mauna Loa from the highway; 2) scenic view of the shoreline between Pāhala and Punaluu; and 3) the lava flows of 1868, 1887, and 1907.

The Pāhala community consists almost entirely of single-family residential units and the related utility lines that service the homes. Generally, residential units are set back from the adjacent roadway so the views of nearby areas are not obstructed.

Exterior lighting is often used to enhance the safety and security of persons and property. Excessive and inappropriate exterior lighting, however, can generate light pollution. As described in Section 3.13.1, outdoor lighting can also result in adverse effects to seabirds by attracting them at night and causing disorientation, fallout, and injury or mortality. The County of Hawai'i regulates outdoor lighting under HCC Section 14-50. Streets in the Pāhala community are lined with street lights mounted on utility poles. The three alternative sites for the proposed wastewater treatment and disposal facility (Sites 7, 8, and 9) are used for macadamia nut production, with no existing outdoor lighting.

### **3.19.2 Impacts and Mitigation Measures**

#### **(a) Preferred Alternative (Site 7)**

The Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. The wastewater collection system would be installed below the streets and therefore would not impact views. The operations building, headworks cover structure, UV disinfection system cover structure, and low berms or walls around the basins would be the only above-grade structures and would not exceed 25 feet in height. The existing Cook pine trees along Maile Street, most of which would remain with no changes, would continue to obstruct the viewplanes from Maile Street. The facility site would be adjacent (mauka) to, and visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane would be mitigated by the planted trees in the disposal groves and by the rise in elevation between the highway and the facility.

Exterior lighting at the proposed wastewater treatment and disposal facility would be designed in accordance with HCC Section 14-50 and would be limited to manually switched lights under the roof overhang at the entrance to the operations/electrical building, at the headworks area, and at the UV disinfection system. Lights would be installed with down-shielding to prevent excess light pollution. When authorized personnel are not present on site, lights would not be on. Also, per consultation with FWS to avoid impacts to seabirds, nighttime construction activities would not take place during the seabird fledging period (September 15 to December 15). In addition, construction and operation of the proposed wastewater treatment and disposal facility would not be anticipated to have any direct or indirect visual impacts on the Ka'ū High School or Pāhala Elementary School, due to the distance between the proposed facility and the schools.

Abandonment of the two LCCs and the existing wastewater collection system would not affect visual resources or light pollution within the affected areas.

#### **(b) Alternative Sites 8 and 9**

Under Alternative Sites 8 and 9, the visual and light pollution impacts and mitigation measures would be similar to those discussed above for the Preferred Alternative (Site 7). Pine trees would be maintained between the wastewater treatment and disposal facility and public views from the adjacent streets to minimize visual impacts, except where necessary to accommodate the driveway into the facility. The planted trees in the proposed slow-rate land application basins would partially replace removed trees and exterior lighting at the facility would be minimal.

(c) No-Action Alternative

The No-Action Alternative would not change the current conditions in the Pāhala area and no visual impacts would occur.

### **3.20 Public Services – Police Protection**

#### **3.20.1 Existing Conditions**

(a) All Alternative Sites

The Hawai'i County Police Department provides police services to the Ka'ū District, which includes Pāhala and other nearby communities. A single police station is located in Nā'ālehu, which serves the entire Ka'ū District. The Ka'ū Patrol District encompasses 700 square miles and is bound by the Kona District at Kaulanamauna and the Puna District at Keauhou Landing. Its officers operate out of a central station in Nā'ālehu and a substation in Hawai'i Ocean View Estates subdivision.

#### **3.20.2 Impacts and Mitigation Measures**

(a) All Alternative Sites

The Proposed Action is expected to create no additional demand for police protection and related services since it will not increase the resident population or visitors to the area. The Proposed Action should have minimal impact on the police department's operations or ability to provide adequate protection services to the surrounding community. If necessary, off-duty police staff may be hired to assist with directing traffic during construction activities.

Operation of the proposed wastewater treatment and disposal facility is not expected to impact the Police Department. The facility would have a security fence around the perimeter with a locked entry gate.

Abandonment of the two LCCs could reduce the need for police protection services to handle public health threats in the event that there is damage to the LCCs (e.g., from volcanic or seismic activity). Otherwise, abandonment of the two LCCs and the existing wastewater collection system would not affect police protection services in the County.

(b) No-Action Alternative

The No-Action Alternative would not impact police protection services due to continued operation of the existing LCCs. In the event that there is damage to the LCCs from some unforeseen event (e.g., volcanic or seismic activity), police protection services may be required to handle public health threats resulting from damage to the LCCs.

### **3.21 Public Services – Fire Protection**

#### **3.21.1 Existing Conditions**

(a) All Alternative Sites

Fire protection and related services are provided from a fire station located in Pāhala. The station and a volunteer station provide 24-hour fire protection and emergency medical services (EMS). The County has contracted with the State DOH for emergency medical ambulance services.

#### **3.21.2 Impacts and Mitigation Measures**

(a) All Alternative Sites

The proposed wastewater treatment and disposal facility would include a fire protection line to be used in the event of a fire. The emergency generator would include a double-walled diesel fuel tank of a type allowed by the County. The Proposed Action would not affect the operations of fire

protection and EMS services in Pāhala and the proposed wastewater treatment and disposal facility would not require additional fire protection services on site. The construction plans would be submitted to the Fire Department for review during the project design phase.

The treatment and disposal facility would be designed according to National Fire Prevention Association (NFPA) 820 "Standard for Fire Protection in Wastewater Treatment and Collection Facilities." In accordance with Hawai'i Fire Department requirements, Fire Department access and water supply to the proposed Site 7 would be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by the County.

Abandonment of the two LCCs could reduce the need for fire protection services to handle public health threats in the event that there is damage to the LCCs (e.g., from volcanic or seismic activity). Otherwise, abandonment of the two LCCs and the existing wastewater collection system would not affect fire protection services in the County.

(b) No-Action Alternative

The No-Action Alternative would not impact fire protection services due to continued operation of the existing LCCs. In the event that there is damage to the LCCs from some unforeseen event (e.g., severe flood, volcanic or seismic activity), fire protection services may be required to handle public health threats resulting from damage to the LCCs.

### **3.22 Infrastructure – Water System**

#### **3.22.1 Existing Conditions**

(a) All Alternative Sites

The County of Hawai'i Department of Water Supply (DWS) provides water service to the Pāhala community from groundwater sources. The water lines are primarily located along or under the roadways in the area. In response to the pre-assessment notification, on April 5, 2018, the DWS noted that the wastewater treatment and disposal facility site is not serviced by the DWS. The nearest point of connection to the DWS system is at an existing 6-inch waterline at the intersection of Huapala Street and Maile Street, approximately 2,000 feet northeast of Site 7. Sites 8 and 9 are an additional 1,600 to 3,200 feet, approximately, from the DWS connection point.

All alternatives would be designed according to NFPA 820 "Standard for Fire Protection in Wastewater Treatment and Collection Facilities." In accordance with Hawai'i Fire Department requirements, Fire Department access and water supply to the proposed Site 7 would be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by the County.

#### **3.22.2 Impacts and Mitigation Measures**

(a) Preferred Alternative (Site 7)

The proposed wastewater treatment and disposal facility would require new potable water and fire protection lines. Water would be provided by extending the existing DWS water main and by installing a service line to connect the new facility (specifically, the headworks operations building) to that extended water main. The lines would require trenching, primarily on Maile Street, and construction plans would identify the horizontal and vertical clearances required to avoid existing water system and collection system lines. As required by DWS, construction plans would show the estimated maximum daily water usage calculations prepared by a professional engineer licensed in the State of Hawai'i. After review of the calculations, DWS would determine if enough water is available and a water commitment could be issued.

Abandonment of the two LCCs and the existing wastewater collection system would not affect water system infrastructure in Pāhala.

(b) Alternative Sites 8 and 9

Under Alternative Sites 8 and 9, the water system infrastructure impacts and mitigation measures would be similar to those described above for the Preferred Alternative (Site 7). Compared to Site 7, approximately 1,600 feet of additional pipe within the ROW of Lower Maoula Road would need to be installed to provide Site 8 with potable water and fire protection lines. To provide Site 9 with potable water and fire protection lines, approximately 3,200 feet of additional pipe within the ROW of Maile Street and across Māmalahoa Highway would need to be installed.

(c) No-Action Alternative

The No-Action Alternative includes no modifications to the existing water infrastructure, and therefore would not cause any impacts to the water system in Pāhala.

### **3.23 Infrastructure – Drainage System**

#### **3.23.1 Existing Conditions**

(a) Preferred Alternative (Site 7)

There is no existing County stormwater drainage system in Pāhala. Existing stormwater runoff from the Pāhala District generally collects along the paved roadways within each subdivision and sheet flows towards Māmalahoa Highway, then disperses into open swales or grassed areas.

Current drainage patterns at the preferred site (Site 7) are influenced by two existing culverts that allow stormwater to flow across the Māmalahoa Highway in the vicinity of the proposed wastewater treatment and disposal facility, as depicted in Figure 3.4. The first is a box culvert located at the intersection with Maile Street that conveys stormwater under the highway. The second culvert is located approximately 600 feet east of the Maile Street intersection and was used to convey sugar mill flume water across the highway for disposal. The site slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

(b) Alternative Sites 8 and 9

Similar to Site 7, Alternative Sites 8 and 9 slope from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end. For Site 8, the flows are eventually interrupted by Māmalahoa Highway where they may be diverted to other culverts along the road to the areas below (makai) the highway. The unnamed branch of Hi'onamoa Gulch crosses the Site 8 parcel from northwest to southeast near the center of the parcel and creates a depression or incision in the topography that may influence site drainage.

For Site 9, the surface flows pass through the existing orchard and continue downgradient to areas south of Site 9 that contain a larger extent of the same orchard. Two unnamed south-flowing branches of Hi'onamoa Gulch cross portions of the Site 9 parcel. Also, an unnamed east-flowing branch of Pā'au'au Gulch originates in the Site 9 parcel near the southeast boundary of the Site 7 parcel; this branch flows into Pā'au'au Gulch approximately 4,000 feet east of the Site 9 parcel. These features also influence the topography and existing drainage at Site 9.





**Figure 3.4. Stormwater Culverts Near Site 7**

### **3.23.2 Impacts and Mitigation Measures**

#### **(a) Preferred Alternative (Site 7)**

The Proposed Action would incorporate appropriate stormwater and erosion control measures in accordance with approved plans to ensure that soil erosion and transport during construction activities are minimized. Construction of the proposed wastewater collection system would require trenches for new lines, and silt fences or filter socks would be used to minimize runoff from the disturbed area. The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff caused by new impervious surfaces at the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins. Landscape buffers with dirt berms would also be constructed around most of the perimeter of the facility to act as secondary containment in the event of a large storm event. The on-site stormwater management system would meet the requirements of HCC § 27-20, which mandates drainage plans to accommodate runoff caused by the facility for a design storm event.

To meet the requirements of HCC § 27-20 (f), the project “shall not alter the general drainage pattern above or below the development.” Thus, for the design storm event, no increase in flow amount would be directed to either of the culverts at the highway as a result of the site

development. A drainage study would be prepared during the design process to evaluate the improvements necessary to comply with HCC 27 requirements. Construction of the wastewater treatment and disposal facility would create an increase in impervious areas; however, the County standards are intended to protect nearby properties and areas from runoff from a developed area, thus adherence to the County standards would prevent adverse impacts to surrounding properties from new development.

The wastewater treatment processes would be designed to accommodate peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The PER Section 2.2 (Appendix B), outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. Sufficient operational freeboard would be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves would be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability would be conducted during the design process.

The tree groves would be designed in accordance with EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents." Effluent would be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event and ensuring that design flows would not impact surrounding properties.

Stormwater runoff generated mauka of the wastewater treatment and disposal facility would be directed around the perimeter of the site via diversion swales that convey flow back to the existing drainage pattern that flows to the existing culvert at the Maile Street and Māmalahoa Highway intersection. During heavy rain events, stormwater may temporarily back up behind the culvert. Based on the roadway flooding concerns expressed by the community during the Pāhala public information meetings held in December 2017 and October 2018, the State DOT Hawai'i District office was contacted to discuss drainage at the facility site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert and that they have no record of the roadway being inundated by stormwater drainage at the Maile Street and Māmalahoa Highway intersection during precipitation events. There would be no changes to this culvert under the Proposed Action and the proposed facility would not be located within the area of the culvert.

Figure 2.3 shows the intersection of Maile Street and Māmalahoa Highway lies at about 580 feet above msl. Figure 2.2 shows the Pā'au'au Gulch crosses under Māmalahoa Highway about 0.88 miles north of that intersection at approximately 780 feet above msl or about 200 feet higher in elevation than the culvert at the Maile Street and Māmalahoa Highway intersection. Due to this distance and the elevation difference, surface flows at Site 7 would not affect the gulch. Similarly, the Kaimani Street and Māmalahoa Highway intersection lies about 0.84 miles north of the proposed facility and at about 780 feet above msl. Surface flows at the facility would also not affect that intersection.

Abandonment of the two LCCs and the existing wastewater collection system would not affect drainage or runoff in the affected areas.

(b) Alternative Sites 8 and 9

Under Alternative Sites 8 and 9, the stormwater drainage infrastructure impacts and mitigation measures would be similar to those described above for the Preferred Alternative (Site 7). The wastewater treatment and disposal facility design would incorporate appropriate stormwater and erosion control measures similar to those above. However, additional drainage design

considerations or erosion control measures may be needed in order to prevent stormwater runoff from impacting the unnamed branches of Hi'onamoa Gulch that intersect both Sites 8 and 9.

(c) No-Action Alternative

The No-Action Alternative would not result in a change to the impervious area within or near Pāhala and would therefore not lead to an increase in runoff or other impacts to drainage in the area.

### **3.24 Infrastructure – Electrical and Communications Systems**

#### **3.24.1 Existing Conditions**

(a) All Alternative Sites

Electrical services to the Pāhala area are provided by Hawaiian Electric Light Company (HELCO) via pole-mounted overhead lines located along the roadways within the community. The HELCO lines are located along Māmalahoa Highway, leading to a substation west of the intersection of Kamani Street and the highway.

Hawaiian Telcom is the primary telecommunications provider within the County of Hawai'i and has overhead lines for telephone service in the Pāhala community.

#### **3.24.2 Impacts and Mitigation Measures**

(a) All Alternatives

The wastewater treatment and disposal facility would require electrical power. The natural treatment systems proposed require relatively low energy input as compared to other treatment options evaluated. It is anticipated that HELCO would bring overhead power lines to the selected site and supply 480-volt, 3-phase power to the facility via a pole-mounted transformer. This would be connected to a service panel with a meter. The floating surface aerators would consume the majority of the electricity supplied to the site. An electrical room would house the electrical gear and plant control equipment. Exterior lighting at the site would be limited to manually switched lights at the entrance to the operations/electrical building and at the headworks area. A standby power system would be provided in the form of a diesel generator and aboveground fuel tank with capacity to support three consecutive days of operation. In addition, the electrical service panel would be equipped with a manual transfer switch and generator receptacle to allow connection of a portable trailer-mounted generator in the event of emergency generator failure during an extended power outage.

A land-line and/or cellular telephone telemetry system would be used to connect the wastewater treatment and disposal facility to DEM and facilitate communication with staff in Hilo or Kona.

To avoid damaging existing buried infrastructure during construction, the construction contractor would be required to call the one-call center prior to any construction activities to allow demarcation of underground utilities to occur.

Abandonment of the two LCCs and the existing wastewater collection system would not affect electrical and communications infrastructure in the area.

(b) No-Action Alternative

The No-Action Alternative would not require any electrical power and includes no construction activities that could disrupt buried utility infrastructure. Therefore, no impacts to electrical and telecommunications infrastructure would occur.

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## 4 CUMULATIVE EFFECTS

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The Proposed Action (construction of a new wastewater treatment and disposal facility and a new collection system, closure of existing large capacity cesspools (LCCs), and connection of newly accessible properties to the sewer system), in combination with other past, present, or reasonably foreseeable actions at or near Pāhala, could contribute to cumulative improvements and impacts on certain environmental resources. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

### 4.1 Scope of Analysis

This section identifies the other past, present, or reasonably foreseeable actions at or near Pāhala that were considered and evaluated in this cumulative improvements and impacts analysis.

#### 4.1.1 Geographic Scope of Analysis

The extent of the cumulative effects analysis is generally limited to the geographic/natural boundaries of the affected resource areas. The Council on Environmental Quality (CEQ) handbook on *Considering Cumulative Effects Under the National Environmental Policy Act* indicates that the geographic extent for this analysis should be defined on a case-by-case basis and is dependent on the affected resources (CEQ, 1997).

In defining the geographic scope for consideration of cumulative effects, the U.S. Environmental Protection Agency (EPA) considered the resources that would be affected by the Proposed Action (i.e., within the project impact zone); the type and intensity of those effects; and whether those affected resources extend beyond the project impact zone. As discussed throughout Section 3, the effects of the Proposed Action would generally be limited to the footprint of the project and the immediate vicinity, plus minor transportation-related impacts during construction; the Proposed Action would not adversely affect historic properties or protected species; it would not adversely affect surface waters that are part of a larger watershed (other than potential for temporary, minor construction-related runoff impacts that would be mitigated by adherence to BMPs); and the affected macadamia nut orchard is not part of a larger forest parcel that provides valuable habitat. Based on these considerations, EPA limited this cumulative effects assessment to include past, present, and reasonably foreseeable actions located within the Pāhala community or within 1 mile of the proposed location of the wastewater treatment and disposal facility. This scope is expected to more than fully encompass the full extent of resource areas that would potentially experience discernable effects from the Proposed Action and is commensurate with the type and intensity of the effects of the Proposed Action.

The community of Nā'ālehu, located approximately 11 miles southwest of Pāhala, is also considering options for closure of LCCs and development of a new wastewater treatment system. The Nā'ālehu Large Capacity Cesspools Closure Project (Nā'ālehu Project) is similar in concept to the Proposed Action in that it proposes the closure of existing LCCs and the construction of a new system for a similarly sized community. EPA analyzed whether this and other similar projects throughout the Ka'ū District would have the potential to affect the same resources as the Proposed Action. A typical, similar construction project would be expected to result in temporary, localized impacts during construction including impacts from the use of construction-related vehicles and equipment (e.g., changes in traffic patterns and increases in noise and air emissions), disturbance of soil and vegetation, and generation of construction and demolition debris; and potential long-term, localized impacts including changes in stormwater runoff and infiltration, removal of vegetation, and changes in visual resources. These direct and indirect effects, if managed in

accordance with applicable environmental regulations, would not be expected to extend beyond the vicinity of the project construction sites and local communities.

For these reasons, the future Nā'ālehu Project, while located in the Ka'ū District, is outside the geographic scope of this cumulative effects analysis and, for the reasons described above, is not expected to have a significant cause-and-effect relationship with the direct and indirect effects of the Proposed Action due to its distance from Pāhala. In addition, the National Environmental Policy Act (NEPA) does not require consideration of socioeconomic impacts that are unrelated to an impact on the physical environment (40 CFR § 1508.14). Therefore, cumulative economic effects of the Nā'ālehu Project combined with the Proposed Action on the County-wide economy, tax base, and borrowing capacity were not analyzed in this environmental assessment.

#### **4.1.2 Past, Present, and Reasonably Foreseeable Actions within Geographic Scope of Analysis**

Only one significant project has occurred within the geographic scope of analysis in the recent past – specifically, the construction of a new gymnasium at Ka'ū High School and Pāhala Elementary School in the center of Pāhala, more than one-half mile north of the site of the wastewater treatment and disposal facility. The gym was constructed to also serve as a community shelter during emergencies. Construction began in October 2012 and completed in early 2016.

The school's LCC was previously replaced with a Department of Health (DOH)-approved septic system that included two new laterals at the property line on Hala Street and Kamani Street to allow eventual connection to the new collection system. Following completion of the Proposed Action, the State Department of Education will connect the Ka'ū High School and Pāhala Elementary School (including the Ka'ū District Gym and Shelter) to the new collection system and will properly close the onsite septic system.

There are no current projects in or around Pāhala, and no reasonably foreseeable actions (other than connection of the Ka'ū High School and Pāhala Elementary School to the new collection system) are planned based on review of the County's Capital Improvement Plan and the Ka'ū Community Development Plan (CDP). The CDP includes policies for long-term improvements regarding the extension of wastewater systems in the Pāhala community in the Ka'ū District. These long-term goals were considered in preliminary design of the Proposed Action; the wastewater treatment and disposal facility and collection system would be designed to be expandable should the County or community decide in the future that expansion is necessary. However, the CDP does not present a timeline for this expansion; no substantial planning or scoping of a collection system expansion has been conducted, and this expansion is unlikely to occur within the next 10 to 20 years. This action therefore is not considered reasonably foreseeable for purposes of the cumulative effects discussion and is not included in the analysis below.

#### **4.2 Cumulative Improvements and Impacts Analysis**

This analysis identified the following potential cumulative effects resulting from the Proposed Action, construction of the Ka'ū District Gym and Shelter, and connection of the Ka'ū High School and Pāhala Elementary School to the new collection system:

- Installation of new exterior lighting, resulting in potential nighttime light pollution and distraction to night-flying birds;
- Removal of vegetation and construction of new impervious surfaces, resulting in a potential increase in stormwater runoff; and

- Increase in influent flows from the Ka'ū High School and Pāhala Elementary School to the new wastewater treatment and disposal facility.

Both the Proposed Action and the Ka'ū District Gym and Shelter construction have incorporated mitigation measures to reduce nighttime light pollution and impacts to night-flying birds. Specifically, the Ka'ū District Gym and Shelter incorporated minimal use of security lighting, which are shielded in accordance with the County's exterior lighting standards, and outdoor parking lights are turned off at 11:00 p.m. to avoid impacts to birds and bats. As discussed in Section 3.19.2, the Proposed Action would incorporate lighting that complies with the County's exterior lighting standards and FWS guidance, and the new facility would generally be dark at night, with exterior lighting used only for emergency maintenance purposes. Adherence to these requirements would minimize the potential cumulative light pollution impacts from these projects.

To reduce stormwater impacts, the Ka'ū District Gym and Shelter incorporated new dry wells and grass parking, instead of paved parking, to the extent allowable by the Hawai'i Planning Department. The Proposed Action would incorporate permanent BMPs such as subsurface linear infiltration or depressed detention basins to detain flows and volumes to their pre-development conditions. Additionally, due to the relatively young and porous geology of the Ka'ū district, any increases in stormwater runoff generated by these projects are anticipated to infiltrate to groundwater without presenting cumulative erosion concerns.

Finally, while the connection of the Ka'ū High School and Pāhala Elementary School to the new wastewater treatment and disposal facility would increase the treatment capacity requirements for the wastewater treatment and disposal facility, this was accounted for in the facility's preliminary design. Based on the above, the Proposed Action is not expected to result in any significant cumulative improvements or impacts to the environment in combination with other past, present, or reasonably foreseeable actions.

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## 5 FEDERAL CROSS CUTTER REQUIREMENTS

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This project may be funded by federal funds provided by U.S. Environmental Protection Agency (EPA) through the State of Hawai'i's Clean Water State Revolving Fund (CWSRF) Program. As such, the State of Hawai'i Department of Health (DOH) must conduct an environmental review of projects funded under the CWSRF as required under the Code of Federal Regulations (CFR), using the EPA-approved State Environmental Review Process. In addition, the State must comply with the federal cross-cutting authorities set forth in 40 CFR § 35.3145 for the CWSRF. These requirements are set forth as "cross cutters" described as follows.

In addition to the cross cutters required by the EPA-approved State Environmental Review Process, EPA guidance for conducting environmental reviews for Special Appropriations Act Project (SAAP) grants requires the inclusion of one additional cross cutter—specifically, the Clean Water Act, which has been added at the end of this section (see Section 5.19).

### 5.1 Archaeological and Historic Preservation Act (54 U.S.C. § 312502)

The Archaeological and Historic Preservation Act (AHPA), also known as the Archaeological Recovery Act and the Moss-Bennett bill, was passed and signed into law in 1974. It amended and expanded the Reservoir Salvage Act of 1960. The AHPA built upon the national policy, set out in the Historic Sites Act of 1935, *"to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance."* The AHPA expanded the policy by focusing attention on significant resources and data but does not require that they be shown to be of "national" significance. The AHPA required that federal agencies provide for *"...the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of...any alteration of the terrain caused as a result of any Federal construction project of federally licensed activity or program."*

54 United States Code (U.S.C.) § 312502 (a)(1) states: *"When any Federal agency finds, or is notified, in writing, by an appropriate historical or archeological authority, that its activities in connection with any Federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, the agency shall notify the Secretary, in writing, and shall provide the Secretary with appropriate information concerning the project, program, or activity."*

54 U.S.C. § 312502 (b)(1) states: *"When any Federal agency provides financial assistance by loan, grant, or otherwise to any private person, association, or public entity, the Secretary, if the Secretary determines that significant scientific, prehistorical, historical, or archeological data might be irrevocably lost or destroyed, may, with funds appropriated expressly for this purpose-*

- (A) *Conduct, with the consent of all persons, associations, or public entities having a legal interest in the property, a survey of the affected site; and*
- (B) *Undertake the recovery, protection, and preservation of the data (including analysis and publication)."*

The proposed collection system will be constructed primarily within existing County streets and two short segments within private easements in the Pāhala community that have been previously disturbed when the streets were constructed. Preliminary analysis shows the proposed treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An Archaeological Inventory Survey (AIS), which included subsurface testing, was conducted to confirm the presence/absence of archaeological resources on the preferred site. The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface within the proposed treatment and disposal facility site as the area experiences ongoing disturbance by

macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching. For more information, please refer to Appendix D.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (SHPD), who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

## **5.2 Bald and Golden Eagle Protection Act (16 U.S.C. § 668-668c)**

The Bald Eagle Protection Act (16 U.S.C. §668-668c) prohibits any act to take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner any bald eagle commonly known as the American eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof of the foregoing eagles.

No bald or golden eagles are found in Hawai'i.

## **5.3 Clean Air Act (42 U.S.C. § 7401 et seq.)**

Over the years, there have been a series of legislations affecting air quality and a number amendments adopted related to air quality. The Air Pollution Control Act of 1955 was the first federal legislation involving air pollution and was followed by the Clean Air Acts of 1963 and 1970. The Clean Air Act of 1970 (1970 CAA, 42 U.S.C. § 7401 et seq.) authorized the development of comprehensive federal and state regulations to limit emissions from both stationary (industrial) sources and mobile sources.

The 1970 CAA set forth four major regulatory programs affecting stationary sources: the National Ambient Air Quality Standards (NAAQS), State Implementation Plans (SIPs), New Source Performance Standards, and National Emission Standards for Hazardous Air Pollutants. In Hawai'i, the DOH, Clean Air Branch, Air Quality program is defined by Hawai'i Administrative Rules (HAR) 11-60.1 and serves as the SIP approved by EPA.

The DOH operates a network of air quality monitoring stations at various locations around the state. In December 2016, the DOH issued the Annual Summary 2015 Air Quality Data report (the most recent report) which provides the results from the network of air quality monitoring stations. The DOH maintains a monitoring station the grounds of the Ka'ū High and Pāhala Elementary School. Established August 2007, the station was placed to monitor SO<sub>2</sub> and PM<sub>2.5</sub> from volcanic emissions. In 2015, Hawai'i was in attainment of the state annual SO<sub>2</sub> standard. In 2015, Hawai'i was in attainment with the annual NAAQS for particulate matter with a diameter of 2.5 micrometers or less (PM<sub>2.5</sub>).

Volcanic eruptions are considered natural events and therefore EPA may exclude the exceedances of the 1-hour NAAQS from attainment determinations.

The quality of air in the general Pāhala area is considered "Good." The rural nature of Pāhala area has no major stationary sources of air pollution. Existing sources of air pollution are emissions from motor vehicles traveling along Māmalahoa Highway and on the streets in the community; the low level of vehicle traffic tends to limit mobile sources of emissions.

Potential short-term effects from dust and exhaust due to construction activities will be minimized with BMPs such as water sprinkling and proper equipment maintenance. No long-term impacts on air quality resulting from operation of the collection system and the wastewater treatment and disposal facility are anticipated.

#### **5.4 Coastal Barrier Resources Act (16 U.S.C. § 3501)**

In 1982, Congress passed the Coastal Barrier Resources Act (CBRA) (16 U.S.C. § 3501) to minimize the loss of human life; wasteful expenditure of federal revenues; and the damage to fish, wildlife, and other natural resources associated with the coastal barriers along the Atlantic and Gulf coasts and along the Great Lakes by restricting future federal expenditures and financial assistance which have the effect of encouraging development of coastal barriers, such as federal flood insurance through the National Flood Insurance Program.

The Coastal Barrier Resources Reauthorization Act of 2000 reauthorized the CBRA and directed the U.S. Fish and Wildlife Service (FWS) to complete a Digital Mapping Pilot Project that includes digitally produced draft maps for up to 75 John H. Chafee Coastal Barrier Resources System (CBRS) areas and a report to Congress that describes the feasibility and costs for completing digital maps for all CBRS areas.

Based on its location, the CBRA is not applicable to Hawai'i.

#### **5.5 Coastal Zone Management Act (16 U.S.C. § 1451)**

The Coastal Zone Management Act of 1972 (CZMA) (16 U.S.C §§ 1451-1464) was passed to establish a national policy to preserve, protect, develop, and where possible, restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations and to encourage coastal states to develop and implement coastal zone management (CZM) programs. Each federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved state management programs. Each federal agency carrying out an activity subject to the Act shall provide a consistency determination to the relevant state agency designated under § 1455(d)(6) of this title at the earliest practicable time.

In 1977, Hawai'i enacted HRS 205A (Coastal Zone Management). The CZM area encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. The objective and policies of the CZM Program are set forth in HRS § 205A-2. See detail discussion in Section 6 (Plans, Policies and Controls). A summary follows.

(1) Recreational Resources

Objective:

*Provide coastal recreational opportunities accessible to the public.*

Policies:

- (A) *Improve coordination and funding of coastal recreational planning and management; and*
- (i) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by: 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 use 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.*

All project locations are at least 3.3 miles from the shoreline and, as such, the Proposed Action will not affect coastal recreational resources.

(2) Historic Resources

Objective:

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

Policies:

- (A) *Identify and analyze significant archaeological resources;*
- (B) *Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) *Support state goals for protection, restoration, interpretation, and display of historic resources.*

The proposed wastewater collection system will be constructed along the existing County streets and two short segments within easements in the Pāhala community that have been previously disturbed when the streets were constructed. Preliminary analysis shows the treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An AIS, which included subsurface testing, was conducted to confirm the presence or absence of archaeological resources on the project site. The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface within the proposed treatment and disposal facility site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching. For more information, please refer to Appendix D.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease immediately and the find will be protected from further damage. The contractor will immediately contact SHPD, who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

(3) Scenic and Open Space Resources

Objective:

- (A) *Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.*

Policies:

- (A) *Identify valued scenic resources in the coastal zone management area;*
- (B) *Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*

- (C) *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) *Encourage those developments which are not coastal dependent to locate in inland areas.*

All project locations are at least 3.3 miles from the shoreline and, as such, coastal scenic and open space resources will not be affected.

(4) Coastal Ecosystems

Objective:

- (A) *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Policies:

- (A) *Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*
- (B) *Improve the technical basis for natural resource management;*
- (C) *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*
- (D) *Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*
- (E) *Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.*

All project locations are at least 3.3 miles from the shoreline and, as such, coastal ecosystems will not be adversely affected.

(5) Economic Uses

Objective:

- (A) *Provide public or private facilities and improvements important to the State's economy in suitable locations.*

Policies:

- (A) *Concentrate coastal dependent development in appropriate areas;*
- (B) *Ensure that coastal dependent developments such as harbors and ports, and coastal related development such as visitor 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*
- (C) *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.**

All project locations are at least 3.3 miles from the shoreline. The collection system and the treatment and disposal facility will be sited in suitable locations to serve the Pāhala community.

(6) Coastal Hazards

Objectives:

- (A) *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*

Policies:

- (A) *Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*
- (B) *Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;*
- (C) *Ensure that developments comply with requirements of the Federal Flood Insurance Program;*
- (D) *Prevent coastal flooding from inland projects.*

All project locations are at least 3.3 miles from the shoreline and at least 580 feet above mean sea level (msl). Based on the location, the proposed collection system and wastewater treatment and disposal facility will not be subject to (and will not exacerbate) coastal hazards and do not include improvements related to tsunami, storm waves, stream flooding erosion, subsidence and pollution.

(7) Managing Development

Objective:

- (A) *Improve the development review process, communication, and public participation in the management of coastal resource and hazards.*

Policies:

- (A) *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (B) *Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and*
- (C) *Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

In December 2017, a total of five community outreach sessions regarding the project were conducted in the Pāhala community. A public information meeting for the Draft EA was held in October 2018. The collection system and wastewater treatment and disposal facility are at least 3.3 miles from the coast, at least 580 feet above msl, and do not involve management of coastal resources and hazards.

(8) Public Participation

Objective:

- (A) *Stimulate public awareness, education, and participation in coastal management.*

Policies:

- (A) *Promote public involvement in coastal zone management processes;*
- (B) *Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and*
- (C) *Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

In December 2017, a total of five community outreach sessions were conducted in the Pāhala community. A public information meeting for the Draft EA was held in October 2018. All project locations are at least 3.3 miles from the coast and at least 580 feet above msl.

(9) Beach Protection

Objective:

- (A) *Protect beaches for public use and recreation.*

Policies:

- (A) *Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;*
- (B) *Prohibit construction of private 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*
- (C) *Minimize the construction of public erosion-protection structures seaward of the shoreline.*

All project locations are at least 3.3 miles from the shoreline. The collection system and the wastewater treatment and disposal facility project does not include improvements that would affect public use beaches.

(10) Marine Resources

Objective:

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

Policies:

- (D) *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- (E) *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*
- (F) *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;*
- (G) *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*
- (H) *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

All project locations are at least 3.3 miles from the shoreline. The collection system and the wastewater treatment and disposal facility project does not include improvements that would affect development of marine and coastal resources.

## 5.6 Endangered Species Act (16 U.S.C. § 1531)

On December 28, 1973, the Endangered Species Act (16 U.S.C. § 1531) was passed and, over the years, has been amended a number of times. The stated purpose of the original Act was to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of various related treaties and conventions. The provisions of the Act are administered by the FWS and the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS). The FWS has primary responsibility for terrestrial and freshwater organisms, while NOAA/NMFS is mainly responsible for marine wildlife.

Section 7 of the Act, Interagency Cooperation (16 U.S.C. § 1536), states each federal agency shall, in consultation with and with the assistance of the Secretary of the Interior, ensure that any action authorized, funded, or carried out by such agency (an "agency action") is not likely to

jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined, after consultation as appropriate with affected states, to be critical, unless such agency has been granted an exemption for such action.

In August 2018, a biological resources field survey was conducted on the preferred project site. The results of the survey show that, due to the proposed alignment of the collection system along existing roadways, vegetation in the collection system area consists entirely of maintained yards with ornamental plants.

The field survey of the 14.9-acre preferred site for the proposed wastewater treatment and disposal facility indicates that the site is comprised of a macadamia nut orchard of mature trees, unmaintained areas outside the orchard dominated by Guinea grass, lanes of windbreak trees oriented between orchard units, and (mostly) mowed road verge areas. A total of 52 species of vascular plants: two ferns, one gymnosperm, and 49 species of angiosperms (flowering plants) were identified during the survey. Only two species (4 percent) identified during the survey are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Being widely distributed indigenous species, neither is listed as threatened or endangered or of any special concern.

The August 2018 field survey included assessment of mammalian species. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The field survey reported no mammalian species within the survey area. This also included no indication that pigs (*Sus scrofa*) utilize the survey area.

The field survey also included an assessment of avian species, and recorded a total of 175 individual birds of 13 species, representing nine separate families, during station counts. Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. All of the avian species recorded during the course of the survey are established alien species. No native avian species were recorded during the course of the survey. The field survey recorded no species of plants or animals currently listed or proposed for listing under either the federal or State of Hawai'i endangered species statutes.

On December 21, 2018, the designated non-federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of EPA and the County of Hawai'i, requested concurrence from the FWS that the Pāhala LCC Replacement Project is not likely to adversely affect federally listed threatened and endangered species or critical habitat.

On February 15, 2019, the FWS provided a letter that concluded: "The Service has analyzed potential impacts to listed species due to the implementation of [the] project. Based on the inclusion of the avoidance and minimization measures listed above, the Service anticipates that any potential impacts will be discountable or insignificant and therefore we concur that the Pāhala LCC Replacement Project may affect, but is not likely to adversely affect the endangered Hawaiian hoary bat, Hawaiian Hawk, Hawaiian goose, Hawaiian Petrel, Band-rumped Storm-Petrel, Hawaiian Stilt, and Hawaiian Coot, and the threatened Newell's Shearwater" (see letter with reference number 01EPIF00-2019-I-0153 in Appendix C-1). The Proposed Action will incorporate the avoidance and minimization measures cited in the FWS letter, including (but not limited to) avoiding impacts to potential Hawaiian hoary bat habitat during the bat birthing and pup rearing season; conducting a Hawaiian hawk nest survey prior to any work during the nesting season; avoiding activities near active nests; and avoiding nighttime construction during the seabird fledging period.



## **5.7 Environmental Justice Executive Order 12898**

Executive Order 12898, Environmental Justice (full title Federal Actions to Address Environmental Justice to Minority and Low Income Populations), was signed on February 11, 1994. The intent of Executive Order 12898 is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low income populations. Executive Order 12898 also requires federal agencies ensure that minority and low-income communities have adequate access to public information related to health and the environment.

The 2016 American Community Survey (ACS) (5-Year Estimates) is the most recent information related to socioeconomic conditions in the state and County. The 2016 ACS includes Hawai'i Geographic Area Profiles – Census Designated Places: Neighbor Islands. The ACS noted it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

For purposes of this assessment, and to correspond with the available ACS demographic characteristic data, “low income” is defined as having a household income of less than \$24,999; “minority” is defined as any race population other than White; and “children” is defined as the “Under 5 to 19” age category.

Pāhala has more households in the “less than \$24,999” income bracket (33.6 percent) than the County as a whole (26.3 percent).

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities (92.1 percent non-White) than the County at large (66.8 percent non-White). The racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.

Pāhala has a similar age distribution to Hawai'i County, although Pāhala has a higher proportion of individuals in the “Under 5 to 19” age category (28.5 percent) compared to the County as a whole (24.4 percent).

Based on the above, Pāhala has a higher proportion of low-income, minority, and children residents as compared to the County as a whole. However, the Proposed Action will not result in disproportionately high and adverse human health or environmental effects on these sensitive populations. The design and location of the proposed wastewater treatment and disposal facility will minimize odor and air quality impacts. Construction of the wastewater collection system will result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However, construction activities within the community will comply with provisions of HAR 11-46 (Community Noise Control). This includes obtaining a noise permit for any activities that will generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit will limit excessive noise sources to daytime hours; will require the use of best available control technology to control noise levels from excessive noise sources; and will require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, the Proposed Action is expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater treatment system.

## **5.8 Farmland Protection Policy Act (7 U.S.C. § 4201)**

The Agriculture and Food Act was passed in 1981 and contained the Farmland Protection Policy Act (FPPA) (7 U.S.C. § 4201). The stated purposes of the FPPA are to: 1) minimize the

extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses; and 2) assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland. "Farmland" subject to FPPA requirements does not have to be currently used for cropland.

The FPPA is administered by the U.S. Department of Agriculture (USDA), National Resources Conservation Service (NRCS). "Farmland", as used in the FPPA, includes prime farmland, unique farmland, and land of statewide or local importance, as defined by the State of Hawai'i Department of Agriculture.

Per the Agricultural Lands of Importance to the State of Hawai'i (ALISH) Classification System, the collection system is located in "unclassified" lands and the proposed wastewater treatment and disposal facility will be located on approximately 20 percent "prime", 40 percent "other" and 40 percent "unclassified" land.

The proposed collection system will be located primarily within the streets and shoulders in Pāhala and therefore will not affect farmlands. The preferred location for the proposed wastewater treatment and disposal facility is located within an existing macadamia nut orchard. The 2012 Census Agriculture shows about 17,378 acres in the County are planted with macadamia nuts. As such, removal of the 14.9-acre area required for the Proposed Action at the preferred site will not significantly affect macadamia nut production in the state or the County.

In accordance with the implementation procedures for the FPPA site assessment criteria (7 CFR 658), EPA is coordinating with the local NRCS field office to complete a Farmland Conversion Impact Rating Form for the Pāhala LCC Replacement Project. This form is used to assess the potential adverse effects on the protection of farmland; support the consideration of alternative actions; and assess compatibility with state and local programs and policies to protect farmland. After the site is selected, EPA will return a finalized copy of the form to the NRCS field office in accordance with 7 CFR 658.4(g).

## **5.9 Fish and Wildlife Coordination Act (16 U.S.C § 661)**

The Fish and Wildlife Coordination Act (16 U.S.C § 661), enacted on March 10, 1934, was amended on August 12, 1958. The purpose of the Act is to recognize the vital contribution of wildlife resources to the Nation, the increasing public interest and significance, and to provide that wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs through the effectual and harmonious planning, development, maintenance, and coordination of wildlife conservation. The Act defines wildlife and wildlife resources as birds, fishes, mammals and all other classes of wild animals, and all types of aquatic and land vegetation upon which wildlife is dependent (16 U.S.C. § 666b).

The Secretary of the Interior is authorized (1) to provide assistance to, and cooperate with, federal, state, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, and their habitat; in controlling losses of the from disease or other causes; in minimizing damages from overabundant species; and in providing public shooting and fishing areas, including easements across public lands; (2) to make surveys and investigations of the wildlife of the public domain, including lands and waters acquired or controlled by any agency; and (3) to accept donations of land and contributions of funds in furtherance of the purposes of the Act.

Specifically, the Act states that "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private

agency under Federal permit or license, such department or agency first shall consult with the United States Fish and Wildlife Service" (16 U.S.C. § 662(a)). The consultation may result in a report of recommendations by FWS that should be adopted to prevent the loss of or damage to wildlife resources. The provisions of the Act do not apply to impoundments of water less than 10 acres.

The Pāhala LCC Replacement Project does not include any impoundment of water and therefore a Fish and Wildlife Coordination Act review and/or consultation pursuant to 16 U.S.C. § 662 is not required.

### **5.10 Floodplain Management (Executive Order 11988, as amended by Executive Orders 12148 and 13690)**

Executive Order 11988, Floodplain Management, dated May 24, 1977 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities."

The Proposed Action is not located within a 100-year floodplain area, will incorporate stormwater BMPs to manage runoff in accordance with state requirements, and will be designed to ensure sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event. The Proposed Action therefore will not have an adverse impact on floodplains and will minimize the risk of flood-related impacts on surrounding properties.

### **5.11 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801)**

The 1996 Sustainable Fishery Act amendments to the Magnuson-Stevens Fishery Conservation and Management Act and subsequent Essential Fish Habitat (EFH) Regulatory Guidelines (NOAA, 2002) describe provisions to identify and protect habitats of federally managed marine and anadromous fish species. Under the various provisions, federal agencies that fund, permit, or undertake activities that may adversely affect EFH are required to consult with the NMFS.

Congress defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH is further defined by the existing regulations (NOAA-NMFS, 2007; NOAA, 2002). "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

All project locations are at least 3.3 miles from the shoreline. The Proposed Action will not adversely impact EFH.

### **5.12 Marine Mammal Protection Act (16 U.S.C. §§ 1361 *et seq.*)**

The Marine Mammal Protection Act (MMPA) (16 U.S.C. §§ 1361 *et seq.*), protects all marine mammals. The MMPA includes a general moratorium on the taking and importing of marine mammals, and prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. Jurisdiction for MMPA is shared by the FWS and NMFS. The FWS

Branch of Permits is responsible for issuing take permits when exceptions are made to MMPA. Under the exception for incidental taking, the FWS or the NMFS must find that the total taking over the five-year period will have a “negligible impact” and will not adversely affect the availability of the marine mammal species or stock for subsistence use by natives.

All project locations are at least 3.3 miles from the shoreline. The Proposed Action will not adversely impact marine mammal communities and will not encourage any “take” of marine mammals.

### **5.13 Migratory Bird Treaty Act (16 U.S.C. §§ 703 *et seq.*)**

The Migratory Bird Treaty Act (MBTA) and Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) provide for the protection of migratory birds. The MBTA of 1918, as amended (16 U.S.C. §§ 703-712) makes it unlawful to, among other things, pursue, hunt, take, capture, kill, transport or import any species listed under the Act. The Act implements conventions between the U.S., Great Britain, Mexico, Japan, and the former Soviet Union.

Executive Order 13186 was issued to assist federal agencies with their efforts to comply with the MBTA. It should be noted that the Executive Order does not constitute any legal authorization that in any way supersedes the requirements outlined in the MBTA. The Executive Order directs federal agencies undertaking actions that have or are likely to have a measurable adverse impact on migratory bird populations to develop and implement a Memorandum of Agreement with the FWS addressing the conservation of these populations.

The field survey at the preferred site (Site 7) found a total of 175 individual birds of 13 species, none of which are native to the Hawaiian Islands. Avian diversity and densities were very low, which is consistent with the current site use as a mature macadamia nut orchard with limited ground cover and few weedy or shrubby species. The field survey did indicate that endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) have been recorded flying over the general area between April and the end of November each year. Impact avoidance and minimization measures will be implemented, including down-shielding of lights and avoiding nighttime construction during the seabird fledging period. The Proposed Action will also avoid impacts to potential Hawaiian hoary bat habitat (woody plants greater than 15 ft tall) during the bat birthing and pup rearing season (June 1 through September 15), which in turn will also reduce the potential take of migratory birds due to tree clearing during that period.

### **5.14 National Historic Preservation Act (54 U.S.C. § 300101)**

The National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. § 300101) requires a federal agency undertaking an action/project consider of the effect of the project on any historic property defined as a district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places.

Section 106 of the NHPA (54 U.S.C. § 306108) requires a federal agency having direct or indirect jurisdiction over a federal or federally assisted undertaking to take into account the effect of the undertaking on any historic property. An “undertaking” includes a “project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency” (54 U.S.C. § 300320). Because the Pāhala LCC Replacement Project will be funded using federal funds, it is considered an “undertaking” and is subject to the NHPA.

The Act requires the federal agency's preservation-related activities to be carried out in consultation with other federal, state, and local agencies, Indian tribes, Native Hawaiian organizations (54 U.S.C § 306102).

The proposed collection system will be constructed along the existing County streets and two short segments within private easements in the Pāhala community that have been previously

disturbed when the streets were constructed. Preliminary analysis shows the proposed treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An AIS, which included pedestrian surveys and subsurface testing, was conducted to confirm the presence or absence of archaeological resources on the project site. Based on the AIS, no properties eligible for inclusion on the National Register of Historic Places are present within the area of potential effects for the Preferred Alternative, and no significant artifacts or cultural deposits on the ground surface and no cultural deposits or lava tubes were encountered during subsurface testing.

Based on the above and in accordance with 36 CFR § 800.4(d), EPA reached a finding of “no historic properties affected for the project or undertaking.” On September 26, 2019, EPA sent a letter to SHPD to document their determination that no historic properties will be affected by the undertaking and to request concurrence from SHPD. The potential for encountering unexpected archeological resources within the site of the proposed treatment and disposal facility is low due to historical ground modifications and ongoing harvesting activities; however, the Proposed Action will incorporate appropriate mitigation measures should archeological resources be discovered during construction. Specifically, the contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease immediately and the find will be protected from further damage. The contractor will immediately contact SHPD, who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

The AIS and NHPA Section 106 consultation correspondence can be found in Appendix D and Appendix D-1, respectively. To date, SHPD has not responded to the County's Draft AIS submittal from March 13, 2019; the EPA letter from September 26, 2019 requesting concurrence with the determination that no historic properties will be affected by the undertaking; or the County's follow-up letter from October 9, 2019 requesting concurrence with the Draft AIS findings. In accordance with 36 CFR § 800.4(d)(1)(i) and as specified in the September 26 letter, because no response was received within 30 days of SHPD receipt of the adequately documented finding, EPA has fulfilled their Section 106 responsibilities for this undertaking. However, construction will not proceed until SHPD has approved the Draft AIS.

### **5.15 Protection of Wetlands (Executive Order 11990 (1977), as amended by Executive Order 12608 (1997))**

Executive Order 11990, Protection of Wetlands, dated 1977 requires federal agencies to avoid, preserve, or mitigate effects of new construction projects on lands which have been designated wetlands. Executive Order 11990 states in order to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative, it is hereby ordered as follows: Section 1. (a) Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; and (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

The National Wetlands Inventory (NWI) Wetlands Mapper and U.S. Geological Survey (USGS) topographic maps identify no wetland features or streams within Site 7, at the two LCCs, or within the proposed collection system area. Biological and archeological field survey reports do not indicate any standing water or evident wetland vegetation within Site 7. On August 2018, a

biological field survey was conducted at Site 7 and results of the field work indicated that no wetlands were observed on the site. The man-made drainage feature along Māmalahoa Highway along the edge of the parcel conducts flow generated from surface runoff underneath the highway and downslope to the east. Conditions within the ditch itself close to or on the property will not likely satisfy the hydric soil requirement to be defined as a wetland. Streams in the Pāhala area do not flow all the way to the sea, but terminate on Keone'ele'ele Flat to the southwest. Based on this information, the Proposed Action is not expected to impact wetland resources.

### **5.16 Rivers and Harbors Act (33 U.S.C. § 403)**

Originally enacted on March 3, 1899, the Rivers and Harbors Appropriation Act of 1899 affects navigable waters of the U.S. Section 10 of the Act states the creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of the Army; and it shall not be lawful to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or inclosure within the limits of any breakwater, or of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army prior to beginning the same (33 U.S.C. § 403).

All project locations are at least 3.3 miles from the shoreline. The preferred location for the proposed wastewater treatment and disposal facility is sited about 1,500 feet east of the center line of Hi'onamoa Gulch. The USGS topographic map shows the gulch stops about 5,500 feet from the shoreline. The Proposed Action will not directly affect any streams or gulches. Based on this, the collection system and the treatment and disposal facility will not affect navigable waters.

### **5.17 Safe Drinking Water Act (42 U.S.C. § 300f)**

The Safe Drinking Water Act (SDWA) of 1974 (42 U.S.C. § 300f) was established to protect the quality of all waters actually or potentially designed for drinking use from both underground and aboveground sources. The SDWA authorizes EPA to establish minimum standards to protect potable water with which all owners or operators of public water systems must comply; to oversee the agencies which can be approved to implement these rules on EPA's behalf, such as state governments; and to encourage attainment of secondary standards (nuisance-related). Section 1424(e) of the SDWA of 1974 (Public Law 93-523, 42 U.S.C. 300 et. seq also established the Sole Source Aquifer program which states that no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the EPA Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health.

The Proposed Action does not establish a drinking water system, and no Sole Source Aquifers are present on the Island of Hawai'i. The Proposed Action will provide the infrastructure necessary to enable the County to comply with the SDWA by replacing the existing outdated and federally banned wastewater systems that pose a threat to underground sources of drinking water.

### **5.18 Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287)**

The Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287, declares that certain selected rivers with their immediate environments, which possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historical, cultural, or other similar values, shall be preserved in their free-flowing condition for the enjoyment of present and future generations.

The State of Hawai'i has no designated wild and scenic rivers. The Wild and Scenic Rivers Act is not applicable to this project.

### **5.19 Clean Water Act (33 U.S.C. § 1251 et seq.)**

The Clean Water Act established the basis for regulating discharges of pollutants into waters of the U.S. Enacted in 1948, it was originally called the Federal Water Pollution Control Act but became known as the Clean Water Act with the amendments of 1972. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the U.S. and adjacent wetlands from development, water resource projects, mining or other infrastructure projects. Activities are regulated through a permit process that is administered under the responsibility of the U.S. Army Corps of Engineers. Permits may be issued as either Individual Permits for projects with potentially significant impacts or general permits for projects with only minimal adverse effects.

The NWI Wetlands Mapper and USGS topographic maps identify no wetland features or streams within Site 7, at the two LCCs, or within the proposed collection system area. Biological and archeological field survey reports do not indicate any standing water or evident wetland vegetation within Site 7. On August 2018, a biological field survey was conducted at Site 7 and results of the field work indicated that no wetlands were observed on the site. The man-made drainage feature along Māmalahoa Highway along the edge of the parcel conducts flow generated from surface runoff underneath the highway and downslope to the east. Conditions within the ditch itself close to or on the property would not likely satisfy the hydric soil requirement to be defined as a wetland.

Because no wetland resources are present and no impacts to wetlands are anticipated due to the nature and design of the Proposed Action, a Clean Water Act Section 404 permit is not required.

In addition to the above, the Clean Water Act was amended by the Federal Water Quality Act of 1987 which established provisions for a Clean Water State Revolving Fund (33 U.S.C. § 1383), a financial assistance program for water infrastructure projects. The program capitalizes on a partnership between EPA and states to provide loans to eligible recipients through state programs that act as environmental infrastructure banks providing low-interest loans. As stated in Section 2.1.2, the Pāhala LCC Replacement Project is being funded in part by the State of Hawai'i DOH Clean Water State Revolving Fund.

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## 6 PLANS, POLICIES AND CONTROLS

This section discusses the State and County of Hawai'i land use plans, policies and controls relating to the proposed project.

### 6.1 State Land Use Plans and Policies

#### 6.1.1 Hawai'i State Plan

The Hawai'i State Plan, Hawai'i Revised Statutes (HRS) 226, as amended, provides goals, objectives, policies, and priorities for the state. The purpose of the Hawai'i State Plan is to set forth a plan that shall serve as a guide for the future long-range development of the state; identify the goals, objectives, policies, and priorities for the state; provide a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improve coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities; and to establish a system for plan formulation and program coordination to provide for an integration of all major state, and county activities. The proposed project's consistency with applicable objectives and policies is discussed in Table 6.1. Applicable policies from Part I and III of the Hawai'i State Plan are provided in this table. Part II does not apply to the Pāhala Large Capacity Cesspool (LCC) Replacement Project.

<b>Table 6.1 Hawai'i State Plan Objectives and Policies</b>	
<b>Objectives and Policies of the Hawai'i State Plan</b>	<b>Discussion</b>
<p><b>§ 226-4 State goals.</b> In order to ensure, for present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:</p> <ul style="list-style-type: none"> <li>(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.</li> <li>(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.</li> <li>(3) Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.</li> </ul>	<p>The Pāhala project will support the state economy by providing a wastewater collection system and a treatment and disposal facility to enhance the community and the physical well-being of the community.</p>
<p><b>§ 226-5 Objective and policies for population.</b> (a) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.</p>	<p>The Pāhala project does not include facilities or improvements that could guide or otherwise affect population growth in this area of Hawai'i.</p>
<p><b>§ 226-6 Objectives and policies for the economy--in general.</b> (a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements that affect the economy of this area of Hawai'i.</p>
<p><b>§ 226-7 Objectives and policies for the economy--agriculture.</b> (a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements which will affect agriculture of this area of Hawai'i. The area used for the treatment and disposal facility will not adversely impact the total macadamia nut production on the state or County.</p>

<b>Table 6.1 Hawai'i State Plan Objectives and Policies</b>	
<b>Objectives and Policies of the Hawai'i State Plan</b>	<b>Discussion</b>
<b>§ 226-8 Objective and policies for the economy--visitor industry.</b> (a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai'i's economy	The Pāhala project does not include facilities or improvements that will affect the visitor industry of this area of Hawai'i.
<b>§ 226-9 Objective and policies for the economy--federal expenditures.</b> (a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy.	The Pāhala project will include federal expenditures to provide a collection system and treatment and disposal facility for the community.
<b>§ 226-10 Objective and policies for the economy--potential growth and innovative activities.</b> (a) Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawai'i's economic base.	The Pāhala project does not include facilities or improvements that will affect the potential growth of this area of Hawai'i.
<b>§ 226-10.5 Objectives and policies for the economy--information industry.</b> (a) Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region.	The Pāhala project does not include facilities or improvements that will affect the information industry of this area of Hawai'i.
<b>§ 226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.</b> (b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to: (1) Exercise an overall conservation ethic in the use of Hawai'i's natural resources. (3) Take into account the physical attributes of areas when planning and designing activities and facilities.	The Pāhala project site is located at least 580 feet above mean sea level and at least 3.3 miles from the shoreline. As such, it will not affect shoreline or marine resources.
<b>§ 226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources.</b> (b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to: (3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	The Pāhala project does not include facilities or improvements that will affect the scenic, natural beauty and historic resources of this area of Hawai'i.
<b>§ 226-13 Objectives and policies for the physical environment--land, air, and water quality.</b> (b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to: (2) Promote the proper management of Hawai'i's land and water resources. (3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.	The Pāhala project does not include facilities or improvements that will affect the physical environment of this area of Hawai'i.
<b>§ 226-14 Objective and policies for facility systems--in general.</b>	The Pāhala project is consistent with the County of Hawai'i plans for facilities.
<b>§ 226-15 Objectives and policies for facility systems--solid and liquid wastes.</b>	The Pāhala project does include facilities or improvements that will affect liquid waste facilities. The project provides a collection system and treatment and disposal facility for Pāhala community and closes LCCs in conformance with U.S. Environmental Protection Agency (EPA) requirements.

**Table 6.1  
Hawai'i State Plan Objectives and Policies**

Objectives and Policies of the Hawai'i State Plan	Discussion
<p><b>§ 226-16 Objective and policies for facility systems--water.</b> (a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.</p>	<p>The Pāhala project does not include facilities or improvements that will affect water facilities.</p>
<p><b>§ 226-17 Objectives and policies for facility systems--transportation.</b> (a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements that will adversely affect transportation systems serving this area of Hawai'i.</p>
<p><b>§ 226-18 Objectives and policies for facility systems--energy.</b> (a) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:</p>	<p>The Pāhala project does not include facilities or improvements that will affect energy systems. Electrical service will be provided by Hawai'i Electric and Light Company (HELCO).</p>
<p><b>§ 226-18.5 Objectives and policies for facility systems--telecommunications.</b> (a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.</p>	<p>The Pāhala project does not include facilities or improvements that will affect telecommunications.</p>
<p><b>§ 226-19 Objectives and policies for socio-cultural advancement--housing.</b> (a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements that will affect housing.</p>
<p><b>§ 226-20 Objectives and policies for socio-cultural advancement--health.</b> (a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements that will affect the health of this area of Hawai'i.</p>
<p><b>§ 226-21 Objective and policies for socio-cultural advancement--education.</b> (a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations</p>	<p>The Pāhala project does include facilities or improvements that will affect the educational opportunities in this area of Hawai'i.</p>
<p><b>§ 226-22 Objective and policies for socio-cultural advancement--social services.</b> (a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.</p>	<p>The Pāhala project does not include facilities or improvements that will affect social services of this area of Hawai'i.</p>
<p><b>§ 226-23 Objective and policies for socio-cultural advancement--leisure.</b> (a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.</p>	<p>The Pāhala project does not include facilities or improvements that will affect the leisure activities.</p>
<p><b>§ 226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being.</b> (a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.</p>	<p>The Pāhala project does not include facilities or improvements that will affect individual rights.</p>
<p><b>§ 226-25 Objective and policies for socio-cultural advancement--culture.</b> (a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.</p>	<p>The Pāhala project does not include facilities or improvements that will affect the cultural advancement.</p>

**Table 6.1  
Hawai'i State Plan Objectives and Policies**

Objectives and Policies of the Hawai'i State Plan	Discussion
<p><b>§ 226-26 Objectives and policies for socio-cultural advancement--public safety.</b> (a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements that will adversely affect public safety of this area of Hawai'i.</p>
<p><b>§ 226-27 Objectives and policies for socio-cultural advancement--government.</b> (a) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:</p>	<p>The Pāhala project does not include facilities or improvements that will affect the advancement of government.</p>
<p><b>§ 226-101 Purpose.</b> The purpose of this part is to establish overall priority guidelines to address areas of statewide concern. [L 1978, c 100, pt of § 2; am L 1984, c 236, § 14]</p>	<p>The Pāhala project does not include facilities or improvements that will affect overall priority guidelines of statewide concern.</p>
<p><b>§ 226-102 Overall direction.</b> The State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.</p>	<p>The Pāhala project will affect short-term economic development and jobs during the construction period. The Pāhala project will not affect long-term economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education and climate change adaptation. Removal of cesspools is consistent with the principles of sustainability.</p>
<p><b>§ 226-103 Economic priority guidelines.</b> (a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy. (e) Priority guidelines for water use and development: (1) Maintain and improve water conservation programs to reduce the overall water consumption rate. (2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.</p>	<p>The Pāhala project will stimulate economic development and jobs during the construction period.</p>
<p><b>§ 226-104 Population growth and land resources priority guidelines.</b> (a) Priority guidelines to effect desired statewide growth and distribution:</p>	<p>The Pāhala project will not affect population growth but may help protect the environment and improve water quality in nearby surface water resources.</p>
<p><b>§ 226-105 Crime and criminal justice.</b> Priority guidelines in the area of crime and criminal justice:</p>	<p>The Pāhala project will not affect crime or criminal justice in the Pāhala area.</p>
<p><b>§ 226-106 Affordable housing.</b> Priority guidelines for the provision of affordable housing:</p>	<p>The Pāhala project will not affect affordable housing in the Pāhala area.</p>
<p><b>§ 226-107 Quality education.</b> Priority guidelines to promote quality education:</p>	<p>The Pāhala project will not affect education in the Pāhala area.</p>
<p><b>§ 226-108 Sustainability.</b> Priority guidelines and principles to promote sustainability include: (5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.</p>	<p>The Pāhala project will close two large capacity cesspools, replacing them with secondary treatment and disposal systems, thereby protecting groundwater resources for future generations, potentially benefitting the health and vitality of the area coastal and marine ecosystem.</p>

<b>Table 6.1 Hawai'i State Plan Objectives and Policies</b>	
<b>Objectives and Policies of the Hawai'i State Plan</b>	<b>Discussion</b>
<p><b>§ 226-109 Climate change adaptation priority guidelines.</b> Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy.</p>	<p>The wastewater treatment and disposal facility will be designed to contain the 100-year, 24-hour storm event while maintaining sufficient freeboard to account for the uncertainty of climate model projections.</p>

### 6.1.2 State Functional Plans

The Hawai'i State Plan directs appropriate state agencies to prepare Functional Plans to address statewide needs, problems, and issues through recommended policies and actions. A total of 14 Functional Plans were prepared to implement the State Plan provisions in the areas of agriculture, transportation, conservation lands, education, tourism, water resources, energy, recreation, historic preservation, health, housing, higher education, employment, and human services. The following presents a review of the Functional Plans which are applicable to the proposed project.

(a) Agriculture Functional Plan

*Objective B: Achievement of an orderly agricultural marketing system through product promotion and industry organization.*

*Policy B.2: Encourage the development of Hawai'i's agricultural industries.*

*Objective C: Achievement of optimal contribution by agriculture to the state's economy.*

**Discussion:** Agriculture is the major source of economic activity in Ka'ū. The 2012 Census of Agriculture shows 18,006 acres of land in the State of Hawai'i were dedicated to growing macadamia trees, of which 17,378 acres were located in Hawai'i County. Though the proposed wastewater treatment and disposal facility project site is currently planted with macadamia trees, the proposed project will have negligible impact on the macadamia industry in Ka'ū as the 14.9-acre project site is relatively small compared to the 17,378 acres dedicated to macadamia production in Hawai'i County. Moreover, the project site is situated on poorer-quality agriculture land. According to the Land Study Bureau Agricultural Productivity Ratings Map about 50 percent of the project site is classified as having Good productivity, while the 50 percent has a productivity rating of Poor. Furthermore, according to the Agricultural Lands of Importance to the State of Hawai'i Classification System only 20 percent of the treatment and disposal project site is considered Prime Lands with roughly 40 percent deemed Other Lands, while the remaining 40 percent is Unclassified. Overall, the proposed wastewater treatment and disposal facility will be sited and designed to minimize the use of agricultural lands for non-agricultural purposes. Removal of 14.9 acres from macadamia nut production will not adversely affect the total macadamia nut acreage in the state or the County. Further, use of the 14.9-acre area for the treatment and disposal facility will not be contrary to the objective of contribution of agriculture to the state's economy.

(b) Historic Preservation Functional Plan

*Objective B: Protection of Historic Properties*

*Policy B.2: Establish and make available a variety of mechanisms to better protect*

*historic properties.*

*Objective C: Management and Treatment of Historic Properties*

*Policy C.3. Explore innovative means to better manage historic properties.*

*Policy C.4. Encourage proper preservation techniques.*

**Discussion:** The wastewater collection system will be constructed primarily within the existing County streets in the Pāhala community which has been previously disturbed when the streets were constructed. Preliminary analysis shows the wastewater treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An Archaeological Inventory Survey (AIS), which included subsurface testing, was conducted to confirm the presence or absence of archaeological resources on the project site. The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface within the proposed treatment and disposal facility site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching. Under HRS § 6E-8 and in accordance with HAR § 13-275-7(a)(1), the County of Hawai'i Department of Environmental Management's (DEM) project effect determination is "no historic properties affected." Construction will not proceed until the State Historic Preservation Division (SHPD) has approved the AIS. For more information, please refer to Appendix D.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact SHPD, who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

**6.1.3 State Land Use District**

The State Land Use Law, HRS 205 (Land Use Commission), is intended to preserve, protect and encourage the development of lands in the state for uses that are best suited to the public health and welfare of Hawai'i's people. Under HRS 205, all lands in the State of Hawai'i are classified by the State Land Use Commission into four major categories referred to as State Land Use Districts. These districts are identified as the Urban District, Agricultural District, Conservation District, and Rural District.

**Discussion:** The wastewater treatment and disposal facility is located in the Agricultural District. Uses in the Agricultural District are governed by HRS 205. Permissible uses in the Agricultural District are set forth in HRS § 205-4.5 (a)(7) which states "Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, or treatment plants, or corporation yards, or other like structures."

HRS § 205-4.5(b) states: "Uses not expressly permitted in subsection (a) shall be prohibited, except the uses permitted as provided in sections 205-6 and 205-8." HRS § 205-6(a) states: "Subject to this section, the county planning commission may permit certain unusual and reasonable uses within agricultural and rural districts other than those for which the district is classified. Any person who desires to use the person's land within an agricultural or rural district other than for an agricultural or rural use, as the case may be, may petition the planning commission of the county within which the person's land is located for permission to use the

person's land in the manner desired.” Based on the above, the County will apply for a Special Permit which will require approval by the County Planning Commission.

#### **6.1.4 Chapter 344, State Environmental Policy**

The State’s Environmental Policy is contained in Chapter 344 of HRS. The purpose of HRS 344 is to “*establish a state policy which will encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawai'i.*”

HRS § 344-3 (Environmental policy) provides: It shall be the policy of the State, through its programs, authorities, and resources to:

*Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State’s unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i.*

*Enhance the quality of life by:*

- (D) *Establishing a commitment on the part of each person to protect and enhance Hawai'i’s environment and reduce the drain on nonrenewable resources.*

HRS § 344-4 (Guidelines) states: In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines:

- (2) *Land, water, mineral, visual, air, and other natural resources.*
  - (A) *Encourage management practices which conserve and fully utilize all natural resources;*
  - (B) *Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;*
  - (C) *Promote the recycling of waste water;*

**Discussion:** One of the purposes of the project is to close the LCCs which have been used for years for disposal of untreated sewage from Pāhala community. Although use of the LCCs has not resulted in known adverse effects to groundwater resources or the drinking water sources for the community, closure of the LCCs will remove this possible source of contamination. Thus, the Pāhala LCC Replacement Project will enhance the groundwater resources in the area. This will be compatible with the objective to prevent or eliminate damage to the environment. As discussed throughout Section 3, the Proposed Action will incorporate mitigation measures to protect and conserve natural resources.

#### **6.1.5 Hawai'i Coastal Zone Management Program**

The Coastal Zone Management (CZM) Program was created through passage of the Coastal Zone Management Act of 1972. Hawai'i’s CZM Program, adopted as HRS Chapter 205A, provides a basis for protecting, restoring and responsibly developing coastal communities and resources. The Hawai'i CZM area includes all lands within the state and the areas seaward to the extent of the state’s management jurisdiction. Thus, the Pāhala project is located in the CZM area.

A discussion of the project's consistency with the objectives and policies of the CZM Program is provided below.

(a) Recreational Resources

Objective:

*Provide coastal recreational opportunities accessible to the public.*

Policies:

- (E) *Improve coordination and funding of coastal recreational planning and management; and*
- i. *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by: 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 use 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.*

**Discussion:** All project locations are at least 3.3 miles from the shoreline and, as such, coastal recreational resources will not be affected.

(b) Historic Resources

Objective:

- (B) *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:

- (D) *Identify and analyze significant archaeological resources;*  
(E) *Maximize information retention through preservation of remains and artifacts or salvage operations; and*  
(F) *Support state goals for protection, restoration, interpretation, and display of historic resources.*



The wastewater collection system will be constructed primarily within the existing County streets within the Pāhala community which has been previously disturbed when the streets were constructed. Preliminary analysis shows the wastewater treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An AIS, which included subsurface testing, was conducted to confirm the presence or absence of archeological resources on the project site. The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface within the proposed treatment and disposal facility site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching. Under HRS § 6E-8, and in accordance with HAR § 13-275-7(a)(1), the County of Hawai'i DEM's project effect determination is "no historic properties affected." Construction will not proceed until SHPD has approved the AIS. For more information, please refer to Appendix D.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact SHPD, who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

(c) Scenic and Open Space Resources

Objective:

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

Policies:

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

(F) *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;*

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

(H) *Encourage those developments which are not coastal dependent to locate in inland areas.*

**Discussion:** All project locations are at least 3.3 miles from the shoreline and, as such, coastal scenic and open space resources will not be affected.

(d) Coastal Ecosystems

Objective:

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

Policies:

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

(G) *Improve the technical basis for natural resource management;*

(H) *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*

(I) *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*

(J) *Promote water quantity and quality planning and management practices that*

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*reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.*

**Discussion:** All project locations are at least 3.3 miles from the shoreline and, as such, coastal ecosystems will not be adversely affected.

(e) Economic Uses

Objective:

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

Policies:

(D) *Concentrate coastal dependent development in appropriate areas;*

(E) *Ensure that coastal dependent developments such as harbors and ports, and coastal related development such as visitor 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*

(F) *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:*

(iv) *Use of presently designated locations is not feasible;*

(v) *Adverse environmental effects are minimized; and*

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

**Discussion:** All project locations are at least 3.3 miles from the shoreline. The collection system and the wastewater treatment and disposal facility have been sited in suitable locations to serve the Pāhala community.

(f) Coastal Hazards

Objectives:

(A) *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*

Policies:

(C) *Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*

(D) *Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;*

(F) *Ensure that developments comply with requirements of the Federal Flood Insurance Program;*

(G) *Prevent coastal flooding from inland projects.*

**Discussion:** All project locations are at least 3.3 miles from the shoreline and at least 580 feet above mean sea level (msl). Based on the location, the proposed collection system and wastewater treatment and disposal facility will not be subject to (and will not exacerbate) coastal hazards and do not include improvements related to tsunami, storm waves, stream flooding erosion, subsidence and pollution.

(g) Managing Development

Objective:

- 
- (A) *Improve the development review process, communication, and public participation in the management of coastal resource and hazards.*

Policies:

- (D) *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (E) *Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and*
- (F) *Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

**Discussion:** In December 2017, a total of five community outreach sessions regarding the project were conducted in the Pāhala community. A public information meeting for the Draft EA was held in October 2018. All project locations are at least 3.3 miles from the shoreline. The collection system and wastewater treatment and disposal facility do not involve management of coastal resources and hazards.

(h) Public Participation

Objective:

- (B) *Stimulate public awareness, education, and participation in coastal management.*

Policies:

- (D) *Promote public involvement in coastal zone management processes;*
- (E) *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*
- (F) *Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

**Discussion:** In December 2017, a total of five community outreach sessions were conducted in the Pāhala community. A public information meeting for the Draft EA was held in October 2018. The County also conducted a meeting in March 2019 to gain further input from newly accessible property owners and to fulfill a County commitment made in October 2018 to research and provide financing options available to owners of parcels that will become newly accessible to the County collection system. All project locations are at least 3.3 miles from the shoreline.

(i) Beach Protection

Objective:

- (A) *Protect beaches for public use and recreation.*

Policies:

- (I) *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;*
- (J) *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*
- (K) *Minimize the construction of public erosion-protection structures seaward of the shoreline.*

**Discussion:** All project locations are at least 3.3 miles from the shoreline. The collection system and the wastewater treatment and disposal facility project does not include improvements that will affect public use beaches.

(j) Marine Resources

Objective:

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

Policies:

- (L) *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- (M) *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*
- (N) *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;*
- (O) *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*
- (P) *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

All project locations are at least 3.3 miles from the shoreline. The collection system and the wastewater treatment and disposal facility project does not include improvements that will affect development of marine and coastal resources.

## **6.2 Hawai'i County Land Use Plans and Policies**

### **6.2.1 Hawai'i County General Plan**

The existing General Plan was adopted in 2005. According to that plan, a comprehensive review process is to be initiated no more than 10 years after the previous review. A lot has happened on the Island of Hawai'i since 2005, including population growth, natural disasters, technological advancements, and the emphasis on sustainability. These factors are being considered in the 2015 General Plan. The Planning Director is responsible for leading the review process and recommending amendments to the Plan. Since this review has not been completed, the 2005 General Plan will be used for analysis.

The February 2005 General Plan serves as a policy document outlining long range comprehensive development on the Island of Hawai'i, providing broad goals, objectives, policies, and implementing actions that portray the desired direction of the County's future. Purposes of the General Plan include:

- *Guide the pattern of future development in this County based on long-term goals.*
- *Identify the visions, values, and priorities important to the people of this County.*
- *Provide the framework for regulatory decisions, capital improvement priorities, acquisition strategies, and other pertinent government programs within the County organization and coordinated with State and Federal programs.*
- *Improve the physical environment of the County as a setting for human activities; to make it more functional, beautiful, healthful, interesting, and efficient.*
- *Promote and safeguard the public interest and the interest of the County as a whole.*

- *Facilitate the democratic determination of community policies concerning the utilization of its natural, man-made, and human resources.*
- *Effect political and technical coordination in community improvement and development.*
- *Inject long-range considerations into the determination of short-range actions and implementation.*

The planning process utilized for the current comprehensive review and revision of the General Plan included an assessment of the General Plan elements relative to new data, laws, and methods of analysis. Each study element was then analyzed and evaluated in relation to all other elements, County and district goals, and the land use pattern. Potentially, a change in one element could affect other elements as well as the land use pattern. Similarly, a change in County and district goals could potentially be reflected in all elements and in the land use pattern.

The comprehensive review of the General Plan gathered and assessed the data related to each element to identify present conditions and problems and future possibilities. The study elements utilized in the General Plan included the following:

**Economic:** *Describes the human, capital, and natural resources used to produce goods and services for consumption in local and overseas markets.*

**Energy:** *Describes the energy situation for the County and explains the incentive for promoting energy conservation and the development of indigenous energy resources including solar, wind, hydrologic, and geothermal.*

**Environmental Quality:** *Identifies the factors affecting the island's environmental quality and describes the precautions and safeguards necessary to maintain and improve the quality of the environment for the physical, psychological, and social wellbeing of residents and visitors.*

**Flooding and Other Natural Hazards:** *Pertains to the conservation and protection of life, improvements, and natural resources from excess runoff due to either man-made improvements, natural causes, or inundation from tsunamis and heavy seas.*

**Historic Sites:** *Identifies sites and buildings of historical and cultural importance.*

**Natural Beauty:** *Identifies areas of unique natural beauty that are a principle asset of the island, and encourages programs for their conservation, preservation, and integration with other elements.*

**Natural Resources and Shoreline:** *Describes the valuable and often irreplaceable natural assets of the island and encourages programs for their proper management and protection.*

**Housing:** *Addresses the requirements for and the quantity, quality, and distribution of housing units in the County. This element also addresses critical housing problems of the County.*

**Public Facilities:** *Pertains to the location and distribution of facilities for education, public safety, social, health services and other government operations.*

**Public Utilities:** *Describes the distribution of power, light, and water; the collection and disposal of solid waste and sewage; and the provision of other communication utilities that are essential to the efficient functioning of a community.*

**Recreation:** *Examines the requirements of the County for active and passive outdoor activities, cultural events and pastimes, as well as attendant facilities and areas.*

**Transportation:** *Describes the requirements for air and water transport terminal facilities linking the County with the rest of the State and overseas areas, and the island's network of streets, highways, and roads.*

**Land Use:** *Studies the relationship of human activities to the uses of land and the location, spatial relationship, and topography. This element is subdivided into the following designations according to uses:*

**Agricultural:** *Encompasses all types of agricultural endeavors and specified industrial uses, residential and ancillary community and public and accessory uses.*

**Commercial:** *Comprised of industries in the retail trade and service categories and certain non-noxious enterprises from other industrial classifications.*

**Industrial:** *Includes uses that may not be compatible with commercial areas (such as manufacturing and processing, wholesaling, large storage and transportation facilities, power plants, and government baseyards) as well as other industrial, manufacturing, or wholesaling uses.*

**Multiple Residential:** *Includes duplexes, apartments, town houses and similar types of residential structures and ancillary community and public uses.*

**Open Space:** *Includes conservation lands, forest and water reserves, natural and scientific preserves, and potential natural hazard areas.*

**Public Lands:** *Includes Federal, State, County, and University owned lands.*

**Resort:** *Consists primarily of areas with basic amenities and attributes that attract developments of visitor accommodations and related facilities.*

**Single-Family Residential:** *Consists of single-family detached houses and ancillary community and public uses.*

**Discussion:** Based on the above, the Pāhala LCC Replacement project will be consistent with the Public Utilities element by providing a wastewater collection system designed to the applicable current standards used by the County. As previously described, the current collection system includes lines located the backyard of many of the parcels in the community. The County must obtain permission from each landowner to access lines on private property to inspect, maintain, repair, or replace the lines. The proposed collection system will be located within the public streets in the community or within accessible easements which allow the County to inspect, maintain, repair or replace the lines, all of which are essential to an efficient functioning community.

Pāhala currently disposes untreated sewage into LCCs, which have been banned by EPA. The proposed secondary treatment to replace the LCCs consists of aerated lagoons, a subsurface flow wetland, and a disinfection system. The disposal system consists of a slow-rate land application system that is a form of land treatment that is recognized by EPA. The treatment and disposal facility will provide a system to replace the banned LCCs which will be essential to an efficient functioning community.

The General Plan discusses sewers in Section 11.6. The plan states:

*Adequate sewer disposal systems are vital to safeguard public health and preserve the environment. An adequate system is one that minimizes contamination of both the groundwater supply and the coastal waters, beaches and waterborne recreational areas and is not a visual and odor nuisance.*

*About 77 per cent of the County's population is served by cesspools. There is an increasing need to create a better system than individual cesspools, particularly in highly*

*urbanized and shoreline areas. This is due to the possible pollution of groundwater as well as cesspool seepage into coastal waters. More stringent pollution controls, especially in water quality standards, are being imposed by regulatory agencies. The State Department of Health (DOH) intends to promulgate rules that will prohibit cesspools in the County of Hawaii. [In 2017, the State passed Act 125 requiring all cesspools statewide to be upgraded/closed by 2050.]*

*Hawai'i County presently operates municipal sewerage in Hilo, Pāpa'ikou, Kapehu, Pepe'ekeo and Kealakehe. The remaining communities are served by private wastewater treatment facilities or individual facilities such as cesspools or septic tanks.*

*In August 1991, the State Department of Health adopted rules that require the use of septic systems in the most critical wastewater disposal areas. Critical wastewater disposal areas are areas around the island where cesspools are permitted. Sewerage disposal system designs must be examined with the particular area in mind. However, it is important to note that the critical wastewater disposal areas may be eliminated in the near future when the State Department of Health implements the prohibition of cesspools.*

Specific standards are discussed in Section 11.6.3 Standards which includes the following.

- (a) Incorporate sewage works standards proposed in the "Sewerage Study for All Urban and Urbanizing Areas of the County of Hawai'i" and the "Water Quality Management Plan for the County of Hawai'i."*
- (b) Sewerage systems shall be designed for a particular area, depending on topography, geology, density of population, costs, and other considerations of the specific area.*
- (c) There shall be a minimum of visual and odor pollution emanating from sewerage treatment facilities.*
- (d) Applicable standards and regulations of the State Department of Health, Chapter 23 "Underground Injection Control."*
- (e) Applicable standards and regulations of the State Department of Health, Chapter 54 "Water Quality Standards."*
- (f) Applicable standards and regulations of the State Department of Health, Chapter 55 "Water Pollution Control."*
- (g) Applicable standards and regulations of the State Department of Health, Chapter 62, HRS, "Wastewater Systems."*
- (h) Applicable standards and regulations of Chapter 342, HRS; Act 282, Session Laws of Hawai'i 1985; and Act 302, Session Laws of Hawai'i 1986, Relating to Environmental Quality.*
- (i) All wastewater disposal systems shall conform to the applicable provisions of Chapter 11-62, Hawai'i Administrative Rules for the Department of Health to ensure proper treatment and disposal of wastewater and to prevent further contamination of waterways, underground water sources, and the coastal waters.*

**Discussion:** The proposed secondary treatment to replace the LCCs consists of aerated lagoons, a subsurface flow wetland, and a disinfection system. The disposal system consists of a slow-rate land application system that is a form of land treatment that is recognized by EPA. The treatment and disposal facility will be designed to meet rules and regulations applicable to the facility which will replace the banned LCCs. The design drawings and related calculations and analysis will be submitted to the DOH for review and comment. The design of the facility will require approval by the DOH before the DOH will issue an approval to operate the treatment and disposal facility.

## 6.2.2 Ka'ū Community Development Plan

The County of Hawai'i General Plan calls for the preparation of community development plans (CDPs) “to translate the broad General Plan statement to specific actions as they apply to specific geographical areas.” The Ka'ū CDP is one of nine CDPs for Hawai'i County. In October 2017, the Ka'ū CDP was adopted as Ordinance No. 2017-66. The purpose of CDPs is to implement the broad goals within the General Plan on a regional basis and to translate the broad General Plan statements into specific actions. CDPs are the forum for community input into managing growth and coordinating the delivery of government services to the community. CDPs designate detailed development patterns and direct physical development and public improvements by detailing land use policies and infrastructure priorities.

There are two types of County policies in the CDP:

1. “Land Use Policies” are the official land use policy guidance for the Ka'ū CDP planning area and shall be implemented through all County of Hawai'i actions. In addition, the Land Use Policies shall inform County recommendations to other agencies, including the State Land Use Commission regarding district boundary amendments, special permits, and other applications in Ka'ū.

There are two aspects of Land Use Policies:

**Policy Intent:** These are general statements that express policy aims or objectives. From a legal standpoint, these “hortatory” policies are open to interpretation when applied in specific instances.

**Policy Controls:** These limit the range of decisions that can be made in the future, like land use policies that specifically designate future settlement or transportation patterns. These binding, sometimes restrictive policy controls often include use of the term “shall,” which, from a legal standpoint, means the policy is imperative or mandatory.

The CDP distinguishes these two aspects of Land Use Policy. The applicable one is:

2. *“County Actions” are the official County policies to guide future County priorities and initiatives, including operating and capital budgets. These policies are not mandated, legally-binding, or self-implementing; rather, they often require additional legislative and administrative directives before being implemented (e.g., land acquisition, capital improvement appropriations, code changes, incentive measures).*

All of the CDP Land Use Policies are designed to preserve the preferred future settlement pattern and achieve the Community Objectives as Ka'ū grows. There are Land Use Policies designed to protect coastal areas, agricultural lands, mauka forests, scenic areas, sensitive ecosystems, cultural resources, and public access. The following Land Use Policies speak more generally to the preservation of the preferred settlement pattern in Ka'ū, including the relative location of residential, commercial, industrial, and resort areas.

A series of 15 policies are shown in the Ka'ū CDP to guide land uses within Pāhala. Figure 6.1 shows the land use policy map for Pāhala.

- Policy 1 Rehabilitate and develop within existing zoned urban areas already served by basic infrastructure, or close to such areas, instead of scattered development.*
- Policy 2 Concentrate commercial uses within and surrounding central core areas in Pāhala, Nā'ālehu, and Ocean View and do not allow strip or spot commercial development outside of the designated urban areas.*



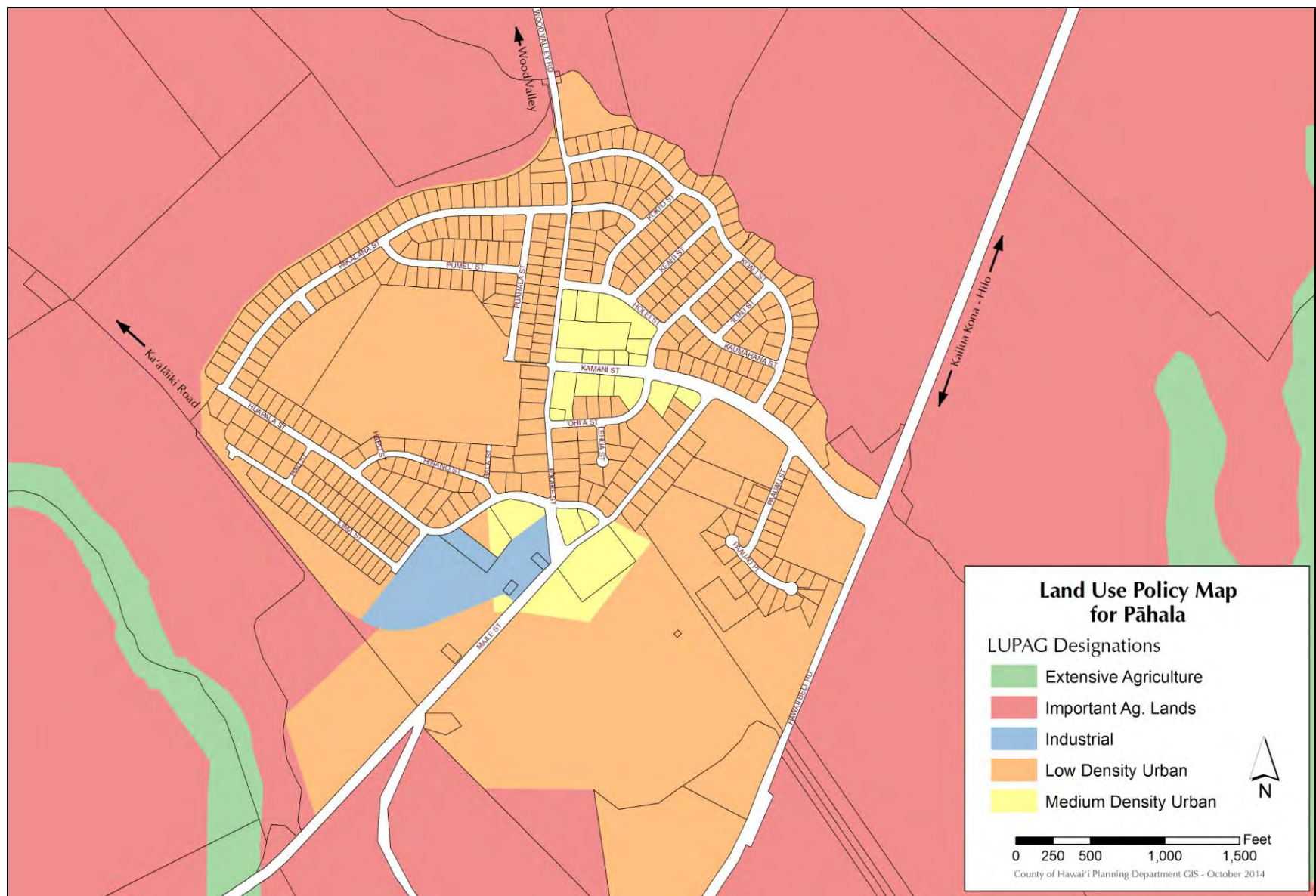


Figure 6.1. Community Development Plan Land Use Policy Map

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- Policy 3 Commercial facilities shall be developed in areas adequately served by necessary services, such as water, utilities, sewers, and transportation systems. Should such services not be available, the development of more intensive uses should be in concert with a localized program of public and private capital improvements to meet the expected increased needs.*
- Policy 4 Industrial development shall be located in areas adequately served by transportation, utilities, and other essential infrastructure.*
- Policy 7 With the adoption of the Ka'ū CDP, the Land Use Policy Map is adopted as the official policy for the Ka'ū CDP planning area. Future land use decisions in the Ka'ū CDP planning area shall be consistent with the Land Use Policy Map boundaries, designations, and policies herein, unless the CDP and the General Plan are in direct conflict.*
- Policy 8 In the "Low Density Urban (LDU)" Land Use Policy Map category in the Ka'ū CDP planning area, changes of zone shall only be permitted to Single-Family Residential (RS), Multiple-Family Residential (RM-7.5 or higher), Residential-Commercial Mixed Use (RCX-7.5 or higher), or Open (O).*
- In Pāhala, this policy supports a rezone of TMKs (3)9-6-002:016 & 023:034 from Agricultural (A-1a) and Industrial (ML-20 and MG-1a) to RS and/or O to take advantage of existing water and road infrastructure.*
- Policy 9 If infill capacity is exceeded in areas designated "Low Density Urban (LDU)" on the Land Use Policy Map in Pāhala, it would be appropriate to designate TMK (3)9-6-005:001 as LDU to take advantage of existing water and road connections.*
- Policy 39 The urban growth boundary between agricultural areas (designated "Important Agricultural Land" or "Extensive Agriculture") and developed areas (designated "Rural," "Low/Medium/High Density Urban," "Industrial," or "Resort") is parcel-specific in the Ka'ū CDP planning area, except at Punalu'u and the Low/Medium Density Urban and Industrial nodes in Ocean View. Areas outside designated developed areas shall be preserved as agricultural lands, open space, scenic view planes, and natural beauty areas, unless the CDP and the General Plan are in direct conflict.*
- Policy 44 Through permit conditions, development agreements, deed restrictions, and/or other means, ensure that areas in the "Important Agricultural Land" and "Extensive Agriculture" Land Use Policy Map categories continue to be utilized for agricultural uses and not for speculative or other residential development.*
- Policy 69 Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai'i.*
- Policy 70 Protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.*
- Policy 71 Review and comment by DLNR's State Historic Preservation Division (SHPD) shall be requested for any permit or entitlement for use which may affect any building, structure, object, district, area, or site that is over fifty years old, except as provided in HRS section 6E-42.2.*
- Policy 72 In the "Low Density Urban" (LDU) and "Medium Density Urban" Land Use*

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*Policy Map categories, in those cases where provisions of the zoning and subdivision codes are inconsistent with the character of surrounding neighborhoods, variances or PUDs that maintain consistent village/town character should be encouraged.*

- Policy 73 The development of commercial facilities should be designed to fit into the locale with minimal intrusion while providing the desired services. Appropriate infrastructure and design concerns shall be incorporated into the review of such developments.*
- Policy 74 As appropriate to maintain community character while also accommodating drainage, walkability, maintenance, and other site-specific needs when improving existing roads in Pāhala, Nā'ālehu, and Wai'ōhinu, retain the current road design, including pavement width and lack of curbs, gutters, sidewalks, or paved shoulders and swales.*
- Policy 75 As appropriate to maintain community character while also accommodating drainage, walkability, maintenance, and other site-specific needs, new roads (both public and private) in the Ka'ū CDP planning area may be constructed without curbs, gutters, sidewalks, or paved shoulders and swales.*
- Policy 90 Implement protocols for receiving community input at meetings in Ka'ū during capital project siting and design. Consult with and solicit input from community members with generational knowledge to minimize the impact of proposed changes to the use of land on cultural practices, cultural sites, and culturally significant areas, including burials.*

**Discussion:** The Pāhala LCC Replacement Project is consistent with land use policies as the improvements are designed to serve the designated areas shown in the Land Use Policy Map, which shows Pāhala as primarily low density urban. The collection system and the wastewater treatment and disposal facility will be consistent with the policy related to infill of commercial development within the Pāhala community. The collection system improvements are consistent with the policy to maintain the community character as the improvements will retain the existing pavement, including retention of streets, shoulders, and drainage systems.

Section 4.3 of the CDP protects agricultural land and open space from non-agricultural development with the CDP Land Use Policy Map, urban growth boundaries, limits on Special Permits and lots sizes, and restrictions on residential development. It also prioritizes agricultural subdivision standards, revisions in water catchment variance rules, stronger farm dwelling regulations and tax incentive programs, development of transfer of development rights and land bank programs, State Important Agricultural Land designations, and expedited lot consolidation in existing rural subdivisions.

- Policy 40 Special permits of any kind in the "Important Agricultural Land" and "Extensive Agriculture" Land Use Policy Map categories should not be permitted in the Ka'ū CDP planning area, except for the following uses (as defined in HCC chapter 25):*
- Agriculture and Related Economic Infrastructure: Animal hospitals, Veterinary establishments, Fertilizer yards utilizing only manure and soil, for commercial use*
  - Cottage Industry related to Agriculture: Bed and breakfast establishments, Guest ranches, Lodges, Home occupations*
  - Community Facilities: Community buildings, Public uses and structures, Shooting ranges, ATV courses (in areas without cultural,*

*natural resource, or scenic value)*

- *Quarries whose permit conditions address geotechnical, engineering, safety, private road use, oversight, and any site-specific issues.*
- *Urban Uses in Ocean View: Uses consistent with the LDU, MDU, and Industrial LUPAG categories indicated on the Ka'ū CDP Land Use Policy Map in Ocean View, until the SLU boundaries are amended (from Agriculture to Urban).*

*The Planning Commission shall also include in any Special Permit approval (or recommend for approval to the State Land Use Commission) appropriate performance conditions to achieve CDP objectives and implement CDP policies. (HRS 205-6(c) and Planning Commission Rules 6-3(a)(5)(G), 6-7, & 6-8)*

**Discussion:** The collection system and the wastewater treatment and disposal facility will be owned the County of Hawai'i and managed and operated by the County of Hawai'i DEM. As such, the improvements will be a public use and structure. The DEM will file a Special Permit for review and approval by the County Planning Commission.

Section 5 of the CDP prioritizes improvements in infrastructure, facilities, and services, including Section 5.8 applicable to Environmental Management as shown below.

- *Environmental management facilities, including expanded sewer lines, the Ocean View transfer station, green waste facilities, and improvements in the Pāhala transfer station*

*Policy 120 Extend the primary wastewater collection lines in Pāhala and Nā'ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems.*

**Discussion:** The collection system will be consistent with Policy 120 as the improvements for the Pāhala LCC Replacement Project have been designed not to preclude expansion to accommodate the Pāhala community. Similarly, the wastewater treatment and disposal facility has been designed not to preclude expansion to accommodate the future needs of the Pāhala community. Future subdivisions would be accommodated, as capacity allows, on a first-come, first-served basis.

Further, the Preliminary Engineering Report (PER) Section 5.6 (Appendix B) provides information related improvements needed to wastewater services to the Pāhala community as envisioned in the CDP. The PER Section 5.6.2 states:

“To accommodate the flow increase anticipated from the full buildout of the Pāhala wastewater collection system, the [wastewater treatment and disposal facility] (WWTP) will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the 14.9-acre site. Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solid recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater opportunity for contact between the naturally-occurring micro-organisms in the lagoon and dissolved organic matter. As a result, complete mix lagoons provide greater levels of treatment within a smaller volume than partial mix lagoons. However, facilities must be provided downstream of complete mixed lagoons to allow removal of settleable solids from the water column. To provide a place for solid settling, lagoons 2 through 4 will continue to act as partial mix aerated lagoons downstream of the complete

mix lagoon 1. Lagoon 4 will require no aeration and will continue to be covered to deprive algae of sunlight and allow suspended solids to settle out of the system effluent. Utilizing this lagoon system approach, the Pāhala WWTP will require modification at full buildout flow, but is not anticipated to expand beyond the initial build 14.9-acre site.”

### **6.2.3 County of Hawai'i Zoning**

Hawai'i County Code (HCC) Chapter 25 regulates land use in accordance with adopted land use policies. The code presents permitted uses and structures, development standards, and height controls for each zoning district.

The wastewater treatment and disposal facility will be owned the County of Hawai'i and managed and operated by the County of Hawai'i DEM. The facility will be a “public use” as defined by HCC § 25-1-5, as a use conducted by or a structure or building owned or managed by the federal government, the State of Hawai'i or the County to fulfill a governmental function, activity or service for public benefit and in accordance with public policy.

HCC § 25-2-71 (c)(1) states: *Plan approval shall be required in all applicable districts prior to the construction or establishment of public uses, structures and buildings and community buildings, as permitted under section 25-4-11.*

HCC § 25-4-11(c) states: *Public uses, structures and buildings and community buildings are permitted uses in any district, provided that the director has issued plan approval for such use.*

### **6.2.4 County of Hawai'i Special Management Area**

Pursuant to the Hawai'i CZM Program, HRS Chapter 205A, the counties have enacted ordinances establishing Special Management Areas (SMAs) that are in close proximity to the shoreline. Any “development” within the SMA requires an SMA Use permit administered by the County of Hawai'i Planning Department. Through the SMA permit system, the County assesses and regulates developments proposed for areas located within the SMA. The Pāhala LCC Replacement Project is located within the Pāhala community which lies about 3.8 miles from the shoreline area and is not located within an SMA. As such, the project will not be subject to requirements of an SMA use permit.

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## 7 PUBLIC PARTICIPATION

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### 7.1 Community Outreach Program

A community outreach program was conducted to exchange information about the Pāhala Large Capacity Cesspool (LCC) Replacement Project and to work with affected residents and the general community on how to implement the project on both personal and community levels.

These talk story sessions are designed to optimize community conversations in informal and comfortable sessions. The first round of community outreach on the current effort to implement the Pāhala LCC Replacement Project included five sessions as follows:

1. Tuesday, December 12, 2017 at 6:00 p.m. – Ka'ū Gym Multi-Purpose Conference Room
2. Wednesday, December 13, 2017 at 10:00 a.m. – Pāhala Community Center
3. Wednesday, December 13, 2017 at 6:00 p.m. – Pāhala Community Center
4. Thursday, December 14, 2017 at 10:00 a.m. – Ka'ū Gym Multi-Purpose Conference Room
5. Thursday, December 14, 2017 at 6:00 p.m. – Pāhala Community Center

The target outcomes for the first round of engagement were the following:

- **Assure residents the project team was there to listen.** In these talk story sessions, the project team emphasized the need to listen to understand the community and how to continue conversations. Further, the project team stressed in each session that these community outreach discussions are taking place very early in the planning and implementation process. Hence, it was stressed that, while there may be limited information at this time, the team was there to listen and convey questions and comments to Department of Environmental Management (DEM). That way, in the next round of meetings, DEM will be able to provide more information to address community concerns.
- **Help residents understand what is being proposed.** It was important to present project information in ways that are simple, accurate, relevant and conducive to continuing dialogue.
- **Establish a point of departure to move towards future actions and solutions.** Pāhala residents have had different experiences with wastewater disposal over the years. For some, they transitioned from a plantation-operated system to a County-run operation. For others, they installed their own systems. The talk story sessions were intended to clearly differentiate between previous efforts and the current proposed project.
- **Comply with U.S. Environmental Protection Agency (EPA) deadline of December 15, 2017, to hold initial public meeting.** DEM and EPA established a schedule for completion of key milestones. The talk story sessions comprised several initial public meetings and were organized to comply with this schedule. The approach was intended to initiate a process that engages all Pāhala residents, while recognizing that the project will affect some people directly during construction and operation of the new collection system and new wastewater treatment and disposal facility.

Invitations and announcements for the talk story sessions were intended to reach all audiences, as follows:

- Property owners with C. Brewer lines on their property were mailed letters from DEM inviting them to these sessions. The letters included stamped, mail-in postcards to facilitate the RSVP process.
- Fliers were hand-delivered to “newly-accessible properties.”
- Organizational leaders were provided copies of fliers announcing meetings and asked to circulate among their members.
- Fliers were posted in public venues, such as the post office, the Pāhala Community Center and the Ka'ū Hospital.
- Several online announcements were included in Ka'ū News Briefs available at <http://haunewsbriefs.blogspot.com/>.

The format for each meeting was as follows:

1. **Introductions and Pāhala relationship:** Participants were asked to introduce themselves and describe their relationship to Pāhala. They were encouraged to talk about generational presence, length of residence, schools and so on.
2. **Life in Pāhala:** Participants were asked to discuss:
  - What they valued most about Pāhala;
  - Pāhala's biggest challenges; and
  - Their ideas and vision for the future of Pāhala.
3. **Experience with the existing sewer system:** Participants were asked to share their recollections and experience with wastewater disposal in Pāhala. They were also asked to share what they knew about the proposed project.
4. **The proposed project:** Project background and overview were presented in a slide presentation.
5. **Questions and comments:** Project representatives encouraged participants to ask questions and voice their reactions.
6. **What one message do you want DEM to hear?** Each participant was asked to share “one thing” that they wanted to share with the County.

This first round of community outreach met the following objectives:

- Residents understood the project team was there to listen. Participants responded enthusiastically to questions about Pāhala, and openly discussed previous experience with wastewater disposal in their town and concerns and views about the proposed project. When the project team could not respond to questions, participants were assured that their comments were noted and there will be follow up.
- Those who attended appeared to have acquired at least a rudimentary understanding about how the new collection, treatment, and disposal system would work. They were able to ask questions about transmission of wastewater to the treatment and disposal facility, and how the lagoons and land disposal system would work. Participants indicated they



knew that this system is different from wastewater disposal systems they may have previously experienced.

- Participants were able to discuss their understanding, or lack thereof, of the wastewater system and their own personal situation. By the end of each session, they expressed understanding that the proposed project is a departure from previous discussions and current operations.
- The milestone date for an initial community meeting (December 15, 2017) was met.

Online and paper versions of the Ka'ū News Briefs and the Ka'ū News Calendar reported on these meetings.

The proposed project was modified in response to the community input received and was described in the Draft Environmental Assessment (EA). A second round of meetings with the community was conducted in concert with the Draft EA public review and comment period (see Section 7.2 below).

Based on the first round of community outreach, the following community outreach activities have been conducted to continue to engage constructive and meaningful community input.

- **Information Follow-up.** Project representatives made a commitment to follow up on topics raised in the first round of community outreach. The following lists how topics were addressed in the Draft EA or other forms of communication.
  - *Site selection process.* Several participants asked why the tentative site was selected and suggested other sites. It is recommended that a summary table of previously considered sites and selection rationale, as well a related map, be presented. See Section 2 for site selection discussion.
  - *Flooding at tentative site.* Participants claimed that this site is prone to flooding. If possible, there should be some response. See Section 3.9 for further discussion.
  - *Cost range and homeowner assistance possibilities.* Property owner participants had many questions about how project implementation would affect them financially and personally. In response, the DEM convened separate meetings in October 2018 with property owners of 1) former C. Brewer properties with sewer lines that will connect to the proposed collection system and 2) "Newly accessible" properties that front roadways in which new sewer lines will be located. Hawai'i County Code (HCC) Chapter 21, Sewers, Section 21-5 requires that when new sewer lines are placed in public roadways, properties fronting such roadways must connect to these lines. An additional meeting was held by DEM in March 2019 to discuss funding programs available to owners of newly accessible parcels.
  - *Clarification on sewer fee structure.* There was often confusion about who pays what and why. Information on the fee structure should be presented clearly.
  - *Short-and long-term impact on macadamia nut cultivation.* It is recommended by the participants that a preliminary order of magnitude cost of project impact be estimated and presented in terms of the overall macadamia nut cultivation operation in Pāhala. Further, the project team should describe, in general terms, the possible lease arrangements with the future macadamia nut operator.
  - *Conceptual plan of full buildout.* Participants were concerned that the tentative site is not large enough to support serving all Pāhala, while still maintaining visual buffers. It is recommended that a very preliminary schematic be presented that shows full

- buildout. As discussed in Section 4.1, the Ka'ū Community Development Plan calls for expansion to accommodate future needs but does not present a timeline for this expansion. As of this writing, no substantial planning or scoping of a collection system expansion has been conducted and this expansion is unlikely to occur within the next 10 to 20 years. This action was therefore excluded from the analysis of cumulative improvements and impacts.
- Other topics raised in the first round of community outreach tended to be related to details that will be determined as the project nears implementation. These topics are as follows, and information will be shared with the community when it becomes available.
    - *Conditions of existing pipes.* Participants raised questions about what was on their property and possible problems. It is recommended that information on previous County evaluation and potential future assessments be made available prior to or during construction.
    - *Possible land application trees.* Some information has already been provided, and status of selecting trees should be provided.
    - *Fencing around perimeter of wastewater treatment and disposal facility.* Options for fence location, height, and materials should be provided.
    - *Tour of Honokaa wastewater treatment plant.* Residents showed interest in attending a tour of the Honokaa plant with DEM and the project team.
  - **Next Round of Meetings.** The next round of community meetings was conducted upon publication of the Draft EA (see below):
    - *Information meeting on the Draft EA.* The community had two opportunities to provide comments on this Draft EA. First, public notification was posted in local media, public venues, and mailed to property owners directly affected by the Proposed Action. These notifications included information on how the public could access the Draft EA on the Office of Environmental Quality Control (OEQC) website and submit comments. Second, DEM convened a voluntary and optional informational meeting.
    - *Meeting with property owners who will be directly affected by the proposed project.* As noted earlier, DEM convened separate meetings with property owners of 1) former C. Brewer properties with sewer lines that will connect to the proposed collection system and 2) “newly accessible” properties that front roadways in which new sewer lines will be located. The purpose of these meetings was to discuss how the proposed project will affect individual property owners in terms of cost, financing and logistics, such as construction timing and activities.

## 7.2 Outreach Since the Publication of the Draft EA

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 public information meeting were mailed to all property owners on record adjacent to the proposed collection system. This direct mailout included an invitation from DEM to workshops conducted prior to the October 10 public information meeting. The workshop for owners served by C. Brewer lines was held on October 8, and the mailout for this meeting also included anyone with a current sewer account. The workshop for owners of newly accessible properties was convened on October 9. In addition to the direct mailout, online announcements for the October 8 and 9 workshops were available on the Ka'ū News Briefs

website. Fliers were posted in public venues such as the community shopping center, realtor office, grocery store, library, and the Pāhala Community Center.

On September 26, 2018, a public notice was published in both the Hawaii Tribune Herald and West Hawaii Today to advertise the October 10, 2018 public information meeting conducted by the County in Pāhala at the Ka'ū Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA and process for submitting comments. A public notice was also published in the October 1, 2018 online and print editions of the Ka'ū Calendar and made available on the Ka'ū News Briefs web site <http://kaunewsbriefs.blogspot.com>.

All materials circulated, posted and published for the October 2018 meetings included the electronic link to the Draft EA at <http://health.hawaii.gov/oeqc/>. The Draft EA was made available online on the County of Hawai'i and EPA websites and in public libraries in Nā'ālehu and Pāhala beginning on September 23, 2018. Upon public request, 11 printed copies of the Draft EA were made available at both the Nā'ālehu and Pāhala libraries on November 7, 2018. The County's transmittal requested the library make the copies available for checkout. The Draft EA was also posted on the County of Hawaii and EPA websites at:

- <http://records.co.hawaii.hi.us/weblink/1/edoc/96064/Pahala%20FINAL%20DRAFT%20EA%20and%20Appendices%20508%209-11-18.pdf>
- <https://www.epa.gov/uic/proposed-pahala-community-large-capacity-cesspool-replacement-project-draft-environmental>

The County provided staff at the October 10, 2018, public information meeting to personally assist commenters in preparing written comments on the Draft EA. In addition, during this meeting, the County identified community volunteers attending the meeting who were proficient in Hawaiian, Tagalog, and English to assist anyone who identified as needing assistance in providing written comments on the Draft EA.

The public notice also stated that a second part of the meeting on October 10, 2018 would address Section 106 of the National Historic Preservation Act (NHPA) involving consultation with Native Hawaiian Organizations and Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, or cultural religious attachment to the proposed project area. Eight persons placed their names on a sign-in sheet to contribute during the Section 106 part of the meeting; however, no comments or information from the public were forthcoming during this meeting.

On October 26, 2018, letters were mailed to property owners on record adjacent to the proposed collection system informing them of the republished Draft EA and extension of the public comment period to December 10, 2018. Further, on November 8, 2019, the OEQC *The Environmental Notice* noted the republication of the Draft EA.

The County voluntarily convened an additional public meeting in Pāhala on March 21, 2019. The purpose of this meeting was to gain further input from newly accessible property owners and to fulfill a County commitment made in October 2018 to research and provide financing options available to owners of parcels that would become newly accessible to the County collection system. At the meeting, DEM provided the preliminary results of the County investigation into funding sources and options available for newly accessible property owners once the new collection system and wastewater treatment and disposal facility have been designed, permitted and constructed. Available programs discussed included:

- U.S. Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program – Community Block Grant Program, and
- U.S. Department of Agriculture – Rural Development (USDA-RD) Program.

As noted during the March 2019 presentation, these programs may change in the coming years and additional options may be added to this preliminary list. Hawai'i Legislature, Senate Bill 221 SD1, which could amend Hawai'i Revised Statutes (HRS) Chapter 342D to establish a low-interest loan program offering financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health (DOH), was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

### **7.3 Response to Comments and Revisions to the Draft EA**

The Draft EA was released for public comment on September 23, 2018. Initially, a 30-day public comment period was planned; however, due to requests from the public for additional time, EPA and the County of Hawai'i agreed to republish the Draft EA on November 8, 2018 which extended the comment period. The comment period closed on December 10, 2018. Appendix E includes the EPA and County responses to comments received on the Draft EA on or before that date. In total, 77 comment letters were received, some of which included multiple individual or duplicate comments.

No substantial changes to the Proposed Action were necessary as a result of comments on the Draft EA. However, in response to comments received, the Final EA incorporates revisions to provide clarity through minor text changes and to provide additional information where necessary. Please refer to Appendix E for additional information. Additionally, the Final EA incorporates revisions to reflect minor changes to the scope of the Proposed Action (e.g., the use of ultraviolet instead of chlorine disinfection); to reflect the outcomes of consultations with state and federal agencies (e.g., Section 106 of the NHPA, Section 7 of the Endangered Species Act); and to provide additional clarifications and supporting statements beyond those specifically in response to comments. These revisions do not change any of the key findings presented in the Draft EA.

## 8 FINDINGS AND DETERMINATION

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### 8.1 Chapter 343, Hawai'i Revised Statutes (HRS) – Department of Environmental Management (DEM) Finding of No Significant Impact (FONSI)

Short-term construction impacts include disruption to the project site and surrounding areas during construction, decline in air quality from construction activities, and increase in noise levels. Once construction has been completed, the short-term adverse impacts will no longer occur.

Based on analysis of the impacts, the County has determined a Finding of No Significant Impact (FONSI) for the Pāhala Large Capacity Cesspool (LCC) Replacement Project. The significance criteria to make this determination are set forth below and in Hawai'i Administrative Rules 11-200 (Environmental Impact Statement Rules).

#### 8.1.1 Significance Criteria

1) *Involve an irrevocable commitment to loss or destruction of any natural or cultural resources;*

The Pāhala LCC Replacement Project collection system and wastewater treatment and disposal facility sites do not provide habitat for federal or State of Hawai'i listed or candidate threatened or endangered species of flora or fauna. The collection system will be constructed primarily within areas that were disturbed during construction of the existing County streets, plus three short segments within easements in the Pāhala community. The treatment and disposal facility site has previously been cleared, graded, and planted with a macadamia nut orchard. Thus, the proposed use of the Pāhala LCC Replacement Project sites will not result in the loss or destruction of natural resources.

Preliminary analysis shows the treatment and disposal facility will be constructed in an area that is unlikely to contain archaeological resources due to historical ground modifications. However, an Archaeological Inventory Survey (AIS), including subsurface testing, was conducted to test for the presence of archaeological resources on the project site. In March 2019, following completion of the AIS, and in accordance with Section 106 of the National Historic Preservation Act (NHPA), the County submitted the AIS for review by the Hawai'i State Historic Preservation Division (SHPD) to determine whether additional mitigation measures are appropriate to avoid or minimize adverse effects to archaeological resources.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, or concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact the Hawai'i SHPD (at 808.981.2979), who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

Based on the above, and the findings of the AIS, construction of the wastewater treatment and disposal facility and related improvements is determined to have no effect on historic properties.

2) *Curtail the range of beneficial uses of the environment;*

The Pāhala LCC Replacement Project sites will use lands within the Pāhala community that have been used for County streets and planted with a macadamia nut orchard for a number of years. The treatment and disposal facility will occupy a total area of 14.9 acres within a portion the macadamia nut orchard. The remainder of the orchard will still be available for the production of

macadamia nuts. Thus, the Pāhala LCC Replacement Project will not curtail the beneficial uses of the environment.

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

The Pāhala LCC Replacement Project will not involve actions or activities that would adversely affect natural resources of the project sites. The Pāhala LCC Replacement Project will be consistent with the guidelines of Hawai'i Revised Statutes (HRS) 344, as it will provide treatment and disposal for wastewater from the Pāhala community. Moreover, the Pāhala LCC Replacement Project will construct a wastewater collection system according to County standards and a treatment and disposal facility according to DOH guidelines. Lastly, the Pāhala LCC Replacement Project will allow closure of LCCs that have been used to dispose untreated sewage into the subsurface. As such, the Pāhala LCC Replacement Project will not conflict with the state's long-term environmental policies or goals as expressed in HRS 344.

4) *Substantially affect the economic or social welfare of the community or state;*

The Pāhala LCC Replacement Project will allow the County to provide wastewater collection, treatment and disposal facilities meeting the needs of the Pāhala community. It will be an integral part of the infrastructure needed to maintain the health and welfare of the Pāhala community. Therefore, the Pāhala LCC Replacement Project will have a beneficial impact on the economic and social welfare of the community.

5) *Substantially affect public health;*

Pāhala LCC Replacement Project will involve the design, construction and operation of wastewater collection, treatment and disposal facilities that will maintain and enhance the public health of the Pāhala community. Thus, the Pāhala LCC Replacement Project will have a beneficial effect on public health.

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

The Pāhala LCC Replacement Project will be a public facility serving the Pāhala community. For the most part, construction of the Pāhala LCC Replacement Project is expected to involve the use of local contractors, which means that there will not be an extensive secondary effect on the population of the Island of Hawai'i or the Pāhala community. Thus, construction of the Pāhala LCC Replacement Project will not create secondary impacts, such as population changes or effects on public facilities.

7) *Involve a substantial degradation of environmental quality;*

The Pāhala LCC Replacement Project is anticipated to result in short-term impacts to noise, air quality, and traffic in the immediate vicinity of the project site during the period of construction. The collection system and the treatment and disposal facility sites do not contain federal or state-listed or candidate threatened or endangered species of flora or fauna. As discussed under Criterion #1, the project is determined to have no effect on historic properties, in accordance with the outcome of the NHPA Section 106 consultation and findings of the AIS.

Based on the above findings, the Pāhala LCC Replacement Project will not result in a substantial degradation of environmental quality.

8) *Have a cumulative effect upon the environment or involves a commitment for larger actions;*

The Pāhala LCC Replacement Project does not involve a commitment to further actions to other County of Hawai'i related projects in the vicinity. As a result, the Pāhala LCC Replacement Project will not have a cumulative effect upon the environment or involve a commitment by the County to larger actions.

9) *Affect a rare, threatened or endangered species;*

The Pāhala LCC Replacement Project sites do not contain federal or state-listed or candidate threatened or endangered species of flora. Also, the Pāhala LCC Replacement Project sites do not provide habitat for federal or state-listed or candidate threatened or endangered species of fauna. On February 15, 2019, the U.S. Fish and Wildlife Service (FWS) provided a letter that concluded that FWS has analyzed potential impacts to listed species due to the implementation of Pāhala LCC Replacement Project. Based on the inclusion of the avoidance and minimization measures, FWS stated that any potential impacts will be discountable or insignificant and therefore concurred that the Pāhala LCC Replacement Project may affect, but is not likely to adversely affect the endangered Hawaiian hoary bat, Hawaiian Hawk, Hawaiian goose, Hawaiian Petrel, Band-rumped Storm-Petrel, Hawaiian Stilt, and Hawaiian Coot, and the threatened Newell's Shearwater. The Pāhala LCC Replacement Project will incorporate the avoidance and minimization measures cited in the FWS letter, including (but not limited to) avoiding impacts to potential Hawaiian hoary bat habitat during the bat birthing and pup rearing season; conducting a Hawaiian hawk nest survey prior to any work during the nesting season; avoiding activities near active nests; and avoiding nighttime construction during the seabird fledging period.

10) *Detrimentially affect air or water quality or ambient noise levels;*

Operation of construction equipment will increase noise and exhaust emission levels in the immediate vicinity of the Pāhala LCC Replacement Project sites during the construction period. Once construction has been completed, the Pāhala LCC Replacement Project will contribute almost no additional noise or air emissions to the local area or detrimentally affect air or water quality. The treatment and disposal facility will include an odor control system to limit odors typically associated with a wastewater treatment facility.

11) *Affects or likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geographically hazardous land, estuary, fresh water or coastal water;*

The Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows the Pāhala area is located in Zone X, area of minimal flood hazard above the 500-year flood level. This was confirmed by the County of Hawai'i Department of Public Works. A small portion of the collection system site is located within the Zone X defined as areas of 0.2-percent annual chance flood; areas of 1-percent annual chance flood with average depths of less than 1 foot.

The Pāhala LCC Replacement Project sites are not located within the tsunami evacuation zone. The sites are also outside of the County of Hawai'i Special Management Area and coastal shoreline area. Thus, the Pāhala LCC Replacement Project sites are not located in an environmentally sensitive area.

12) *Substantially affect scenic vistas and viewplanes identified in county or state plans or studies;*

The wastewater collection system will be within the County roadways beneath the surface of the travelways. Thus, the collection system will not affect viewplanes in the Pāhala area.

The treatment and disposal facility will consist of an operations building, headworks with a cover structure, aerated lagoons, subsurface constructed wetlands, UV disinfection system with a cover

structure, and a series of slow-rate land application basins with planted trees. The operations building, headworks cover structure, UV disinfection system cover structure, and low berms around the basins will be the only above-grade structures. The existing Cook pine trees along Maile Street, most of which will remain with no changes, will continue to obstruct the viewplanes from Maile Street. The facility site will be adjacent (mauka) to, and visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane will be mitigated by the planted trees in the basins and by the rise in elevation between the highway and the facility. Thus, development of the Pāhala LCC Replacement Project sites will not present an adverse impact to the public views from other areas.

13) *Require substantial energy consumption.*

The Pāhala LCC Replacement Project is a new facility that will be planned and designed to minimize use of electrical power. Thus, it will not create a substantial increase in energy consumption.

### **8.1.2 Determination**

Based on these findings and the assessment of potential impacts from the Pāhala LCC Replacement Project, the project does not require preparation of an Environmental Impact Statement and a FONSI is determined.

## **8.2 National Environmental Policy Act – EPA Finding of No Significant Impact (FONSI)**

In 2006, a U.S. Environmental Protection Agency (EPA) Special Appropriations Act Project (SAAP) grant was awarded to the County of Hawai'i for the Ka'ū LCC Replacement Project (XP-96942401). The grant's federal funding amount is \$1.842 million and currently expires in October 2020. The purpose of the award is for the design and construction of wastewater system improvements to replace LCCs in the Ka'ū District. The grant award and current work plan provide funding to replace the LCCs serving the Pāhala community.

EPA's award of a grant for the Pāhala LCC Replacement Project is a federal action requiring compliance with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4347. In accordance with NEPA, Council on Environmental Quality (CEQ) Regulations at 40 Code of Federal Regulations (CFR) §§ 1500-1508, and EPA NEPA regulations at 40 CFR Part 6, EPA and the County prepared a Draft EA describing the potential environmental impacts associated with, and the alternatives to, the proposed project. The Draft EA included a preliminary FONSI in Section 8.2 that documented EPA's finding that the proposed project is not expected to have a significant effect on the environment. In accordance with 40 CFR 6.203(b)(1), the preliminary FONSI was made available for public review and comment through the Draft EA comment period. The Final FONSI has been prepared separately from the Final EA and will be available on EPA's website and through public notice.



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## 9 LIST OF PERMITS AND APPROVALS

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### **State of Hawai'i Department of Health**

Approval to Construct

Approval to Use

National Pollutant Discharge Elimination System Construction Stormwater Permit

Underground Injection Well Abandonment

Noise Permit

Noise Variance (only if required)

### **County of Hawai'i**

Special Permit

Plan Approval

Grading Permit

Building Permit

Electrical Permit

Plumbing Permits

Fence Permit

Sign Permit (only if required)

Permit to Work Within County Right-of-Way

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## 10 CONSULTED PARTIES

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### 10.1 Pre-Assessment Consultation

In accordance with the requirements of Hawai'i Administrative Rules Title 11 (State of Hawai'i Department of Health), Chapter 200 (Environmental Impact Statement Rules), Section 9 regarding early consultation, the following agencies were consulted during the pre-assessment phase of the Draft Environmental Assessment (EA). Each agency was sent a copy of a project summary and a request for their written comments on the project. Those who formally replied are indicated with a ▲. All written comments and responses are reproduced in Appendix A.

#### Federal

- ▲ U.S. Army Corps of Engineers
- ▲ U.S. Fish and Wildlife Service (FWS)
- U.S. Department of Agriculture National Resources Conservation Service
- National Oceanic and Atmospheric Administration
- National Park Service Hawai'i Volcanoes National Park

#### State of Hawai'i

- Department of Agriculture
- Department of Business, Economic Development and Tourism (DBEDT)
  - DBEDT, Hawai'i State Energy Office
  - DBEDT, Land Use Commission
  - ▲ DBEDT, Office of Planning
- ▲ Department of Accounting and General Services
- Hawai'i Emergency Management Agency
- Department of Health (DOH)
  - DOH, Office of Environmental Quality Control
  - DOH, Office of Director
  - DOH, Environmental Management Division
  - ▲ DOH, Environmental Planning Office
  - ▲ DOH, Clean Water Branch
  - ▲ DOH, Safe Drinking Water Branch
  - ▲ DOH, Wastewater Branch
- ▲ Department of Land and Natural Resources (DLNR)
  - ▲ DLNR, Engineering Division

▲ DLNR, Division of Forestry and Wildlife  
DLNR, State Historic Preservation Division  
DLNR, Commission on Water Resources Management

Office of Hawaiian Affairs

▲ Department of Transportation  
▲ Department of Hawaiian Home Lands  
University of Hawai'i, Environmental Center  
Hawai'i State Library  
Hilo Regional Library

#### County of Hawai'i

▲ Hawai'i Fire Department  
Department of Parks and Recreation  
▲ Planning Department  
▲ Police Department  
▲ Department of Public Works  
▲ Department of Water Supply

#### Elected Officials

Congresswoman Tulsi Gabbard  
State Senator Russell Ruderman  
State Representative Richard H.K. Onishi  
Councilmember Maile David

#### Native Hawaiian Organizations

Hawai'i Island Burial Council  
Association of Hawaiian Civic Clubs  
Charles Pelenui Mahi 'Ohana  
Friends of 'Iolani Palace  
Hawaiian Civic Club of Hilo  
Kamehameha Schools  
Kanu o ka'Āina Learning 'Ohana  
Ko'olau Foundation  
Maku'u Farmers Association  
Na Koa Ikaika Ka Lāhui Hawai'i

Office of Hawaiian Affairs  
Pacific Agricultural Land Management Systems  
Partners in Development Foundation  
Pi'ihonua Hawaiian Homestead Community Association

Other

Hawai'i Gas  
Hawaiian Electric Light Company  
Hawaiian Telcom  
Spectrum Hawai'i  
Mr. Stason Nishimura  
Mr. Lance Uno  
Ms. Julia Neal

**10.2 Agencies and Organizations Consulted on the Draft EA**

Availability of the Draft EA for review and comment was published in the Office of Environmental Quality Control *Environmental Notice* dated September 23, 2018. The U.S. Environmental Protection Agency (EPA) directly notified the agencies, organizations, and individuals listed in Section 10.1 regarding the availability of the Draft EA for review and comment. Legal notice was posted in the Hawai'i Tribune Herald, West Hawai'i Today, and Ka'ū News Brief. Additionally, EPA concluded consultation with the Hawai'i State Historic Preservation Division in accordance with Section 106 of the National Historic Preservation Act, and with the FWS in accordance with Section 7 of the Endangered Species Act.

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## 11 REFERENCES

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**ENVIRONMENTAL ASSESSMENT**  
for the  
Pāhala Large Capacity Cesspool (LCC)  
Replacement Project  
EPA Grant XP-96942401

**VOLUME 2: APPENDICES**

Pāhala, District of Ka‘u, County of Hawai‘i, Hawai‘i  
TMK: 9-6-002:018

**U.S. Environmental Protection Agency**

Region 9  
75 Hawthorne Street  
San Francisco, California 94105

**County of Hawai‘i**

25 Aupuni Street  
Hilo, HI 96720

FINAL

February 2020

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**Appendix A**  
**Responses to Pre-Assessment Consultation Letters**

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**Earl Matsukawa**

**From:** Koskelo, Vera B CIV (US) <Vera.B.Koskelo@usace.army.mil>  
**Sent:** Wednesday, April 11, 2018 11:24 AM  
**To:** Earl Matsukawa  
**Subject:** Corps comments on pre-assessment Consultation for DEA for POH-2018-00068 (Pahala Community Large Capacity Cesspool Replacement, Ka'u, Hilo, HI)

10349-01  
4/12/18

cc: BC  
cc: AECOS  
6/19/18

Aloha Mr. Matsukawa,

Thank you for the opportunity to comment on the preparation of a draft EA for the Pahala Community Large Capacity Cesspool Replacement.

The Corps has assigned the pre-application consultation for the project the following name and number: POH-2018-00068 (Pahala Community Large Capacity Cesspool Replacement, Ka'u, Hilo, HI). Please reference this project name and number in any subsequent communication with the Corps.

The Corps has determined that the information submitted with your letter dated March 15, 2018 is insufficient for the Corps to determine at this time whether a permit would be required for the proposed work. To receive a Corps permit determination (i.e. whether or not the project would require a Corps permit), please submit more detailed information about the proposed project including, but not limited to, the location of the proposed project within the public ROW using coordinates, TMKS, or similar boundary information; the boundaries of any proposed site access (roads) and utility lines that would be located on and/or off site to service the project; a description of any other work (e.g. staging, grading) proposed for location off-site; any project sketches and/or plans that illustrate the proposed project work; and the results of on-site investigations into the flora, soils, and observations about hydrology within the project site. If hydric soils and/or hydrophytic vegetation are found during on-site investigations on either of the parcels in the project site, consider conducting a wetland delineation.

Please feel free to contact me to discuss the project further.

The Regulatory Branch is committed to providing the highest level of customer service. I value your comments and appreciate you contacting me if you have any comments/concerns regarding our customer service.

Thank you,

Vera Koskelo  
Biologist  
Project Manager  
Honolulu District  
U.S. Army Corps of Engineers  
Building 230  
Fort Shafter, Hawaii 96858-5440  
808-835-4310  
Vera.B.Koskelo@usace.army.mil

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**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
June 22, 2018

Ms. Vera Koskelo, Biologist  
U.S. Army Corps of Engineers, Honolulu District  
Regulatory Branch  
Building 230, Room 205  
Fort Shafter, HI 96858

Vera.B.Koskelo@usace.army.mil

**Subject:** Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment (POH-2018-0068)

Dear Ms. Koskelo:

Thank for your April 11, 2018 comment message regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will contain information regarding the project location, including the extent of the collection system within the right-of-way of County streets and the wastewater treatment and disposal site. As stated in the Project Summary, the proposed treatment and disposal system would occupy about 14 acres and consist of a headworks with screens to remove debris and an odor control unit, four lined aerated lagoons of about 0.3 acres each, an operations building with adjacent disinfection system to remove pathogens, an odor control unit, a subsurface flow constructed polishing wetland to remove nitrogen and two slow rate (SR) land treatment basins which will be surrounded by berms on all four sides. SR land treatment involves irrigation of plant material with the treated effluent. The Draft EA will provide descriptions and drawings related to these improvements. The County intends to locate the treatment and disposal site within an existing macadamia nut orchard that presently contains a surface mounted irrigation system.

As part of the Draft EA, a biological resources field survey will be conducted to identify flora and fauna present on the treatment and disposal site and any wetland conditions that may be present within the site.

10349-01  
Letter to Ms. Vera Koskela, Biologist  
Page 2  
June 22, 2018

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read "Earl Matsukawa". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Earl Matsukawa, AICP  
Project Manager

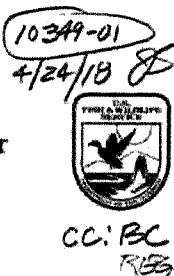
cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850



April 23, 2018

In Reply Refer To:  
01EPIF00-2018-TA-0275

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826

**Subject:** Comments for the Draft Environmental Assessment for the County of Hawaii Department of Environmental Management Pahala Community Large Capacity Cesspool Replacement, Paauau, Kau, Island and County of Hawaii

Dear Mr. Matsukawa:

The U.S. Fish and Wildlife Service (Service) received your correspondence on April 9, 2018, requesting technical assistance in the preparation for the Draft Environmental Assessment for the County of Hawaii Department of Environmental Management Pahala Community Large Capacity Cesspool (LCC) Replacement in Paauau, Kau, (TMK: 9-6-002: 018). The Service offers the following comments to assist you in your planning process so that impacts to trust resources can be avoided through site preparation, construction, and operation. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C 1531 *et seq.*).

The County of Hawaii Department of Environmental Management (DEM) is proposing to construct wastewater system improvements to replace the current system servicing Pahala, now owned by the County. The wastewater system improvements would allow the County to comply with Environmental Protection Agency (EPA) regulations requiring closure of the LCC's and to construct a system meeting current State of Hawaii Department of Health and DEM design guidelines for the collection, treatment, and disposal of the treated effluent. The Pahala Community LCC closure project improvements would consist of a new wastewater collection system located within the public right-of-way and a treatment and disposal system located on a currently privately-owned parcel which would be acquired by the County. The Pahala LCC closure project would be funded by the EPA Special Appropriation Grant and by the State of Hawaii Clean Water State Revolving Fund loan program.

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Project, eight (8) listed species that have the potential to either be in or fly through the vicinity of the project area: The federally endangered Hawaiian hoary bat (*Lasiorus cinereus semotis*), Hawaiian hawk (*Buteo solitarius*), Nene

Mr. Earl Matsukawa

2

Branta (=Nesochen) sandwichensis), Hawaiian petrel (*Pterodroma sandwichensis*), Band-rumped storm-petrel (*Oceanodroma castro*), the threatened Newell's shearwater (*Puffinus auricularis newelli*), Hawaiian stilt (*Himantopus mexicanus knudseni*), and the Hawaiian coot, (*Fulica alai*).

### Avoidance and Minimization Measures

#### Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend incorporating the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

#### Hawaiian hawk

The Hawaiian hawk is known to occur across a broad range of forest habitats throughout the Island of Hawaii. Loud, irregular and unpredictable activities, such as using heavy equipment or building a structure, near an endangered Hawaiian hawk nest may cause nest failure. Harassment of Hawaiian hawk nesting sites can alter feeding and breeding patterns or result in nest or chick abandonment. Nest disturbance can also increase exposure of chicks and juveniles to inclement weather or predators.

To avoid and minimize impacts to Hawaiian hawks we recommend you consider incorporating the following applicable measures into your project description:

- If work must be conducted during the March 1 through September 30 Hawaiian hawk breeding season, have a biologist familiar with the species conduct a nest search of the project footprint and surrounding areas immediately prior to the start of construction activities.
  - Pre-disturbance surveys for Hawaiian hawks are only valid for 14 days. If disturbance for the specific location does not occur within 14 days of the survey, conduct another survey.
- No clearing of vegetation or construction activities within 1,600 feet of any active Hawaiian hawk nest during the breeding season until the young have fledged.
- Regardless of the time of year, no trimming or cutting trees containing a hawk nest, as nests may be re-used during consecutive breeding seasons.

#### Nene

Nene are found on the islands of Hawaii, Maui, Molokai, and Kauai predominately, with a small population on Oahu. They are observed in a variety of habitats, but prefer open areas, such as

pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize potential project impacts to Nene we recommend incorporating the following applicable measures into your project description:

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

#### **Hawaiian petrel, Band-rumped storm-petrel, and Newell's shearwater**

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

#### **Hawaiian stilt and Hawaiian coot**

Listed Hawaiian waterbirds are found in fresh and brackish-water marshes and natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation.

Based on the project details provided, our information suggests that your project may result in standing water or the creation of open water, thus attracting Hawaiian waterbirds to the site. In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water),

if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

To avoid and minimize potential project impacts to Hawaiian waterbirds we recommend you incorporate the following applicable measures into your project description:

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- If water resources are located within or adjacent to the project site, incorporate applicable best management practices regarding work in aquatic environments into the project design.
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the proposed project site prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
  - Contact the Service within 48 hours for further guidance.
  - Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.

Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth moving activities until the chicks fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

#### **Invasive Species**

To avoid and minimize the risk of the road construction introducing harmful invasive pests including coqui, ants, and weeds into the project sites, we recommend the following measures be implemented by project contractors:

- Vehicles, machinery, and equipment must be thoroughly pressure washed and visibly free of mud, dirt, plant debris, frogs and frog eggs, insects and other debris. A hot water wash is preferred. Areas of particular concern include bumpers, grills, hood compartments, areas under the battery, wheel wells, undercarriage, cabs, and truck beds.
- The interior and exterior of vehicles, machinery, and equipment must be free of rubbish and food. The interiors of vehicles and the cabs of machinery must be vacuumed clean. Floor mats will be sanitized with a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.
- All work vehicles, machinery, and equipment may be subject to inspection.
- Any vehicles, machinery, and equipment that do not pass inspection will be turned away.
- Staging areas must be kept free of invasive pests.

#### **Minimize Spread of Rapid Ohia Death**

Rapid Ohia Death (ROD), a newly identified disease, has killed large numbers of mature ohia trees (*Metrosideros polymorpha*) in forests and residential areas of Hawaii Island. The disease is

caused by a vascular wilt fungus (*Ceratocystis fimbriata*). Crowns of an affected tree turn yellowish or brown within days to weeks and dead leaves typically remain on branches for some time. All ages of ohia trees can be affected and can have symptoms of browning of branches or leaves. As of early 2017 the disease has been confirmed in all districts except North and South Kohala. Additional information on ROD can be found at:

<http://www2.ctahr.hawaii.edu/forestry/downloads/ROD-trifold-03.2016.pdf> and  
[http://www2.ctahr.hawaii.edu/forestry/disease/ohia\\_wilt.html](http://www2.ctahr.hawaii.edu/forestry/disease/ohia_wilt.html).

The following avoidance and minimization measures should be followed for projects working in ohia forests or at sites with ohia trees on Hawaii Island:

- 1) A survey of the proposed project site should be conducted within two weeks prior to any tree cutting to determine if there are any infected ohia trees. If infected ohia are suspected at the site, the following agencies should be contacted for further guidance.
  - a. Service – please contact the name at the bottom of this letter.
  - b. Dr. J.B. Friday, University of Hawaii Cooperative Extension Service,  
808-969-8254 or jbfriday@hawaii.edu
  - c. Dr. Flint Hughes, USDA Forest Service, 808-854-2617, fhughes@fs.fed.us
  - d. Dr. Lisa Keith, USDA Agriculture Research Service,  
808-959-4357, Lisa.Keith@ars.usda.gov
- 2) Both prior to cutting ohia and after the project is complete:
  - a. Tools used for cutting infected ohia trees should be cleaned with a 70 percent rubbing alcohol solution. A freshly prepared 10 percent solution of chlorine bleach and water can be used as long as tools are oiled afterwards, as chlorine bleach will corrode metal tools. Chainsaw blades should be brushed clean, sprayed with cleaning solution, and run briefly to lubricate the chain.
  - b. Vehicles used off-road in infected forest areas should be thoroughly cleaned. The tires and undercarriage of the vehicle should be cleaned with detergent if they have travelled from an area with ROD or travelled off-road. Use a pressure washer with soap to clean all soil off of the tires and vehicle undercarriage.
  - c. Shoes and clothing used in infected forests should also be cleaned. Shoes should be decontaminated by dipping the soles in 70 percent rubbing alcohol to kill the ROD fungus. Other gear can be sprayed with the same cleaning solutions. Clothing can be washed in hot water and detergent.
  - d. Wood of affected ohia trees should not be transported to other areas of Hawaii Island or interisland. All cut wood should be left on-site to avoid spreading the disease. The pathogen may remain viable for over a year in dead wood. The Hawaii Department of Agriculture has passed a quarantine rule that prohibits interisland movement, except by permit, of all ohia plant or plant parts.

If this project should receive federal funding, federal permit, or any federal authorization, it will require a Section 7 consultation with the Service. The Service only conducts Section 7 consultations with the federal action agency or their designated representative.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact Eldridge Naboa, Fish and Wildlife Biologist, 808-284-0037, e-mail: [eldridge\\_naboa@fws.gov](mailto:eldridge_naboa@fws.gov). When referring to this project, please include this reference number: *01EPIF00-2018-TA-0275*.

Sincerely,

**JODI**  
**CHARRIER**  
 Jodi Charrier  
 Acting Island Team Leader  
 Maui Nui and Hawaii Island

Digitally signed  
 by JODI CHARRIER  
 Date: 2018.04.23  
 08:04:41 -10'00'



**WILSON OKAMOTO**  
CORPORATION

EMPLOYERS • PARTNERS • ENGINEERS

10349-01  
August 20, 2018

Ms. Jodi Charrier, Acting Team Leader  
Maui Nui and Hawaii Island  
Fish and Wildlife Service  
U.S. Department of the Interior  
300 Ala Moana Boulevard  
Room 3-122, Box 50088  
Honolulu, HI 96850

Attention: Eldridge Naboa, Fish and Wildlife Biologist

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'ū Ka'u, Hawai'i  
Response to Comment (01EPIF00-2018-TA-0275)

Dear Ms. Charrier:

Thank you for your April 23, 2018 comment letter (01EPIF00-2018-TA-0275) and the April 10, 2018 e-mail message from Eldridge Naboa regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. As stated in the Project Summary, the Pāhala Community Large Capacity Cesspool Replacement project would be funded by an Environmental Protection Agency (EPA) Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (CSRF) loan program. As such, we understand consultation will need to be conducted by a federal agency or by a designated non-federal representative.

On June 7, 2018, EPA Region 9 Water Division, designated Eastern Research Group, Inc. (ERG) as the non-federal representative for undertaking the consultation for this project.

As part of the Draft EA, in August 2018, botanical and biological field studies were undertaken along the streets and adjacent areas of wastewater collection system and at the 14.9-acre wastewater treatment and disposal facility project site. The results of the field surveys showed the collection system will be installed along already paved roadways within Pāhala. They also revealed that vegetation is located entirely within yards and consist of ornamental plants.

10349-01  
Letter to Ms. Jodi Charrier, Acting Team Leader  
Page 2  
August 20, 2018

The field survey showed 52 species of vascular plants: 2 ferns, one gymnosperm, and 49 species of angiosperms (flowering plants). Only two species (4%) are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Being widely distributed indigenous species, neither is listed as threatened or endangered or of any special concern.

The avian survey recorded a total of 175 individual birds of 13 species, representing nine separate families during station counts. Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. All of the species recorded during the course of the survey are established alien species. No native avian species were recorded during the course of this survey.

The field survey report indicated that, although not detected during the survey, the endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) have been recorded over-flying the general area between April and the end of November each year. The petrel is listed as endangered, and the shearwater as threatened under both federal and State of Hawai'i endangered species statutes.

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 by the survey.

The Draft EA, will include a discussion of the avoidance and minimization measures as set forth in your April 23, 2108 letter.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Masukawa, AICP  
Vice President, Director - Planning

cc: D. Beck, DEM  
K. Rao, EPA  
B. Rosen, ERG  
C. Lekven, PE, BC

DAVID Y. ICE  
CHIEF OF BUREAU



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
SAFE DRINKING WATER BRANCH  
2385 WAIMANO HOME ROAD  
LILIAKUPU BUILDING 4  
PEARL CITY, HAWAII 96782-1400

10349-01  
4/10/18  
cc: BC  
VIRGINIA PRESSLER, M.D.  
CHIEF OF BUREAU  
7,900 PEARL CITY RD  
PEARL CITY, HI 96782  
Pearl City, HI 96782-1400



**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
June 21, 2018

April 3, 2018

EM

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

RECEIVED  
APR 05 2018  
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA), PRE-ASSESSMENT CONSULTATION FOR PAHALA COMMUNITY LARGE CAPACITY CESSPOOL REPLACEMENT PAAUUAU, KAU, HAWAII**

The Safe Drinking Water Branch (SDWB) has reviewed your March 15, 2018 request for comments as part of the Draft EA pre-assessment consultation for the subject project.

The project is located above the Underground Injection Control (UIC) line. Areas above the UIC line are considered to be on top of underground sources of drinking water. Sewage injection wells are not allowed to be constructed above the UIC line. There is an existing drinking water well located approximately one (1) mile mauka of the proposed wastewater disposal and treatment site. In consideration of the project's location and situation, wastewater disposal by land application appears to be a very sensible proposal.

If you have any questions regarding this response, please contact Mr. Norris Uehara, Supervisor of the Safe Drinking Water Branch UIC program at 586-4258.

Sincerely,

JOANNA L. SETO, P.E., CHIEF  
Safe Drinking Water Branch

NU:cb

Ms. Jonna Seto, Branch Chief  
State of Hawai'i  
Department of Health  
Safe Drinking Water Branch  
2385 Waimano Home Road  
Pearl City, HI 96782

Attention: Norris Uehara

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Ms. Seto:

Thank for your April 3, 2018 comment letter (SDWS Pāhala LLC Replacement) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project.

The Draft Environmental Assessment (EA) will describe the project as located above the Underground Injection Control (UIC) line and, as such, will overlie underground sources of drinking water. Further, an existing drinking water well is located about 1 mile mauka of the treatment and disposal site. Lastly, the Draft EA will include that the project's disposal by slow land application is a very sensible proposal.

Thank you for your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

DAVID V. IQE  
GOVERNOR OF HAWAII



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

April 3, 2018

Mr. Earl Matsukawa, AICP  
Wilson Okamoto Corporation  
1907 S. Beretania Street, Suite 400  
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

**SUBJECT: Pre-Assessment Consultation Draft Environmental Assessment (PAC DEA) for Pahala  
Community Large Capacity Cesspool Replacement, Kau, Hawaii  
TMK: 9-6-002-018**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PAC DEA to our office on March 20, 2018.

We understand from the project summary that "the Pahala Community Large Capacity Cesspool Closure project improvements would consist of a new wastewater collection system located within the public right-of-way and a treatment and disposal system located on a currently privately-owned parcel (TMK: 9-6-002-018) which will be acquired by the County."

Hawaii's environmental review laws require Environmental Assessments (EAs) and Environmental Impact Statements (EISs) to consider health in the discussion and the mitigation measures to reduce negative impacts. In its definition of 'impacts,' §11-200-2, Hawaii Administrative Rules (HAR) includes health effects, whether primary (direct), secondary (indirect), or cumulative. Further, §11-200-12(b)(5), HAR, lists public health as one of the criteria for determining whether an action may have a significant impact on the environment.

In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments to support sustainable healthy design are provided at: <http://health.hawaii.gov/epo/landuse>. Projects are required to adhere to all applicable standard comments.

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

We suggest you review the requirements of the Clean Water Branch (Hawaii Administrative Rules (HAR), Chapter 11-54-1.1, -3, 4-8) and/or the National Pollutant Discharge Elimination System (NPDES) permit (HAR, Chapter 11-55) at: <http://health.hawaii.gov/cwb>. If you have any questions, please contact the Clean Water Branch (CWB), Engineering Section at (808) 586-4309 or [cleanwaterbranch@doh.hawaii.gov](mailto:cleanwaterbranch@doh.hawaii.gov). If your project involves waters of the U.S., it is highly recommended that you contact the Army Corps of Engineers, Regulatory Branch at: (808) 835-4303.

Please note that all wastewater plans must conform to applicable provisions (HAR, Chapter 11-62, "Wastewater Systems"). We reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should

1034401  
4/10/18  
EM ✓  
JS ✓  
VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH  
cc: BC  
In reply, please refer to File  
EPO 18-082

RECEIVED  
APR 09 2018  
WILSON OKAMOTO CORPORATION

Mr. Earl Matsukawa, AICP  
Page 2  
April 3, 2018

you have any questions, please review online guidance at: <http://health.hawaii.gov/wastewater> and contact the Planning and Design Section of the Wastewater Branch (WWB) at (808) 586-4294.

If temporary fugitive dust emissions could be emitted when the project site is prepared for construction and/or when construction activities occur, we recommend you review the need and/or requirements for a Clean Air Branch (CAB) permit (HAR, Chapter 11-60.1 "Air Pollution Control"). Effective air pollution control measures need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures could include, but are not limited to, the use of water wagons, sprinkler systems, and dust fences. For questions contact the Clean Air Branch via e-mail at: [Cab.General@doh.hawaii.gov](mailto:Cab.General@doh.hawaii.gov) or call (808) 586-4200.

Any waste generated by the project (that is not a hazardous waste as defined in state hazardous waste laws and regulations), needs to be disposed of at a solid waste management facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. You may wish you review the Minimizing Construction & Demolition Waste Management Guide at: <http://health.hawaii.gov/shwb/files/2016/05/constdem16.pdf>. Additional information is accessible at: <http://health.hawaii.gov/shwb>. For specific questions call (808) 586-4226.

If noise created during the construction phase of the project may exceed the maximum allowable levels (HAR, Chapter 11-46, "Community Noise Control") then a noise permit may be required and needs to be obtained before the commencement of work. Relevant information is online at: <http://health.hawaii.gov/irht/noise>. EPO recommends you contact the Indoor and Radiological Health Branch (IRHB) at (808) 586-4700 with any specific questions.

To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed an environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: <http://www.epa.gov/ejscreen>.

We hope this information is helpful. If you have any questions please contact us at [DOH\\_epo@doh.hawaii.gov](mailto:DOH_epo@doh.hawaii.gov) or call us at (808) 586-4337. Thank you for the opportunity to comment.

Mahalo nui loa.

Laura Leialoha Phillips McIntyre, AICP  
Environmental Planning Office

LM:nn

c: DOH: DHO HI, WWB (via email only)

Attachment: U.S. EPA EJSCREEN Report for Project Area



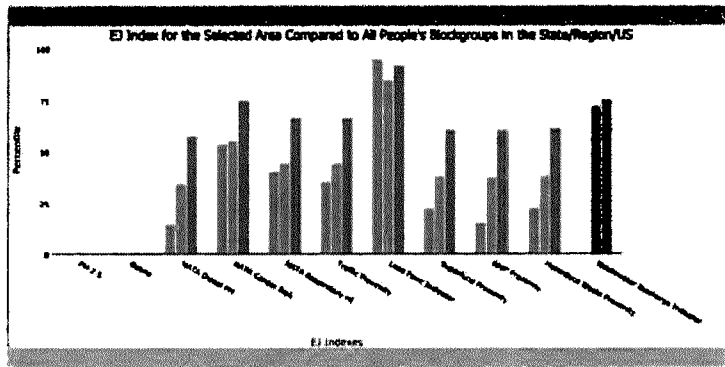
EISCREEN Report (Version 2017)

1 mile Ring Centered at 18.189149,-155.479492, HAWAII, EPA Region 9

Approximate Population: 707  
Input Area (sq. miles): 3.14



Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indicators</b>			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM	15	35	58
EJ Index for NATA Air Toxics Cancer Risk	54	58	75
EJ Index for NATA Respiratory Hazard Index	41	45	67
EJ Index for Traffic Proximity and Volume	39	46	67
EJ Index for Lead Paint Indicator	95	95	92
EJ Index for Superfund Proximity	23	29	81
EJ Index for RMP Proximity	18	35	81
EJ Index for Hazardous Waste Proximity	27	38	82
EJ Index for Wastewater Discharge Indicator	N/A	73	79



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

March 23, 2018

1/1



EISCREEN Report (Version 2017)

1 mile Ring Centered at 18.189149,-155.479492, HAWAII, EPA Region 9

Approximate Population: 707  
Input Area (sq. miles): 3.14



March 23, 2018  
↑ Input Area

Scale: 1:10,000  
Map Date: 3/23/2018  
Map Time: 10:00 AM  
Map User: [Name]

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

March 23, 2018

1/1



**EISCREEN Report (Version 2017)**

1 mile Ring Centered at 15.189148, -155.479482, HAWAII, EPA Region 9

Approximate Population: 707

Input Area (sq. miles): 3.14



Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	N/A	N/A	N/A	9.9	N/A	9.14	N/A
Ozone (ppb)	N/A	N/A	N/A	41.8	N/A	35.4	N/A
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.00371	0.149	0	0.978	<50th	0.936	<50th
NATA* Cancer Risk (lifetime risk per million)	24	34	0	43	<50th	40	<50th
NATA* Respiratory Hazard Index	0.47	1	0	2	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	13	1000	22	1100	14	589	20
Lead Paint Indicator (% Pre-1960 Housing)	0.56	0.16	95	0.24	81	0.29	79
Superfund Proximity (site count/mi distance)	0.0028	0.1	4	0.15	0	0.13	0
RMP Proximity (facility count/mi distance)	0.015	0.39	0	0.98	0	0.73	0
Hazardous Waste Proximity (facility count/mi distance)	0.0029	0.1	4	0.12	0	0.083	0
Wastewater Discharge Indicator (toxicity-weighted concentration/mi distance)	0	0.04	N/A	13	59	30	40
<b>Demographic Indicators</b>							
Demographic Index	86%	51%	89	47%	76	36%	86
Minority Population	88%	77%	84	59%	79	38%	89
Low Income Population	44%	26%	87	36%	85	34%	89
Linguistically Isolated Population	8%	8%	87	9%	82	6%	75
Population With Less Than High School Education	14%	9%	79	17%	82	13%	83
Population Under 5 years of age	8%	6%	70	7%	64	6%	67
Population over 64 years of age	19%	16%	70	13%	82	14%	78

\* The National Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to quantify air toxics emission sources, and to assess its impact on human health. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definite risks to specific individuals or locations. More information on the NATA analysis can be found at <http://www.epa.gov/national-air-toxics-assessment>

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

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

March 23, 2018

4/2





**WILSON OKAMOTO**  
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INNOVATORS • PLANNERS • ENGINEERS

10349-01  
June 21, 2018

Ms. Laura Leialoha Phillips McIntyre, AICP  
Environmental Planning Office  
State of Hawaii Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Ms. McIntyre:

Thank you for your April 3, 2018 comment letter (EPO 18-082) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will be prepared to in accordance with the requirements of Chapter 343, HRS, as amended, and Hawai'i Administrative Rules (HAR) Title 11, State of Hawai'i Department of Health, Chapter 200, Environmental Impact Statement Rules, including an assessment according to HAR §11-200-12(b)(5).

The Draft EA will include a discussion of surface waters and erosion control measures related to construction storm water runoff, as may be required for a National Pollutant Discharge Elimination System (NPDES) permit. Also, the Draft EA will include a discussion of surface water sources in the area and potential discharge to waters of the U.S.

As part of the project description, the Draft EA will note the wastewater treatment plant must conform to applicable provisions (HAR, Chapter 11-62, "Wastewater Systems").

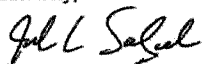
With respect to air quality, the Draft EA will discuss fugitive dust emissions and potential measures to mitigate emissions during construction activities and from the emergency generator in relation to the requirements of HAR, Chapter 11-60.1 "Air Pollution Control." Hazardous waste will be discussed in relation to construction activities and the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The Draft EA will state the open burning of any of these wastes, on or off site, is strictly prohibited.

10349-01  
Letter to Ms. Laura Leialoha Phillips McIntyre, AICP  
Page 2  
June 21, 2018

An analysis of noise created during the construction will also be included in the Draft EA. As noted in the Project Summary, the Pāhala Community Large Capacity Cesspool Replacement project would be funded by an EPA Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (SRF) loan program. As such, the Draft EA will include an environmental justice (EJ) discussion on the Pāhala community.

We appreciate your participation in the Draft EA process.

Sincerely,

  
For Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3376  
HONOLULU, HI 96801-3376

April 4, 2018

RECEIVED  
APR 09 2018  
1034401  
EIM  
A/11/18 JS  
WILSON OKAMOTO CORPORATION VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH  
CC: BL

Priority, processed by  
FACSIMILE  
04007CEC.18

Mr. Earl Matsukawa  
April 4, 2018  
Page 2

04007CEC.18

Mr. Earl Matsukawa  
Project Manager  
Wilson Okamoto Corporation  
1907 S. Beretania Street, Suite 400  
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

**SUBJECT: Pre-Assessment Consultation Comments on  
Pahala Community Large Capacity Cesspool Replacement  
Pauau, Kau, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter dated March 15, 2018, requesting comments on subject County of Hawaii (COH), Department of Environmental Management (DEM) proposed project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. The City and County of Honolulu, Department of Environmental Services (Applicant) may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>.

**A. General Comments**

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. The COH-DEM may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epemit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

3. If COH-DEM project involves work in, over, or under waters of the United States, it is highly recommended that they contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

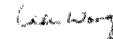
4. Please note that all discharges related to the project construction and/or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards (WQS). Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
  - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source

of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at: <http://health.hawaii.gov/cwb>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



ALEC WONG, P.E., CHIEF  
Clean Water Branch

EC:ak



**WILSON OKAMOTO**  
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10349-01  
June 21, 2018

Mr. Alec Wong, P.E., Chief, Clean Water Branch  
State of Hawai'i  
Department of Health  
Clean Water Branch  
P.O. Box 3378  
Honolulu, HI 96801

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'an'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Wong:

Thank you for your April 4, 2018 comment letter (04007CEC.18) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will be prepared to in accordance with the requirements of Chapter 343, HRS, as amended, and Hawai'i Administrative Rules (HAR) Title 11, State of Hawai'i Department of Health, Chapter 200, Environmental Impact Statement Rules, including an assessment according to HAR §11-200-12(b)(5).

General Comments:

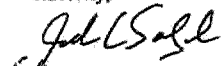
1. Based on the above, the Draft EA will include analysis of potential impacts to State waters including analysis measures necessary to protect the existing uses of the receiving State waters.
2. The Draft EA will include a discussion of surface waters and erosion control measures related to construction storm water runoff, as may be required for a National Pollutant Discharge Elimination System (NPDES) permit.
3. Also, the Draft EA will include a discussion of surface water sources in the area and potential discharges to waters of the U.S which might require approval by the Corps of Engineers and any associated need for a Section 401 Water Quality Certification (WQC).

10349-01  
Letter to Mr. Alec Wong, P.E.  
Page 2  
June 21, 2018

4. The Draft EA will note that all discharges related to the project construction and/or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards (WQS).
5. The Draft EA will include a discussion of possible uses of storm water runoff from the project site and related facilities, consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation, and various green building practices.

We appreciate your participation in the Draft EA process.

Sincerely,

  
Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

DAVID Y. IGE  
GOVERNOR OF HAWAII



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

April 10, 2018

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

RECEIVED  
APR 11 2018  
DEPARTMENT OF HEALTH

10349-01  
4/16/18 cc: BC  
VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH  
To reply please refer to file:  
LUD - 3 9 6 002 018  
DEA Pahala Community-ID3668

EM ✓

Dear Mr. Matsukawa:

Subject: Draft Environmental Assessment, Pre-Assessment Consultation  
Pahala Community Large Capacity Cesspool Replacement  
Paaauu, Kau, Hawaii TMK (3) 9-6-002: 018  
Request for Comment

Thank you for allowing us the opportunity to provide comments for the subject project. The subject project will be funded by the Hawaii Clean Water State Revolving Fund (CWSRF) Program. In order to comply with the Hawaii CWSRF Program requirements, the environmental assessment must address all applicable Federal environmental "cross-cutting" authorities, which can be found in the Hawaii State Environmental Review Process document.

Please be informed that the proposed wastewater systems for the community may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices. In addition, all wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems."

Should you have any questions, please call Mr. Mark Tomomitsu at 586-4294.

Sincerely,

*Sina Pruder*

SINA PRUDER, P.E., CHIEF  
Wastewater Branch

LMMST:im

c. Mr. Jonathan Nagato, DCH-WWB, PD-SRF  
Ms. Laura McIntyre, DCH-EPC, via email  
Ms. Amy Cook, DCH-WWB's Hilo Staff, via email  
Mr. Dana Hiramasa, DCH-WWB's Kona Staff, via email



WILSON OKAMOTO  
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10349-01  
June 22, 2018

Ms. Sina Pruder, Branch Chief  
Wastewater Branch  
State of Hawai'i  
Department of Health  
2827 Waimano Home Road  
Pearl City, HI 96782

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Ms. Pruder:

Thank you for your April 10, 2018 comment letter (LUD-396002 18) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will confirm that the project will use funds from the Hawai'i Clean Water State Revolving Fund (CWSRF) project and will include the various "cross cutter" authorities required as part of the State Environmental Review Process (SERP).

An archaeological inventory of survey will be conducted for the project and will include consultation with various governmental agencies, Native Hawaiian Organizations and interested parties to identify the concerns related to the project.

Lastly, the Draft EA will state the design of the collection system and the wastewater treatment and disposal system meets the requirements of Hawai'i Administrative Rules, Chapter 11-62.

We appreciate your participation in the Draft EA process.

Sincerely,

*Earl Matsukawa*

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



**OFFICE OF PLANNING  
STATE OF HAWAII**

235 South Beretania Street, 8th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

RECEIVED  
APR 09 2018  
LEO R. ASUNCION  
DIRECTOR  
OFFICE OF PLANNING  
TELEPHONE: (808) 587-2846  
FAX: (808) 587-2824  
WEB: <http://planning.hawaii.gov/>

Mr. Earl Matsukawa, AICP  
Project Manager  
April 5, 2018  
Page 2

DTS201804051430RI

April 5, 2018

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 S. Beretania Street, Suite 400  
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Draft Environmental Assessment, Pre-Assessment Consultation; Pahala Community Large Capacity Cesspool Replacement, Paauau, Kau, Hawaii; TMK: (3) 9-6-002: 018

Thank you for the opportunity to provide comments on the pre-consultation request for the preparation of a Draft Environmental Assessment (Draft EA) on the Pahala Community cesspool replacement project. The pre-consultation review material was transmitted to our office via letter dated March 15, 2018.

It is our understanding that the County of Hawaii Department of Environmental Management (DEM) proposes the construction of a wastewater collection and treatment system to replace the current large capacity cesspools that currently serve the residents of Pahala. The new wastewater collection system would comply with U.S. Environmental Protection Agency (EPA) regulations. The new wastewater system would also meet State Department of Health guidelines for the collection, treatment, and disposal of treated effluent.

The site for the proposed wastewater treatment system is currently used to grow macadamia nut trees. The trees will be removed and the area cleared for the installation of the system. The wastewater system would consist of 11,000 linear feet of gravity flow piping on 14 acres of land. It will include headworks with screens to remove debris, an odor control unit, lined aerated lagoons, an operations building with a disinfection system to remove pathogens, a slow flow rate land treatment basin, and berms that will surround the system on all four sides.

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

1. The Hawaii State Planning Act.  
Pursuant to Hawaii Administrative Rules (HAR) § 11-200-10(4) – general description of the action’s technical, economic, social, and environmental characteristics, this

project must demonstrate that it is consistent with state environmental, social, and economic goals and policies. Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Planning Act, provides goals, objectives, policies, planning coordination and implementation, and priority guidelines for growth, development, and the allocation of resources throughout the state.

The Draft EA should include a discussion on the project’s ability to meet all parts of HRS Chapter 226. The analysis should examine consistency with these statutes or clarify where it is in conflict with them. If any of these statutes are not applicable to the project, the analysis should affirmatively state such determination, followed by discussion paragraphs.

2. Principles of Sustainability.

The Draft EA should include an examination on this cesspool removal project and its compatibility with Statewide sustainability goals. HRS § 226-108 – the priority guidelines on sustainability is the mainstay of sustainability policies for the State of Hawaii. An analysis on the project’s consistency with this statute should be included in the Hawaii State Planning Act examination as noted above.

Clean water resources and the connection to a healthy environment are discussed within the Hawaii 2050 Sustainability Plan. As a reference, we recommend that DEM reviews the Hawaii 2050 Sustainability Plan. The closure of a cesspool and its replacement with a more environmentally friendly onsite wastewater collection and treatment system is consistent with the Hawaii 2050 Sustainability Plan’s water quality goals.

3. Objectives and Policies of the Hawaii Coastal Zone Management (CZM) Program.  
The CZM area is defined as “all lands of the State and the area extending seaward from the shoreline to the limit of the State’s police power and management authority, including the U.S. territorial sea” (HRS § 205A-1).

The Draft EA should include an assessment as to how the proposed action conforms to each of the goals and objectives as listed in HRS § 205A-2. Compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343.

4. State Land Use Agriculture District Permitted Uses.

The parcel in question is located within the State Land Use Agricultural District. Pursuant to HRS § 205-2(d), the proposed wastewater facility is not a permitted use.

Mr. Earl Matsukawa, AICP  
Project Manager  
April 5, 2018  
Page 3

Please consult with the County of Hawaii, Department of Planning on the need for a Special Permit for this project on approximately 14 acres.

5. Stormwater Runoff, Erosion, and Water Resources.

Pursuant to HAR § 11-200-10(6) – identification and summary of impacts and alternatives considered; to ensure that the surface water and nearshore marine resources near the coastal area of the Kau District remain protected, the negative effects of stormwater inundation from this cesspool closure and wastewater system construction action should be evaluated in the Draft EA.

Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, potential vulnerability of surface water resources, soil absorption characteristics of the area, risk of effluent seepage, and examining the amount of permeable versus impervious surfaces in the area. Developing mitigation measures for the protection for surface water resources and the coastal ecosystem should take this into account, pursuant to HAR § 11-200-10(7).

To assist in the development of stormwater runoff strategies, OP has developed guidance documents on this subject. We recommend consulting these stormwater evaluative tools when developing mitigation approaches for polluted runoff. They offer useful techniques to keep land-based pollutants and sediment in place, while considering the management practices best suited for the topography of the area and the types of contaminants potentially affecting nearby water resources. The evaluative tools that should be used during the design process include:

- Hawaii Watershed Guidance provides direction on mitigation strategies for urban development activities that will safeguard watersheds and implement watershed plans [http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI\\_Watershed\\_Guidance\\_Final.pdf](http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI_Watershed_Guidance_Final.pdf)
- Stormwater Impact Assessments can be used to identify and analyze information on hydrology, sensitivity of coastal and riparian resources, and management measures to control runoff, as well as consider secondary and cumulative impacts to the area. [http://files.hawaii.gov/dbedt/op/czm/initiative/stormwater\\_impact/final\\_storm\\_water\\_impact\\_assessments\\_guidance.pdf](http://files.hawaii.gov/dbedt/op/czm/initiative/stormwater_impact/final_storm_water_impact_assessments_guidance.pdf)
- Low Impact Development (LID), A Practitioners Guide covers a range of structural BMPs for stormwater control management, onsite infiltration techniques, and water reuse methods that minimize negative environmental

Mr. Earl Matsukawa, AICP  
Project Manager  
April 5, 2018  
Page 4

impacts. [http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid\\_guide\\_2006.pdf](http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf)

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

Sincerely,



Leo R. Asuncion  
Director



**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS · PLANNERS · ENGINEERS

10349-01  
June 21, 2018

Mr. Leo Asuncion, Director  
State of Hawai'i  
Department of Business, Economic Development and Tourism  
Office of Planning  
PO Box 2359  
Honolulu, HI 96804

Attention: Joshua Hekekeaia

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Asuncion:

Thank you for your April 5, 2018 comment letter (DTS201804051430R1) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will be prepared to in accordance with the requirements of Chapter 343, HRS, as amended, and Hawaii Administrative Rules (HAR) Title 11, State of Hawai'i Department of Health, Chapter 200, Environmental Impact Statement Rules, including an assessment according to (HAR) § 11-200-10(4)

1. Hawai'i State Planning Act.  
The Draft EA will include a discussion on the project's consistency with the Chapter 226, HRS, as amended.
2. Principles of Sustainability.  
The Draft EA will include a discussion on the project's consistency with Statewide sustainability goals.
3. Objectives and Policies of the Hawai'i Coastal Zone Management (CZM) Program.  
As stated above, the Draft EA will be prepared to in accordance with the requirements of Chapter 343, HRS, as amended, and Hawai'i Administrative Rules (HAR) Title 11, State of Hawai'i Department of Health, Chapter 200, Environmental Impact Statement Rules which includes an assessment as project's conformance to each of the goals and objectives as listed in Chapter 205A-2, HRS.

10349-01  
Letter to Mr. Leo Asuncion  
Page 2  
June 21, 2018

4. State Land Use Agriculture District Permitted Uses.  
The Draft EA will note the approximately 14.9-acre treatment and disposal project site is within the State Land Use Agricultural District and the project will require approval of a Special Use Permit from the County of Hawai'i Windward Planning Commission.
5. Stormwater Runoff, Erosion, and Water Resources.  
As stated above, the Draft EA will be prepared to in accordance with the requirements of Chapter 343, HRS, as amended, and Hawai'i Administrative Rules (HAR) Title 11, State of Hawai'i Department of Health, Chapter 200, Environmental Impact Statement Rules, which includes discussion of impacts to surface water sources, the effect of rain events on the project and the amount of impervious surfaces created by the project.

We appreciate your participation in the Draft EA process.

Sincerely,

  
Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



DAVID Y. IFE  
GOVERNOR  
STATE OF HAWAII

DOUGLAS S. CBIN  
LT. GOVERNOR  
STATE OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1879  
HONOLULU, HAWAII 96805

10349-01  
JULIE M. K. MANGATANA  
CHAIRMAN  
HAWAIIAN HOME LANDS COMMISSION  
WILLIAM J. AILA, JR.  
DEPUTY TO THE CHAIRMAN

EM

March 27, 2018

RECEIVED  
MAR 29 2018  
WILSON OKAMOTO CORPORATION

Attention: Earl Matsukawa, AICP  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Draft Environmental Assessment, Pre-Assessment  
Consultation; Pahala Community Large Capacity  
Cesspool Replacement; Paauau, Kau, Hawaii  
Request for Comment

The Department of Hawaiian Home Lands acknowledges receiving the request for comments on the above-cited project. After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Lands, we do not anticipate any impacts to our lands or beneficiaries from the project.

However, we highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)ative Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

Mahalo for the opportunity to provide comments. If you have any questions, please call Rae Ann Hyatt, at 620-9480 or contact via email at [raeann.p.hyatt@hawaii.gov](mailto:raeann.p.hyatt@hawaii.gov).

Sincerely,  
  
M. Kaleo Manuel  
Acting Planning Program Manager



WILSON OKAMOTO  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
June 21, 2018

Mr. M. Kaleo Manuel, Acting Planning Program Manager  
State of Hawai'i  
Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, HI 96805

Attention: Rae Ann Hyatt

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Manuel:

Thank you for your March 27, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will note that due to the project's lack of proximity to Hawaiian Home Lands, the Department of Hawaiian Home Lands does not anticipate any impacts to its lands or beneficiaries from the project.

As noted in the Project Summary, the Pāhala Community Large Capacity Cesspool Replacement project would be funded by an EPA Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (SRF) loan program. As such, the Draft EA will include consultation with Hawaiian Homestead community associations and other Native Hawaiian organizations to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

We appreciate your participation in the Draft EA process.

Sincerely,  
  
Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

DAVID V. JOE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

April 16, 2018

Wilson Okamoto Corporation  
Attention: Mr. Earl Matsukawa, AICP  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

via email: [woc@wilsonokamoto.com](mailto:woc@wilsonokamoto.com)

Dear Mr. Matsukawa:

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment for the **Pahala Community Large Capacity Cesspool Replacement Project** located at Pa'au'au, Ka'u, Island of Hawaii; within the Public Right-of-Way and TMK: (3) 9-6-002:018

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

At this time, enclosed are comments from the (a) Engineering Division and (b) Land Division - Hawaii District on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at (808) 587-0417. Thank you.

Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosures  
cc: Central Files

10345-01  
4/15/18  
SIGAPOWA CASE  
TRANSFERRED  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CC BC

DAVID V. JOE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 27, 2018

MEMORANDUM

TO:  
FROM

DLNR Agencies:

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

FROM: Russell Y. Tsuji, Land Administrator  
 SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment for the **Pahala Community Large Capacity Cesspool Replacement Project**  
 LOCATION: Pa'au'au, Ka'u, Island of Hawaii; Within the Public Right-of-Way and TMK: (3) 9-6-002:018  
 APPLICANT: Wilson Okamoto Corporation on behalf of the County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by April 12, 2018.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Print Name: Cary S. Chang, Chief Engineer

Date: 4/3/18

Attachments  
cc: Central Files

18 APR 27 AM 11:09 ENGINEERING

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: Pre-Assessment Consultation for Draft Environmental Assessment for the  
Pahala Community Large Capacity Cesspool Replacement Project,  
Pa'au'au, Ka'u, Island of Hawaii; Within the Public Right-of-Way and  
TMK: (3) 9-6-002:018

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiifip.org/FHAT>).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- o Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: [Signature]  
CARTY S. CHANG, CHIEF ENGINEER

Date: 4/13/18



RECEIVED  
LAND DIVISION

2018 APR 13 AM 6:36



STATE OF HAWAII  
DEPT. OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
NATURAL RESOURCES  
STATE OF HAWAII

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 27, 2018

MEMORANDUM

FROM:  
TO:

DLNR Agencies:

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

TO:

FROM: Russell Y. Tsuji, Land Administrator  
SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment for the  
Pahala Community Large Capacity Cesspool Replacement Project  
LOCATION: Pa'au'au, Ka'u, Island of Hawaii; Within the Public Right-of-Way and  
TMK: (3) 9-6-002:018  
APPLICANT: Wilson Okamoto Corporation on behalf of the County of Hawaii, Department  
of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by April 12, 2018.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: [Signature]

Print Name: GORDON C. HEIT

Date: 4/12/18

Attachments  
cc: Central Files

Alias  
Fax to: Darlene Nakamura (4 pg)  
From: HDLO

REZAVERDI CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

2018 MAR 29 P 02:08

RECEIVED  
LAND DIVISION  
HILLO, HAWAII



**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS - PLANNERS - ENGINEERS

10349-01  
June 22, 2018

Mr. Russell Y. Tsuji, Land Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawai'i  
1151 Punchbowl Street  
Honolulu, HI 96813

Attention: Ms. Darlene Nakamura

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Tsuji:

Thank you for your April 16, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will include that the Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Further, the Land Division Hawaii District has no comment.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

10399-01  
4/18/18  
CC: RL  
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

CC: RL  
4/22/18

April 18, 2018

Eari Matsukawa  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826

Dear Eari Matsukawa,

The Department of Land and Natural Resource's Division of Forestry and Wildlife (DOFAW) has received your inquiry regarding the proposed Pāhala Community large capacity cesspool replacement located in Pā'au'au, Ka'u on the island of Hawai'i. The County of Hawaii Department of Environmental Management is proposing to construct wastewater system improvements to replace the current system servicing Pāhala. The new wastewater collection system would consist of 11,000 linear feet of gravity flow piping ranging from 8 to 12 inches in diameter. The proposed treatment and disposal system would occupy approximately 14 acres and consist of headworks with screens to remove debris and an odor control unit, four lined aerated lagoons of about 0.3 acres each, subsurface flow constructed polishing wetland and four land treatment basins. A security fence will be constructed along the perimeter of the site.

The State and Federally listed Hawaiian hoary bat or 'Ōpe'ape'a (*Lasiorus cinereus semotis*) has the potential to occur in the vicinity of the proposed project. Hawaiian hoary bats roost in both exotic and native trees. DOFAW recommends avoiding the use of barbed wire, as bat mortalities have been documented as a result of becoming ensnared by barbed wire during flight. Bats are also known to be attracted to water features and ponding of water. If any trees are planned for removal during the bat breeding season there is a risk of injury or mortality to juvenile bats. To minimize the potential for impacts to this species, site clearing should be timed to avoid disturbance to breeding Hawaiian hoary bats: woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15).

The endangered Hawaiian hawk or 'io (*Buteo solitarius*) may occur in the project vicinity. DOFAW recommends surveying the area to ensure no Hawaiian hawk nests are present if trees are to be cut. DOFAW would like to ensure that effective avoidance measures are in place to prevent adverse impacts to native seabirds. Artificial lighting can causing disorientation which could result in collision with manmade artifacts or grounding of birds. If nighttime lighting is required DOFAW recommends that any lights used be fully shielded to minimize impacts.

Construction of aerated lagoons, polishing wetland and land treatment basins are likely to attract endangered waterbirds such as the Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coot (*Fulica alai*), Hawaiian goose, or Nēnē (*Branta sandvicensis*)

and Hawaiian moorhen (*Gallinula chloropus sandvicensis*) to the proposed project site. DOFAW requests that the project proponent initiate consultation with our office to further assess the impact of the project on endangered and threatened species.

We appreciate your efforts to work with our office for the conservation of our native species. If you have any questions, please contact James Cogswell, Wildlife Program Manager at (808) 587-4187 or [James.M.Cogswell@hawaii.gov](mailto:James.M.Cogswell@hawaii.gov).

Sincerely,  
  
James M. Cogswell  
Wildlife Program Manager



**WILSON OKAMOTO**  
CORPORATION

PROFESSIONAL ENGINEERS & ARCHITECTS

10349-01  
August 20, 2018

Mr. James Cogswell, Wildlife Program Manager  
Division of Forestry and Wildlife  
State of Hawai'i  
Department of Land and Natural Resources  
1151 Punchbowl Street  
Honolulu, HI 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Cogswell:

Thank you for your April 18, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. As part of the Draft Environmental Assessment (EA), in August 2018, botanical and avian field studies were undertaken along the streets and adjacent areas of the wastewater collection system and at the wastewater treatment and disposal facility project site.

The avian survey recorded a total of 175 individual birds of 13 species, representing nine separate families during station counts. Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. All of the species recorded during the course of the survey are established alien species. No native avian species were recorded during the course of this survey.

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 by the survey.

The potential that the treatment and disposal facility could attract a listed species will be discussed in the Draft EA, along with the avoidance and minimization measures as set forth in your April 18, 2018 letter.

10349-01  
Letter to Mr. James Cogswell, Wildlife Program Manager  
Page 2  
August 20, 2018

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Vice President, Director - Planning

cc: D. Beek, DEM  
K. Rao, EPA  
B. Rosen, ERG  
C. Lekven, PE, BC

DAVID Y. IGE  
GOVERNOR



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

April 10, 2018

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Pahala Community Large Capacity Cesspool Replacement  
Draft Environmental Assessment, Pre-Assessment Consultation  
Paaauu, Kau, Hawaii  
TMK: (3) 9-6-002:018

The Department of Transportation (DOT) understands, The County of Hawai'i is proposing to construct wastewater system improvements to replace the current system servicing Pahala. The Pahala Community Large Capacity Cesspool Closure project improvements would consist of a new wastewater collection system located within the public right-of-way under the County jurisdiction and a treatment and disposal system located on a currently privately-owned parcel (TMK: 9-6-002:018) which will be acquired by the County. While the project location map reflects the subject project being adjacent to Mamalahoa Highway, we understand the project will be approximately 60 feet from the highway right of way.

Based on the information provided, the subject project is not expected to significantly impact the State highway facility.

If there are any questions, please contact Mr. Blayne Nikaido of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7979.

Sincerely,

JADE T. BUTAY  
Director of Transportation

10349-01  
4/13/18  
cc: BC

JADE T. BUTAY  
DIRECTOR

Deputy Directors  
ROY CATALANI  
ROSS M. HIGASHI  
EDWIN H. SHIFFEN  
DARRIEL T. YOUNG

IN REPLY REFER TO:  
DIR 0327  
STP 8.2379

EM

RECEIVED  
APR 12 2018  
WILSON OKAMOTO CORPORATION



**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS - PLANNERS - ENGINEERS

10349-01  
June 22, 2018

Mr. Jade Butay, Director  
State of Hawai'i  
Department of Transportation  
869 Punchbowl Street  
Honolulu, HI 96813

Attention: Blayne Nikaido

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Butay:

Thank you for your April 10, 2018 comment letter (DIR 0327 STP 8.2379) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will confirm the wastewater collection system and the treatment and disposal project site are located outside of the highway right of way.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



RAND V. LOE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

10349-01  
4/24/18

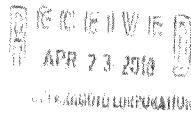
RODERICK K. BECKER  
Comptroller  
ALGREY HIGANO  
David Comptroller

cc: RC

EM

(P) 108.6

APR 20 2018



Mr. Earl Matsukawa, AICP  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Draft Environmental Assessment, Pre-Assessment Consultation  
Pāhala Community Large Capacity Cesspool Replacement  
Pāauau, Kau, Hawaii

Thank you for the opportunity to provide comments on the subject project. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities, and we have no comments to offer at this time.

If you have any questions, your staff may call Mr. David DePonte of the Public Works Division at 586-0492.

Sincerely,

RODERICK K. BECKER  
Comptroller

c: Mr. John Chung, DOE Facilities  
Mr. Cory Kaizuka, DAGS Hawaii



WILSON OKAMOTO  
CORPORATION  
COMMERCIAL • CIVIL • MARINE • ENVIRONMENTAL

10349-01  
August 20, 2018

Mr. Roderick Becker, Comptroller  
State of Hawai'i  
Department of Accounting and General Services  
1151 Punchbowl Street  
Honolulu, HI 96813

Attention: David DePonte  
Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Becker:

Thank you for your April 20, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. We acknowledge that the project does not impact any Department of Accounting and General Services projects or existing facilities.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Vice President, Director - Planning

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



Harry Kim  
Mayor



**County of Hawai'i**  
**HAWAII FIRE DEPARTMENT**  
25 Aupuni Street • Suite 2501 • Hilo, Hawai'i 96720  
(808) 932-2900 • Fax (808) 932-2928

10349-01  
4/16/18 CC: BC  
Darren J. Rosario  
Fire Chief  
Ranwick J. Victorlao  
Deputy Fire Chief



10349-01  
June 22, 2018

April 13, 2018

Earl Matsukawa, AICP  
Wilson Okamoto Corporation  
Project Manager  
1907 S. Beretania Street, Suite 400  
Honolulu, Hawai'i 96826

Dear Mr Earl Matsukawa:

**SUBJECT:** Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement, Paauau, Ka'u, Hawai'i

We are in receipt of your letter dated March 15, 2018 in regards to a draft Environmental Assessment and Anticipated finding of no significant Impact for the above listed subject.

The Hawai'i Fire Department has no issues or comments with regards to the request for draft Environmental Assessment, Pre-Assessment Consultation.

If you should have any questions, please feel free to contact my office at (808)932-2911.

Mahalo,

DARREN J. ROSARIO  
Fire Chief

RP/ds

Chief Darren Rosario, Fire Chief  
County of Hawai'i  
Hawai'i Fire Department  
25 Aupuni Street, Suite 2501  
Hilo, HI 96720

**Subject:** Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Chief Rosario:

Thank you for your April 13, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will note the Hawai'i Fire Department had no issues with the project.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC



Harry Kim  
Mayor



**County of Hawai'i**

**POLICE DEPARTMENT**  
349 Kapiolani Street • Hilo, Hawai'i 96720-3998  
(808) 935-3311 • Fax (808) 961-2369

10349-01  
A/10/18  
Paul K. Ferreira  
Police Chief  
C.B. Kenneth Bugado Jr.  
Deputy Police Chief

EM

April 2, 2018

RECEIVED  
APR 05 2018  
WILSON OKAMOTO CORPORATION

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, PRE-ASSESSMENT CONSULTATION;  
PĀHALA COMMUNITY LARGE CAPACITY CESSPOOL REPLACEMENT  
PĀ'AU'AU, KA'U, HAWAII  
REQUEST FOR COMMENT

Dear Mr. Matsukawa:

Staff has reviewed the draft regarding the Pahala Cesspool Replacement Project. The Hawai'i Police Department does not have any comments or concerns at this time.

Thank you for allowing the Hawai'i Police Department the opportunity to provide input into this assessment.

Should you require additional assistance or input, please contact Captain Kenneth Quicho, Commander of the Ka'u District, at (808) 939-2520 or via email at [kenneth.quicho@hawaiicounty.gov](mailto:kenneth.quicho@hawaiicounty.gov).

Sincerely,

PAUL K. FERREIRA  
POLICE CHIEF

KQ



**WILSON OKAMOTO  
CORPORATION**  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
June 21, 2018

Chief K. Paul Ferreira, Police Chief  
County of Hawai'i  
Police Department  
349 Kapiolani Street  
Hilo, HI 96720

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Chief Ferreira:

Thank you for your April 2, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will note the Hawai'i Police Department had no concerns at this time.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

Harry Kim  
Mayor



County of Hawai'i  
PLANNING DEPARTMENT

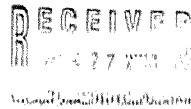
West Hawaii's Office  
74-5044 Ane Keohokalole Hwy  
Kaunua-Kunui, Hawai'i 96740  
Phone (808) 323-4770  
Fax (808) 327-3563

East Hawaii's Office  
101 Paoluhi Street, Suite 3  
Hilo, Hawai'i 96720  
Phone (808) 961-8285  
Fax (808) 961-8742

10344-01  
4/20/18  
CC: BC  
Michael Yee  
Director  
Daryn Arat  
Deputy Director  
EM  
JS

Mr. Earl Matsukawa  
April 25, 2018  
Page 2

April 25, 2018



Mr. Earl Matsukawa  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826

Dear Mr. Matsukawa:

**SUBJECT: REVISED Draft Environmental Assessment, Pre-Assessment Consultation**  
**Project: Pāhala Community Large Capacity Cesspool Replacement**  
**TMK: (3) 9-6-002:018, Pa'au'au, Ka'u, Hawai'i**

Thank you for your letter dated March 15, 2018, requesting comments from this office regarding the preparation of a Draft Environmental Assessment (DEA) for the subject project. Please note, this letter replaces our previous response dated April 16, 2018.

The County of Hawai'i, Department of Environmental Management (DEM) is proposing to construct wastewater system improvements to replace the current County owned system servicing Pāhala. These wastewater system improvements would allow the County to comply with Environmental Protection Agency (EPA) regulations requiring closure of the large capacity Cesspools and to construct a system meeting current State of Hawai'i Department of Health (DOH) and DEM design guidelines for the collection, treatment, and disposal of the treated effluent. We would respectfully ask that you consider expanding the collection system to service the greater urban Pāhala area or design the treatment facilities capacity to ensure expansion is possible in the future.

The subject parcel consists of 42.5 acres and is zoned Agricultural (A-20a) by the County. It is located in the State Land Use Agricultural (A) district. In addition, the parcel is designated Low Density Urban (LDU) and Industrial (IND) by the Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) Map. The subject parcel is not located within the Special Management Area (SMA).

According to Hawai'i County Code (Zoning), Section 25-5-72(c), Public uses and structures, other than those necessary for agricultural practices are permitted in the Agricultural district, provided that a special permit is obtained for such use if the building site is located within the State land use agricultural district. Therefore, the treatment and disposal facility, considered a public use, would require a special permit.

In addition, the Land Study Bureau (LSB) classifies the subject parcel as B and D soils. Agricultural Lands of Importance to the State of Hawai'i (ALISH) classifies the subject parcel as a mix of Type 0 (Unclassified), Type 1 (Prime Lands), and Type 3 (Other). Hawai'i Revised Statutes (HRS) 205-4.5 (a) states "Within the agricultural district, all lands with soil classified by the land study bureau's detailed land classification as overall productivity rating class A or B and for solar energy facilities, class B or C, shall be restricted to the following permitted uses: (7) Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures;" Therefore, when considering the Special Permit application, it would be advisable to locate the treatment facility on the proposed property in the LSB D soil and ALISH Type 0 area.

The public utilities chapter of the County of Hawai'i General Plan 2005 (as amended), includes the following policy (11.6.2) pertinent to the proposed project:

- c) Immediate steps should be taken to designate treatment plant sites, sewerage pump station sites, and sewer easements according to facility plans to facilitate their acquisition.

In the DEA, please describe how the proposed use is consistent with the policies, standards and courses of action of the County of Hawai'i General Plan.

The project site is located in the Ka'u Community Development Plan (CDP) planning area and the DEA should include a discussion of the proposed project's alignment with the CDP, which can be found electronically at <http://www.hawaiicountyvcdp.info/ksu-cdp>, including but not limited to:

- Objective 2: Preserve prime and other viable agricultural lands and preserve and enhance viewscapes that exemplify Ka'u's rural character.
- Objective 7: Identify viable sites for critical community infrastructure, including water, emergency services and educational facilities to serve both youth and adults.

Mr. Earl Matsukawa  
April 25, 2018  
Page 3

- *Policy 120: Extend the primary wastewater collection lines in Pāhala and Nā'ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems.*

We recommend the DEA also describe the proposed project's consistency with Hawai'i Revised Statutes (HRS), Chapter 205A, Coastal Zone Management. More specifically, the DEA should describe the projects consistency with Policy (3)(B) to "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."

Finally, given Ka'u's rich heritage of natural and cultural resources, appropriate attention should be given to identifying any existing resources on the subject property or surrounding areas that may be impacted.

We have no further comments to offer at this time. However, please keep us informed and provide our department with a copy of the DEA for our review and comment.

Should you have any questions, please feel free to contact Keiko Mercado of this office at [Keiko.Mercado@hawaiicounty.gov](mailto:Keiko.Mercado@hawaiicounty.gov) or (808) 961 8134.

Sincerely,

  
MICHAEL YEE  
Planning Director

KM:bm:ja

\\CDH33\planning\public\wpw\m60\Keiko\EA-EIS Review\Preconsultation\EA-Pahala, Large, Cesa\pool.Replacement.REVISED.doc



**WILSON OKAMOTO**  
CORPORATION

PROFESSIONAL ENGINEERS ARCHITECTS

10349-01  
Letter to Mr. Michael Yee, Director  
Page 2  
August 20, 2018

10349-01  
August 20, 2018

Mr. Michael Yee, Director  
County of Hawai'i  
Planning Department  
Aupuni Center, 101 Pauahi Street, Suite 3  
Hilo, HI 96720

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'su, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Yee:

Thank you for your April 25, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. As stated in the Project Summary, the Pāhala Community Large Capacity Cesspool Replacement project would be funded by an Environmental Protection Agency (EPA) Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (CSRF) loan program administered by the Department of Health (DOH) Wastewater Branch. Both the EPA and DOH require preparation of an Environmental Assessment (EA) according to their respective guidelines.

The Draft Environmental Assessment (EA) will confirm that the treatment and disposal project site is zoned Agricultural (A-20a) by the County. It is located in the State Land Use Agricultural (A) district. In addition, the parcel is designated Low Density Urban (LOU) and Industrial (IND) by the Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) Map. The project site parcel is not located within the Special Management Area (SMA).

According to Hawai'i County Code (Zoning), Section 25-5-72(c), Public uses and structures, other than those necessary for agricultural practices are permitted in the Agricultural district, provided that Special Permit is obtained for such use or building located within the State land use agricultural district. The treatment and disposal facility is considered a public use in the State Land Use Agricultural district and, therefore, would require a Special Permit.

The Draft EA will note the Land Study Bureau (LSB) classifies the subject parcel as B and D soils. Agricultural Lands of Importance to the State of Hawai'i (ALISH) classifies the subject parcel as a mix of Type 0 (Unclassified), Type 1 (Prime Lands), and Type 3 (Other).

Hawai'i Revised Statutes (HRS) 205-4.5 (a) states "*Within the agricultural district, all lands with soil classified by the Land Study Bureau's detailed land classification as overall productivity rating class A or B and for solar energy facilities, class B or C, shall be restricted to the following permitted uses: Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures;*" Therefore, when considering the Special Permit application, it would be advisable to locate the treatment facility on the proposed property in the LSB D soil and ALISH Type 0 area.

The Draft EA will note HRS §205.46(b) states: "*Uses not expressly permitted in subsection (a) shall be prohibited, except the uses permitted as provided in §205-6 (a) which states: subject to this section, the County Planning Commission may permit certain unusual and reasonable uses within agricultural and rural districts other than those for which the district is classified. Any person who desires to use the person's land within an agricultural or rural district other than for an agricultural or rural use, as the case may be, may petition the Planning Commission of the county within which the person's land is located for permission to use the person's land in the manner desired.*" Accordingly, the Department of Environmental Management will submit a Special Permit application to the County Planning Commission for the Pāhala Community Large Capacity Cesspool Replacement project.

The Draft EA will be prepared to meet the DOH requirements which would include a discussion of plans and policies applicable to the project site and surrounding area. The discussion would cover the policies, standards and courses of action set forth in the County of Hawai'i General Plan.

The Draft EA will also discuss the Ka'u Community Development Plan (CDP) dated October 2017 Ordinance No. 2017-66. The various objectives and policies set forth in the plan, including those related to the wastewater collection system servicing areas not presently serviced by the LCC. The Draft EA will also discuss County of Hawai'i Code Chapter 21 related Article 2 Section 21-5 which states: ("*(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.*") The Draft EA will also include a discussion the treatment and disposal system to service the entire Pāhala community.

10349-01

Letter to Mr. Michael Yee, Director

Page 3

August 20, 2018

As previously stated, the Draft EA will be prepared to meet the DOH requirements which would include a discussion of plans and policies applicable to the project site and surrounding area including Chapter 205A, Hawai'i Revised Statutes, Coastal Zone Management.

The Draft EA will discuss archaeological and cultural resources and consultation with the State of Hawai'i Department of Land and Natural Resources State Historic Preservation Division and various Native Hawai'ian Organizations as required by 54 U.S.C. §300101 and 54 §306108.

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read "Earl Matsukawa", written in a cursive style.

Earl Matsukawa, AICP

Vice President, Director - Planning

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

Harry Kim  
Mayor

Wii Okabe  
Managing Director



County of Hawai'i  
DEPARTMENT OF PUBLIC WORKS

Aupuni Center  
101 Puuhale Street, Suite 7 Hilo, Hawaii 96720-4224  
(808) 961-8321 • Fax (808) 961-8630  
public\_works@hawaiicounty.gov

10349-01 4/17/18  
Alan G. Simeon, P.E.  
Director  
cc: BC  
Merrick H. Nishimoto  
Deputy Director



WILSON OKAMOTO  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
June 22, 2018

Mr. Ben Ishii, Division Chief  
Engineering Division  
County of Hawai'i  
Department of Public Works  
Aupuni Center, 101 Puuhale Street, Suite 7  
Hilo, HI 96720

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Response to Comment

Dear Mr. Ishii:

Thank you for your April 10, 2018 comment letter (LUD-396002 18) regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will show the collection system and wastewater treatment and disposal project will be located within the Zone X, area determined to be outside the 500-year floodplain, as designated by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM).

The Draft EA will indicate that the design plans will need to conform to Hawaii County Code, Chapter 10, Erosion and Sedimentary Control and Chapter 22, Streets.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

APRIL 16, 2018

WILSON OKAMOTO CORPOARTION  
1907 SOUTH BERETANIA STREET, SUITE 400  
HONOLULU, HAWAII 96826  
ATTN: EARL MATSUKAWA, AICP

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, PRE-ASSESSMENT  
CONSULTATION; PAHALA COMMUNITY LARGE CAPACITY  
CESSPOOL REPLACEMENT  
PA'AU'AU, KA'U, HAWAII  
TMK: (3) 9-6-002:018 & Associated Streets

We received the subject dated March 15, 2018 and have the following comments:

The subject parcel is in an area designated as Zone X on the Flood Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone X is an area determined to be outside the 500-year floodplain.

All activities shall comply with the requirements of Hawaii County Code (HCC), Chapter 10, Erosion and Sedimentary Control.

Construction within the County right-of-way shall comply with HCC, Chapter 22, County Streets.

Should there be any questions concerning this matter, please contact Ms. Robyn Matsumoto in our Engineering Division at (808) 961-8924.

BEN ISHII, Division Chief  
Engineering Division

RM



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII**  
 345 KEKUAŌAŌA STREET, SUITE 20 • HILO, HAWAII 96720  
 TELEPHONE (808) 961-8050 • FAX (808) 961-8857

April 5, 2018

Mr. Earl Matsukawa  
 Wilson Okamoto Corporation  
 1907 South Beretania Street, Suite 400  
 Honolulu, HI 96826

Dear Mr. Matsukawa:

**Subject: Pre-Environmental Assessment Consultation**  
**Pāhala Villages Large Capacity Cesspool Conversion Replacement**  
**Pāhala, Ka'ū, Island of Hawai'i, Hawai'i**  
**Tax Map Key (3) 9-6-002:018**

This is in response to your Pre-Environmental Assessment letter dated March 15, 2018.

Please be informed that the subject parcel does not have an existing water service with the Department as the parcel is beyond the service limits of the Department's existing water system. The nearest point of connection is from an existing 6-inch waterline at the intersection of Huapala Street and Maile Street, approximately 2,000 feet northeast of the property.

The Department would request estimated maximum daily water usage calculations, prepared by a professional engineer, licensed in the State of Hawai'i, for review. After review of the calculations, the Department will determine if water is available and a water commitment can be issued, the water commitment deposit amount, facilities charges due, and water system improvements and other conditions for final approval.

The Department requests that the construction plans show, and the proposed sewer lines be installed with, the proper horizontal and vertical clearances from our existing water system facilities and concrete jacketing at waterline crossings, where necessary, as recommended by the Department's Water System Standards.

In addition, backflow prevention devices must be installed where there are connections to our water system at wastewater processing and treatment facilities.

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

Sincerely yours,

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



RQ:dmg

copy - County of Hawai'i, Department of Environmental Management, Wastewater Division

... *Water, Our Most Precious Resource* ... *Ka Wai A Kāne* ...

The Department of Water Supply is an Equal Opportunity provider and employer.

10349-01 EM ✓  
 4/12/18 JS -  
 CC: RL JS -



**WILSON OKAMOTO CORPORATION**  
 INNOVATORS • PLANNERS • ENGINEERS

10349-01  
 June 21, 2018

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

Attention: Ryan Quitariano, Water Resources Planning Branch

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
 Pāhala Community Large Capacity Cesspool Replacement  
 Pā'au'au, Ka'ū, Hawai'i  
 Response to Comment

Dear Mr. Okamoto:

Thank you for your April 5, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. The Draft Environmental Assessment (EA) will note the treatment and disposal project site parcel does not have an existing water service from the Department as the parcel is beyond the service limits of the Department's existing water system. The nearest point of connection is from an existing 6-inch waterline at the intersection of Huapala Street and Maile Street, approximately 2,000 feet northeast of the property.

The Draft EA will note that the project will require estimated maximum daily water usage calculations be prepared by a professional engineer, licensed in the State of Hawai'i. After review of the calculations, the Department will determine if water is available and a water commitment can be issued, the water commitment deposit amount, facilities charges due, and water system improvements and other conditions for final approval.

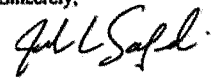
The construction plans will show proposed collection system lines and the horizontal and vertical clearances from water system lines.



10349-01  
Letter to Mr. Keith Okamoto  
Page 2  
June 21, 2018

We appreciate your participation in the Draft EA process.

Sincerely,

  
Earl Matsukawa, AICP  
Project Manager

cc: D. Beck, DEM  
K. Rao, EPA  
C. Lekven, PE, BC

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**Appendix B**  
**November 2019 Preliminary Engineering Report (PER)**

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Pahala Wastewater  
Treatment Plant  
Preliminary Engineering  
Report

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Prepared for  
County of Hawaii, Department of  
Environmental Management

~~June 2018~~

*November 2019*

# Pahala Wastewater Treatment Plant Preliminary Engineering Report

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Prepared for  
County of Hawaii, Department of Environmental Management  
~~June 2018~~  
November 2019



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

A handwritten signature in black ink, appearing to read "c.c. lekien".

April 30, 2020

---

Signature

Expiration Date of the License



2261 Aupuni Street, Suite 201  
Wailuku, Hawaii 96793

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## List of Abbreviations

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AB	aggregate base	Mgal	million gallons
AC	asphalt concrete	mm	millimeter
BMP	Best Management Practices	MSL	mean sea level
BOD <sub>5</sub>	5-day biochemical oxygen demand	N	nitrogen
CCH	City and County of Honolulu	NPV	net present value
cfs	cubic feet per second	O&M	Operation and Maintenance
COH	County of Hawaii	P	Phosphorus
CFR	Code of Federal Regulations	Psi	pounds per square inch
DNA	deoxyribonucleic acid	RNA	ribonucleic acid
DEM	Department of Environmental Management	ROW	right-of-way
DOH	Department of Health	scfm	standard cubic feet
ELLF	end-of-lamp-life	SCS	Soil Conservation Service
FIRM	Flood Insurance Rate Map	SR	slow rate
FOG	fats, oils, and grease	TSS	total suspended solids
ft <sup>3</sup>	cubic feet	UIC	Underground Injection Control
FTE	full-time equivalent	USEPA	United States Environmental Protection Agency
GAC	granular activated carbon	UV	ultraviolet
gpm	gallons per minute	WQV	Water Quality Volume
H <sub>2</sub> S	hydrogen sulfide	WWTP	Wastewater Treatment Plant
HAR	Hawaii Administrative Rules		
HDPE	high density polyethylene		
HELCO	Hawaii Electric Light Company		
hp	horsepower		
hp/Mgal	horsepower per million gallons		
hr	hour		
hp-hr	horsepower-hour		
L	liter		
lbs	pounds		
LCC	large capacity cesspools		
LPHO	low pressure high output		
MBR	membrane bioreactor		
Mg	milligrams		

## Section 1

# Introduction

## 1.1 Background

The town of Pahala is located in the Kau district of the Island of Hawaii. According to the 2010 United States Census, the town population is approximately 1,350 persons.

The Pahala community was established as the result of the sugar operations of the C. Brewer Company. A portion of the community is serviced by a sewer system that was privately built, owned, and operated by the C. Brewer Company. The wastewater collected by the sewer system discharges into large capacity “gang” cesspools. Many years after its establishment, the private sewer system ownership was conveyed to the County of Hawaii (COH) Department of Environmental Management (DEM).

In 1998, the U.S. Environmental Protection Agency (USEPA), promulgated regulations, 40 Code of Federal Regulations (CFR) 144.14, that require the elimination of large capacity “gang” cesspools (LCCs). The County intends to construct a new sewer collection system located within public right-of-way (ROW) and replace the existing LCCs with a wastewater treatment plant to address the wastewater treatment and disposal needs of the Pahala community.

This report summarizes a proposed wastewater treatment plant (WWTP) needed in order to treat and dispose of the wastewater flow that is currently discharged to the LCCs, plus additional sewer connections. The report presents the existing and estimated future flows and loads to the treatment plant, the proposed treatment processes, recommendation for the WWTP upgrades needed to meet the future treatment needs, and an initial opinion of the cost to construct the improvements project.

## 1.2 Existing System

Figure 1-1 shows the collection system network and service areas for the LCCs. The collection system is a network of gravity sewers that discharge to two existing LCCs. A detailed analysis of the existing wastewater collection system was completed by others (M&E Pacific, December 2004). The report concluded that the Pahala community existing sewer system consists of about 3,000 linear feet of 6-inch diameter and 10,000 linear feet of 4-inch diameter pipelines. Residential laterals connect to 4-inch sewers that discharge into 6-inch sewer mains, predominately found in private property, which transmit wastewater to the LCCs. There are approximately 8 manholes in the sewer system. There are no pump stations and the system is not designed to collect stormwater.

## 1.3 Report Contents

Section 2 presents flow and load projections for the new WWTP. Section 3 evaluates effluent management options, and the treatment requirements for the preferred option. Section 4 presents evaluations conducted to develop the preliminary design of the proposed WWTP, which is presented in Section 5. An implementation plan is briefly presented in Section 6, followed by discussion of other treatment options that were considered and evaluated. The report concludes with a site selection consideration in Section 8.

INSERT FIGURE

**Figure 1-1. Pahala Existing Sewer Collection System and LCC Service Area**

## Section 2

# Flow and Load Projections

This section summarizes the flow and load projections for the new WWTP.

### 2.1 Service Area

Within the town of Pahala, there is an existing wastewater collection that services approximately 109 properties. The collection system is currently located within easements in private properties and is treated and disposed through two LCCs. Figure 2-1 shows the service area for the new WWTP. The Kau Community Development plan indicates that the sewer system may eventually be expanded to service the entire community; however, the initial collection system and WWTP presented in this report will service the properties currently connected to the LCCs or located adjacent to the new collection system. Although this report does not include design for the full buildout service area, the proposed WWTP has been designed to accommodate modifications within the proposed 14.9-acre site for the anticipated future expansion of the service area.



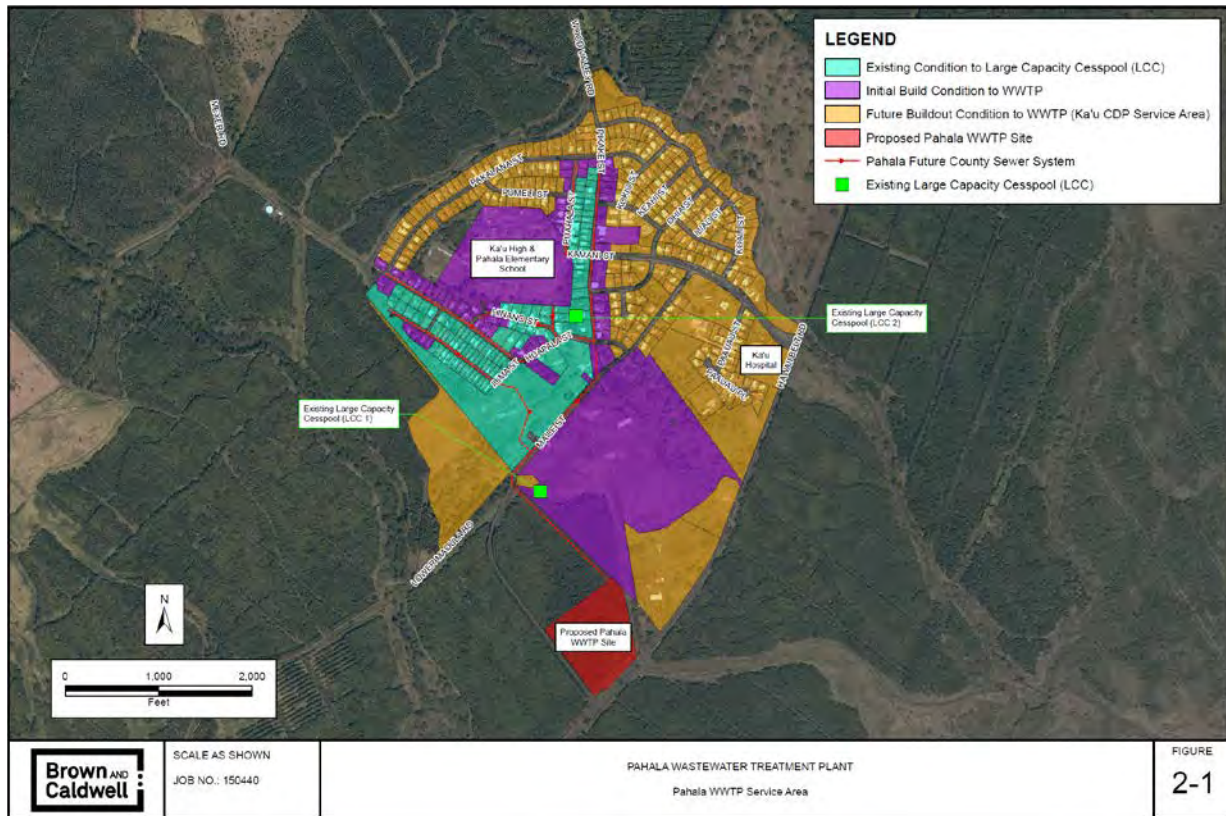


Figure 2-1. Pahala WWTP Service Area

## 2.2 Flow Projections

Wastewater flow projections were developed using the City and County of Honolulu's (CCH) current (2017) wastewater standards. Table 2-1 summarizes the flow projections.

Description	Value	Peaking Factor
Average dry weather flow	189,000 gallons per day	1.0
Peak day wet weather flow	662,000 gallons per day	3.5
Peak hour wet weather flow	630 gallons per minute	4.8

The WWTP will be designed to provide an average dry weather flow capacity of 190,000 gallons per day.

## 2.3 Influent Characteristics

The properties within the existing service area are primarily residential, but do include several commercial, apartment, and industrial zoned parcels. The wastewater characteristics of the WWTP influent are assumed to be similar to typical domestic wastewater. Table 2-2 provides a summary of the assumed influent characteristics.

Parameter	Value
5-day biochemical oxygen demand (BOD <sub>5</sub> )	300 mg/L
Total suspended solids (TSS)	300 mg/L
Total nitrogen	40 mg/L
Total phosphorus	7 mg/L

## 2.4 Influent Mass Loads

Table 2-3 summarizes the projected loads to the WWTP, based on the proposed average dry weather capacity of 190,000 gallons per day and the influent characteristics presented in Table 2-2.

Description	Value
BOD <sub>5</sub>	480 lbs./day
TSS	480 lbs./day
Total nitrogen	60 lbs./day
Total phosphorus	10 lbs./day

## 2.5 Mass Loads to the Environment via Existing LCCs

Currently, 109 properties discharge without treatment to two LCCs, as shown in Figure 2-2. These types of cesspools are a public health and environmental concern because of their likelihood of releasing disease causing pathogens and other contaminants, such as nitrate, to groundwater. The current annual mass loads to the environment via the existing LCCs based on the flow projections and assumed wastewater characteristics presented above are summarized in Table 2-4.

<b>Table 2-4. Mass Loads to the Environment via Existing LCCs</b>	
<b>Parameter</b>	<b>Annual Load</b>
BOD <sub>5</sub>	174,000 lbs./year
TSS	174,000 lbs./year
Total N	23,000 lbs./year
Total P	4,000 lbs./year

## Section 3

# Effluent Management Options and Regulatory Requirements

Effluent management options are evaluated in this section, followed by an assessment of regulatory requirements for the recommended effluent management system.

### 3.1 Effluent Management Options

Effluent management options are evaluated below.

#### 3.1.1 Ocean Discharge

Ocean discharge of treated effluent is not considered a viable option for this small community due to the long distance to the shoreline (approximately 3 miles), high cost to construct an outfall, stringent receiving water quality standards, high receiving water monitoring cost due to the distance to Hilo harbor, and difficulty and length of time required to secure the required permits.

*The coastal waters in the Pahala area are classified as “AA” marine waters by DOH. HAR 11-54 does not allow zones of mixing in waters up to a distance of 300 meters (one thousand feet) off shore if there is no defined reef area and if the depth is greater than 18 meters (ten fathoms). The water quality criteria for nutrients for Class AA embayments are listed in Table 3-1. If a mixing zone is not provided, then a WWTP discharging to the coastal waters would be required to treat water to meet the applicable water quality criteria. Treatment to the specified levels is not feasible with current technologies. Therefore, ocean discharge is not feasible.*

**Table 3-1. Nutrient Water Quality Standards for Class AA Embayments**

Parameter	Geometric mean not to exceed	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total nitrogen	200 µg/L	350 µg/L	500 µg/L
Ammonia nitrogen	6 µg/L	13 µg/L	20 µg/L
Nitrate + nitrate nitrogen	8 µg/L	20 µg/L	35 µg/L
Total phosphorus	25 µg/L	50 µg/L	75 µg/L

#### 3.1.2 Subsurface Disposal via Injection Wells

Per Hawaii Administrative Rules (HAR), Title 11, Chapter 23, disposal to groundwater via an injection well is not allowed mauka of the State of Hawaii Department of Health (DOH) Underground Injection Control (UIC) line. Since the town of Pahala is located mauka of the UIC line, an injection well is not a viable option.

### 3.1.3 Water Recycling

An irrigation assessment was prepared to assess the viability of water recycling as the primary effluent management system, assuming the recycled water would be used to irrigate macadamia nut trees. Figure 3-1 is a summary of the assessment that shows there is typically no irrigation demand for six months of the year due to high rainfall. In addition, the DOH requires that all water recycling programs have a 100 percent backup disposal system in place to handle flow that does not meet recycled water quality standards or when recycled water supply exceeds demand. Therefore, water recycling is not a viable primary effluent management strategy for the community. However, water recycling treatment, storage, and distribution systems could be added in the future.

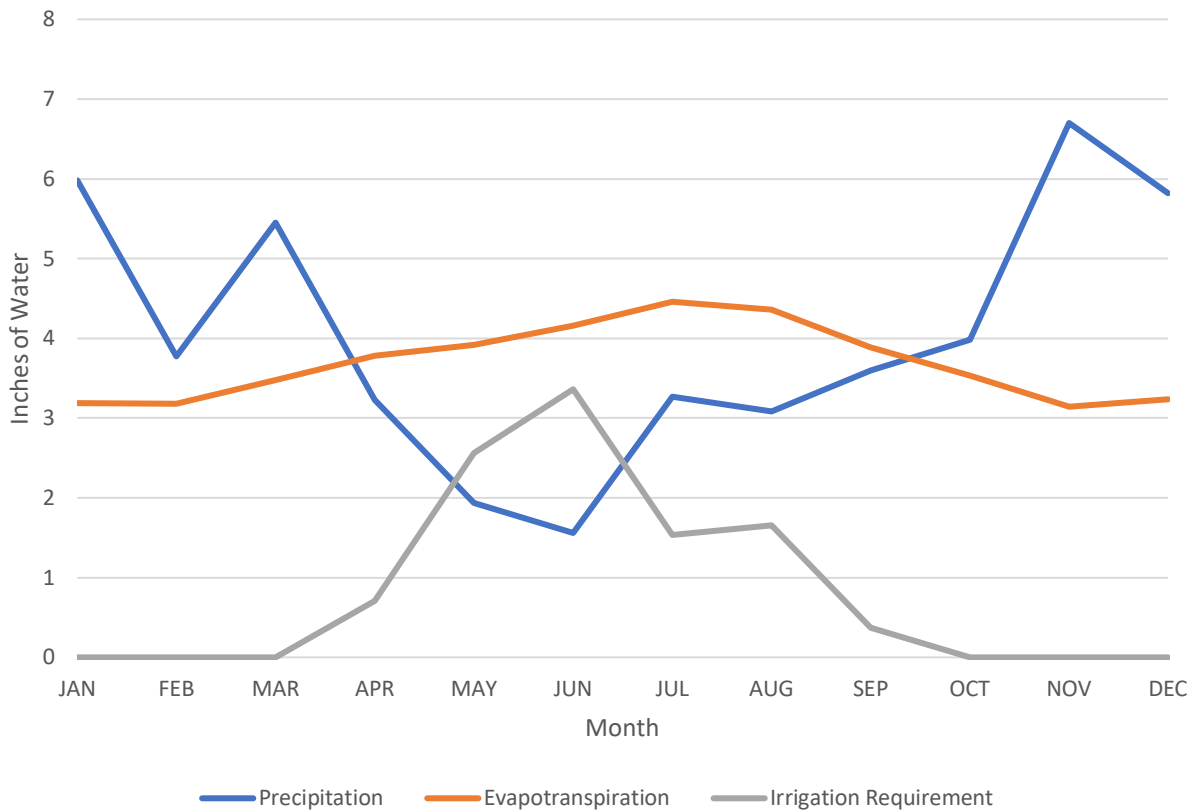


Figure 3-1. Irrigation Demand Assessment

### 3.1.4 Land Treatment

The USEPA defines land treatment as “the application of appropriately pre-treated municipal and industrial wastewater to the land at a controlled rate in a designed and engineered setting. The purpose of the activity is to obtain beneficial use of these materials, to improve environmental quality, and to achieve treatment goals in a cost-effective and environmentally sound manner” (USEPA, September 2006).

Land treatment systems rely on soil and vegetation to achieve treatment objectives, rather than energy-intensive mechanical equipment. As such, they are considered to be a form of “natural” treatment (Crites, et. al., 2014).

Land treatment is not a new concept. “Land application of wastewater was the first ‘natural’ technology to be rediscovered (after passage of the Clean Water Act of 1972). In the 1840s in England, it was recognized as avoiding water pollution as well as returning nutrients in wastewater back to the land. In the 19<sup>th</sup> century it was the only acceptable method for waste treatment, but it gradually slipped from use with the invention of modern devices” (Crites, et. al., 2014).

The soils at the proposed WWTP location are suitable for slow rate (SR) land treatment. SR land treatment consists of irrigation of land and vegetation with effluent. Significant treatment is provided as the water percolates through the soil. The vegetation uses the nutrients in the effluent as fertilizer, and transpires a portion of the applied water.

### 3.1.5 Drain Field

A drain field (i.e., leach field) could potentially be constructed for subsurface disposal of treated effluent. Preliminary assessment of the concept based on the site soil characteristics indicate approximately 20,000 linear feet of drain field trench would be required to accommodate the anticipated flow. It would be difficult to evenly distribute effluent throughout a drain field of this size. In addition, DOH regulations require a redundant drain field for subsurface disposal systems, making this option expensive to implement. This option is considered impractical for the community.

### 3.1.6 Recommendation

A slow rate land treatment system is recommended for effluent management for the community.

## 3.2 Treatment Requirements

The DOH regulates land treatment as “land disposal” per Hawaii Administrative Rules (HAR) 11-62. Table 3-2 lists the applicable effluent requirements for land disposal applicable to the project that were in effect at the time this report was prepared.

<b>Description</b>	<b>Value</b>	<b>HAR Reference</b>
BOD <sub>5</sub>	30 mg/L monthly average 60 mg/L peak	11-62-26
TSS	30 mg/L monthly average 60 mg/L peak	11-62-26
Disinfection	Except for subsurface disposal systems, continuous disinfection of the treated effluent shall be provided	11-62-24
Setbacks	Treatment units shall be not less than 25 feet from property lines nor less than 10 feet from any building	11-62-23.1
Public accessibility control	6-foot-high fence surrounding treatment units	11-62-08

## Section 4

# Wastewater Treatment Evaluations

This section presents the evaluations conducted in development of the proposed WWTP.

## 4.1 Preliminary Treatment

The preliminary treatment system will include screening, influent flow measurement, and influent sampling equipment.

### 4.1.1 Screening

Screening is recommended to protect the downstream system operations from large objects, debris, and rags that can be present in wastewater. Aerated lagoon treatment systems require a minimum of coarse screens to protect the aeration equipment. The industry trend is towards finer screening systems that remove greater amounts of debris from the waste stream; screens with 6-millimeter (mm) (¼-inch) openings are frequently used for activated sludge treatment systems. An aerated lagoon treatment system can benefit from ¼-inch screening to reduce the amount of floatable debris on the lagoon shoreline, creating a cleaner facility that is less attractive to birds. Since the Pahala WWTP will not be continuously staffed, a screening process requiring minimal attention is desirable. Furthermore, the screenings volume is expected to be small, subsequently screenings disposal is expected to be infrequent; weekly at most. Therefore, the screenings must be washed of organic debris to prevent the accumulation of nuisance odors and flies in the screenings barrel or bag between screening disposal events.

#### 4.1.1.1 In-channel cylindrical screen

We recommend an in-channel cylindrical screen for this installation. The in-channel cylindrical screen combines screening, screenings washing, dewatering, compacting, and bagging/disposal within a single unit. The screening portion consists of an inclined screen basket inserted into the wastewater channel. The screening basket can consist of bars, perforated plates or sieves, depending on the application and clear opening required. The controls can be set to allow a mat to build up on the screening surface, allowing finer screening of the wastewater. Controlled by head loss, a rake arm starts rotating within the screen basket, pushing the screenings off the rake and into a perforated screenings hopper located at the screen's central axis. A shafted auger along the screen axis conveys the screenings from the hopper through an inclined tube, which dewateres and compacts the screenings. The tube includes a perforated dewatering section. The discharged screenings are about 40-percent dry, and can be discharged into a bin or directly into a bagging system. Figure 4-1 illustrates the process. Manufacturers include Lakeside and Huber. The key benefit to this system is the integrated screenings washing system, minimizing additional screenings handling and odor potential.

For this installation, the headworks will include two in-channel cylindrical screens, one will be on-line when the other is redundant, plus a bypass channel with manually cleaned bar rack.

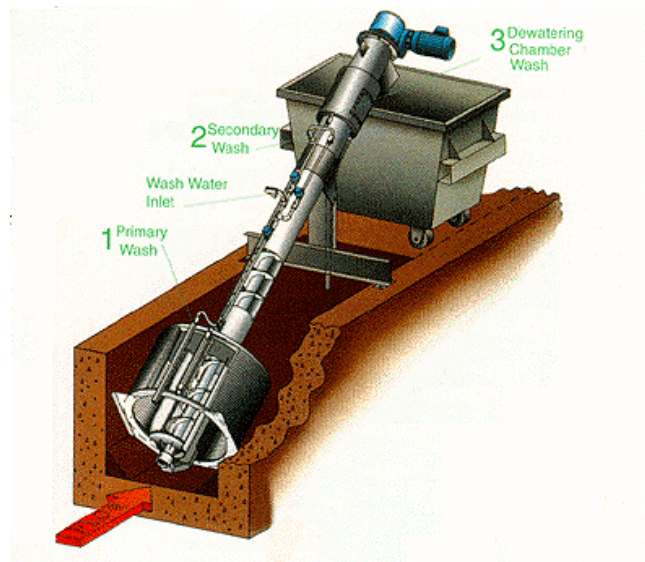


Figure 4-1. In-Channel Cylindrical Screen

#### 4.1.2 Influent Flow Measurement

Influent flow measurement is recommended to allow assessment of flows and loads to the biological treatment process, and to assess the biological treatment process performance. A Parshall flume will be provided upstream of the screening system to continuously record influent flow rates. Parshall flumes work well for influent measurement because the flume can operate in an open-channel configuration, can accommodate wide ranges of flows, and is self-cleaning. A straight approach length of at least 20 times the flume throat width will be provided upstream of the flume to provide favorable hydraulic conditions.

#### 4.1.3 Influent Flow Sampling

An automatic refrigerated composite sampler is recommended to allow influent composite samples to be collected. Influent composite samples, when combined with influent flow measurement, can be used to calculate influent mass loading rates to the WWTP to assess the treatment performance and optimization of aeration rates in the biological treatment process. Periodic influent sampling is also recommended to monitor for changes in the influent characteristics.

#### 4.1.4 Preliminary Design of Headworks

Figure 4-2 shows a plan and section of the proposed headworks. Influent wastewater will enter the upstream end of the headworks channel. Stop plates will be used to divert the flow to one of the two in-channel cylindrical screens, or to the manually-cleaned bar rack. The slide gates will be designed to allow automatic overflow to the other channels in the event of mechanical screen failure. The washed and compacted screenings will be deposited in a bag or 55-gallon drum for periodic disposal. The Parshall flume and automatic refrigerated composite sampler will be located upstream of the screens. The channels will be covered with fiberglass or aluminum plate to facilitate foul air collection, which will be conveyed to an odor control unit. In addition, a free-standing roof structure will be constructed over the headworks to protect the operators and equipment from rain and sun.



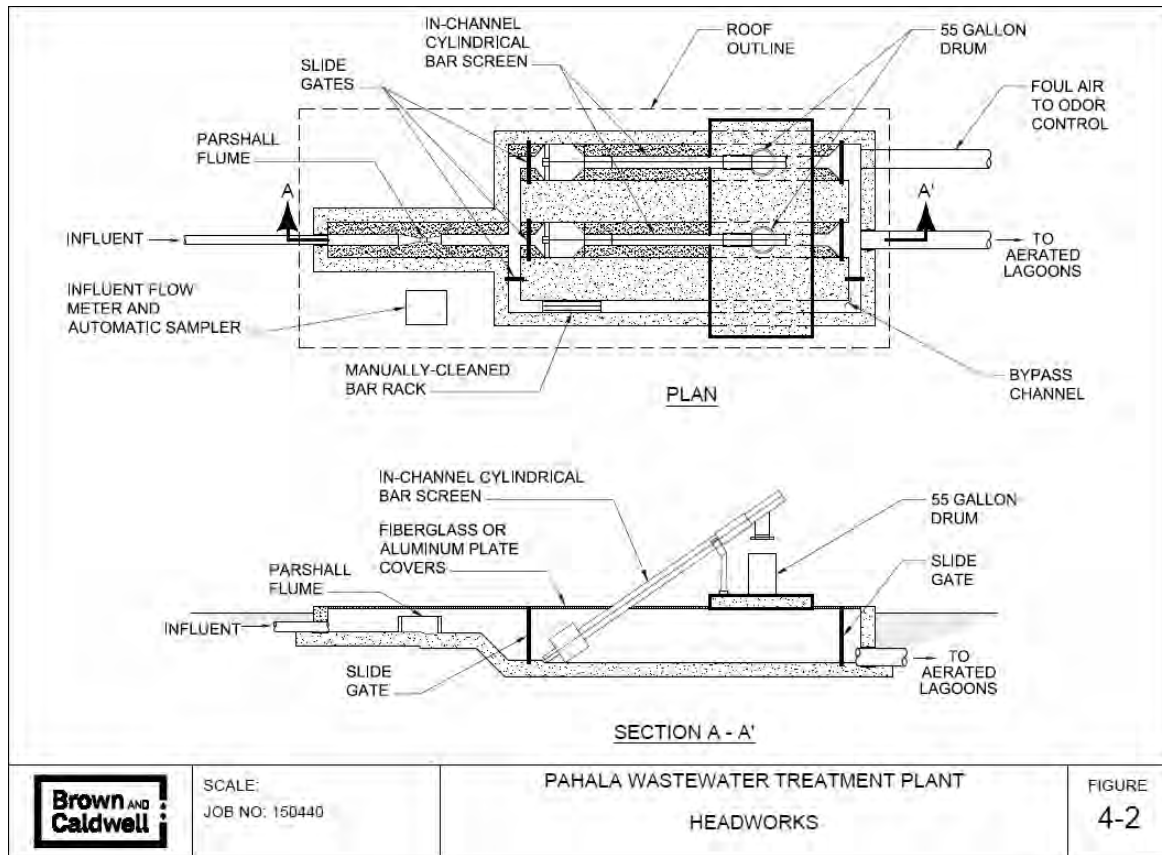


Figure 4-2. Headworks

### 4.1.5 Odor Control

A notorious location for foul odor is the headworks of a wastewater treatment plant. This odor is caused by hydrogen sulfide ( $H_2S$ ), which is formed under anaerobic conditions of the wastewater collection system. Due to  $H_2S$  low solubility in wastewater, when there is an excessive concentration of  $H_2S$  in the wastewater or if there is turbulence,  $H_2S$  gas escapes into the atmosphere. This release produces the distinct rotten egg smell. In addition to  $H_2S$ , there are other foul odorous compounds that can be released from wastewater, such as ammonia, amines, diamines, mercaptans, skatole, and organic sulfides.

Treatment of foul odors can be approached in two ways: preventing odors through liquid treatment or controlling odors in the gas phase. While liquid treatment provides control of odors prior to their release, gas phase treatment involves the collection and treatment of gases once they have been released from wastewater. Treatment methods can be aimed at one type of odor, or can treat a range of odors.

#### 4.1.5.1 Granular Activated Carbon

A granular activated carbon (GAC) scrubber is recommended for the Pahala WWTP headworks. A GAC scrubber passes odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon.

Chemical oxidation or reduction of some compounds can also occur. As pore spaces become occupied, efficiency degrades, and the carbon must be replaced or regenerated. Carbon is most effective on higher molecular weight molecules such as the organic sulfur compounds, which makes it the technology of choice. Package GAC scrubbers are available for small headworks and vessels can be situated vertically, horizontally, or radially to optimize footprints and reduce structure elevation profiles. Figure 4-3 illustrates the process. The County currently operates GAC scrubbers at other facilities, and purchases the GAC media in bulk to reduce costs.

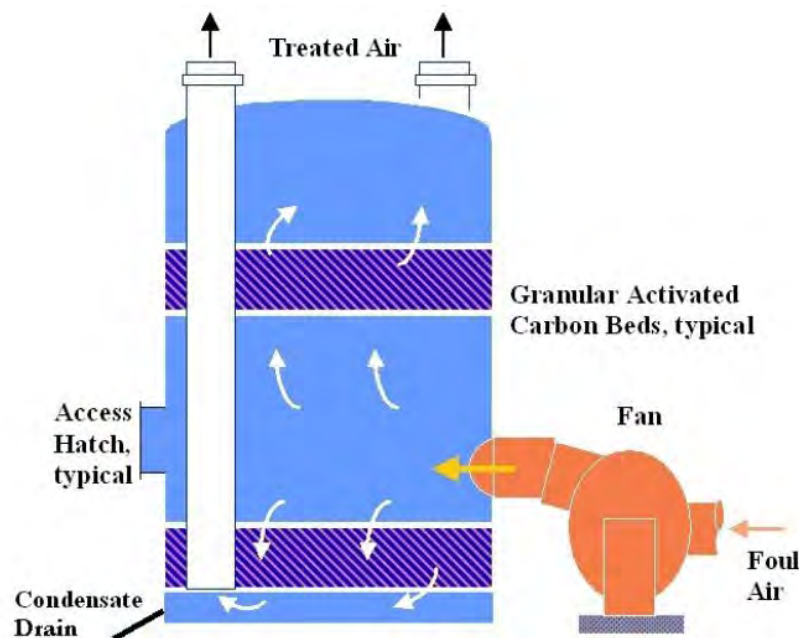


Figure 4-3. Activated Carbon Scrubber (GAC)

## 4.2 Aerated Lagoon Treatment System

The biological wastewater treatment needs at the Pahala WWTP will be met by a series of aerated lagoons. A floating cover will be installed on the last cell to reduce algae in the effluent. The preliminary design of the aerated lagoon treatment system is developed in this section.

### 4.2.1 Aerated Lagoon Kinetics

The Pahala WWTP design is reliant on partial mix aerated lagoon environments to provide the community's wastewater treatment needs for the initial buildout condition. Partial mix aerated lagoon kinetics are described below.

#### 4.2.1.1 Partial mix model

Partial mix aerated lagoons are based on the concept of allowing solids to settle in lagoons while providing only enough aeration and mixing to meet the oxygen requirements of the naturally occurring micro-organisms in the system. The solids tend to settle in areas of the lagoon that are subject to less mixing energy, where they anaerobically decompose. Infrequent sludge removal is required to maintain sufficient lagoon treatment volume.

Removal of BOD<sub>5</sub> in partial-mix aerated lagoons depends on the hydraulic detention time. The design model for partial mixed ponds of equal size in series is (Crites, et. al., 2006):

$$\frac{C_n}{C_o} = \frac{1}{[1 + (kt/n)]^n}$$

Where  $C_n$  = effluent BOD<sub>5</sub> concentration in cell  $n$ , mg/L

$C_o$  = influent BOD<sub>5</sub> concentration, mg/L

$k$  = partial-mix first-order reaction rate constant, day<sup>-1</sup>

$t$  = total hydraulic residence time in the lagoon system, day

$n$  = number of cells in the series

If the lagoons in a system are of unequal size, then the equation must be applied to each lagoon in the series. The Ten-States Standards recommends using a value of 0.276 day<sup>-1</sup> at 20 °C for the reaction rate constant (Great Lakes – Upper Mississippi River Board, 1997).

#### 4.2.1.2 Mixing in Lagoon Systems

The energy required for mixing in aerated lagoon systems is generally provided by the aeration system. For partial mix systems the aeration system is sized to provide enough oxygen to maintain aerobic conditions and no more. For mechanical aeration systems energy input of at least 30 horsepower per million gallons (hp/Mgal) of lagoon volume is required to keep solids in suspension (Rich, 1999).

### 4.2.2 Aeration in Lagoon Systems

Oxygen requirements in aerated lagoon systems are based on the organic loading entering the cell. Supplying oxygen at a rate of 1.5 times the BOD<sub>5</sub> mass entering the cell has been found to be sufficient to treat the wastewater. The following equation is used to estimate the oxygen transfer rate (Crites, et. al., 2006):

$$N = \frac{N_a}{\alpha \left[ \frac{(C_{sw} - C_L)}{C_s} \right] (1.025)^{(T_w - 20)}}$$

Where  $N$  = Equivalent oxygen transfer to tap water at standard conditions (lbs/hr)

$N_a$  = Oxygen required to treat the wastewater (lbs/hr)

$\alpha$  = (oxygen transfer in wastewater)/(oxygen transfer in tap water)

$C_{sw} = \beta(C_{ss})P$  = oxygen saturation value of the waste, mg/L

$\beta$  = wastewater saturation value/tap water oxygen saturation value = 0.9

$C_{ss}$  = tap water oxygen saturation value at temperature  $T_w$

$P$  = ratio of barometric pressure at the site to barometric pressure at sea level

$C_L$  = minimum dissolved oxygen concentration to be maintained

$C_s$  = oxygen saturation value of tap water at 20°C and 1 atm pressure

$T_w$  = wastewater temperature, °C

Oxygen can be supplied to aerated lagoon systems using mechanical aerators or diffused aeration systems. Mechanical aerators are commonly rated by the number of pounds of oxygen the units will supply under standard conditions per horsepower-hour (lbs. O<sub>2</sub>/hp-hr). Diffused air requirements are calculated using the following equation (Crites and Tchobanoglous, 1998):

$$Q_{air} = \frac{W_{oxygen}}{(AOTE)(O_2)(\gamma_{air})(1440)}$$

Where  $Q_{air}$  = Required air flow (ft<sup>3</sup>/min)

$W_{oxygen}$  = Oxygen requirements (lbs/day)

$AOTE$  = Actual oxygen transfer efficiency, expressed as a fraction

$O_2$  = Fractional percent of oxygen in air by weight (0.2315)

$\gamma_{air}$  = Specific weight of air (0.075 lbs/ft<sup>3</sup> at 1 atmosphere and 20°C)

The oxygen transfer efficiency of a diffused air system is a function of the air bubble size and the depth of the water column. Smaller air bubbles result in higher oxygen transfer efficiencies than larger bubbles, as do diffusers that are set at deeper depths within the water column.

#### 4.2.2.1 High speed floating aerators

High-speed floating aerators are commonly used for aerated lagoon systems. The units consist of a motor and impeller attached to a float. The units are typically anchored to the lagoon shore using cables. High-speed floating aerators are designed to pump water from the lagoon and spray it into the air, allowing oxygen to diffuse into the water droplets. The high-speed floating aerators can be

outfitted with draft tubes to enhance deep water lagoon mixing or anti-erosion plates to ensure water is drawn from the surface. Figure 4-4 shows a typical high-speed floating aerator.



**Figure 4-4. High Speed Floating Aerator**

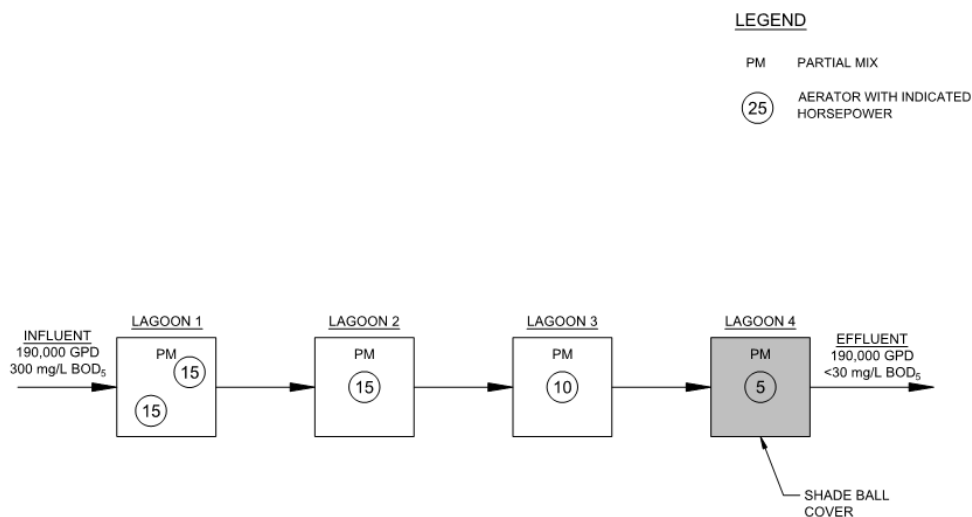
Advantages of this system include low capital costs, relatively high oxygen transfer efficiency, good mixing efficiency, and simple operation and maintenance. The chief disadvantage of the system is the creation of aerosols as the lagoon water is sprayed into the air.

Manufacturers of this type of aerator include Aqua-Aerobics, Aerator Products and Europlec/Aeromix Systems Inc.

High-speed floating aerators are recommended for the Pahala WWTP due to their relatively high oxygen transfer efficiency, low capital cost, and simple operation and maintenance. High-speed floating aerators are easy to remove from service, and can be easily moved between lagoons or cells, if needed.

### 4.2.3 Aerated Lagoon Configuration

The normal operating condition for the Pahala WWTP will be to operate the four lagoon cells in series as partial mix environments. Figure 4-5 is a schematic representation of the normal operating mode. The fourth cell will be outfitted with a floating cover to preclude algae growth. Having four lagoons will allow the County to take a lagoon out of service for maintenance.



**Figure 4-5. Normal Lagoon Configuration Schematic**

Table 4-1 summarizes the results of the aeration and mixing calculations for the normal operational configuration treating the design average dry weather flow rate of 190,000 gallons per day. Comparison of the minimum aerator requirements shown in Table 4-1 with the proposed aerator layout shown in Figure 4-4 reveals that the aerator power supplied exceeds the minimum requirements. An aerator control system will be provided that will intermittently turn the aerators on and off in accordance with the operator settings to supply sufficient oxygen to the system.

Cell	Volume (gal)	Influent BOD <sub>5</sub> (mg/L)	Effluent BOD <sub>5</sub> (mg/L)	Minimum Aerator Requirement (hp)	Mixing Density (hp/Mgal)
1	80,000	300	139	27	34
2	80,000	139	64	13	16
3	80,000	64	30	6	7
4	80,000	30	<30	2	3

#### 4.2.4 Lagoon Liner

Lagoon liners are required to prevent wastewater seepage into the ground. The liner will be exposed to sunlight, so resistance to ultraviolet light (UV) degradation is a key factor in the selection of the liner material, as is the compatibility of the material with typical domestic wastewater characteristics and ease of liner maintenance. An 80-mil textured high density polyethylene (HDPE) geomembrane is recommended for this application.

Textured HDPE is known to have excellent UV resistance, good chemical resistance, and generally is not affected by fats, oils, and grease (FOG). Maintenance of HDPE requires a specialty contractor who can complete fusion weld repairs. Unlike smooth HDPE, textured HDPE presents minimal slipping hazard to operations personnel. Furthermore, the anticipated useful service of an HDPE liner in typical Hawaii municipal wastewater treatment conditions is 25 to 30 years.

*Alternatively, the lagoons may be constructed of concrete.*

### 4.2.5 Lagoon Cover

In the normal operating mode, the final cell in the lagoon series will be covered in order to deprive algae of sunlight. This will reduce the algae concentration, which can increase total suspended solids (TSS) levels in the system effluent. The cover should float on the surface of the water, be UV resistant, suitable for windy environments, and allow for rainwater to pass through the cover to prevent ponding. A floating shade ball cover is proposed for this installation.

Floating shade balls covers have been used for decades in the mining, water and wastewater treatment industries. Figure 4-6 shows the design elements of a typical shade ball, and Figure 4-7 shows how shade balls provide cover on a reservoir. In addition to reducing algae growth, shade ball covers deter waterfowl from storage ponds. The black, UV-stable HDPE resin has known to withstand a range of challenging chemical and environmental conditions. Table 4-2 summarizes technical data for the balls.

<b>Table 4-2. Lagoon Shade Ball Cover Application Parameters</b>	
<b>Requirement</b>	<b>Description</b>
Algae Control	Balls – 90% shade coverage
Temperature	50°C to 95°C
Wind Resistance	Balls ballasted with potable water tested in winds of 120 mph (category 3 hurricane)
Waterfowl Safety	Waterfowl do not recognize ball-covered pond as a water body and will not nest on the unstable surface
Lifecycle/Warranty	The shade balls are warranted for 10 years, with an expected resin life of 25+years
Operations and Maintenance	Self-cleaning, self-levelling and require little to no maintenance Balls will move out of the way of maintenance barge, and can be restrained with booms Little installation effort required Precipitation does not affect the cover
Sustainability	Resin is recyclable, paraben free and suitable for drinking water applications Ballast is potable water Resin can be made from recycled plastic
Environment	Balls have been installed in chemically harsh environments (mining industry), in drinking water reservoirs, and in tropical locations Balls reduce algae formation and corresponding disinfectant byproducts in chlorination applications

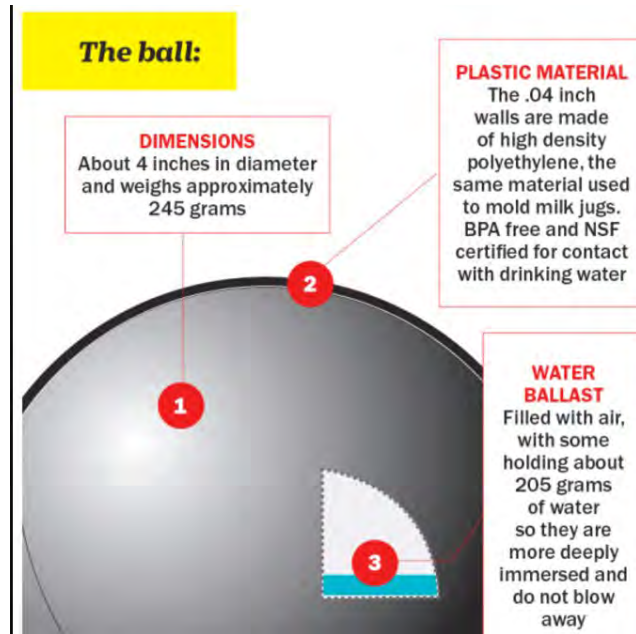


Figure 4-6. Floating HDPE Shade Balls



Figure 4-7. Floating shade balls with current and turbulence in reservoir.



### 4.2.6 Lagoon Sludge Management

Partial-mix aerated lagoons are designed to allow solids to settle to the bottom of the lagoon, forming a sludge layer. The sludge slowly anaerobically digests in the bottom of the lagoon. The mechanical aerators in the lagoon maintain an aerobic water cap at the surface of the lagoon that oxidizes any odors that are released from the anaerobic sludge layer at the bottom of the lagoon. Sludge is removed infrequently, typically every 15 to 30 years, when the sludge blanket thickness begins to affect treatment performance or in conjunction with lagoon liner replacement. Aerated lagoon operators typically monitor sludge blanket thicknesses semi-annually to assess sludge accumulation.

Sludge removal contractors are typically employed to dredge the solids, dewater, and haul to a landfill for disposal. Sludge from aerated lagoons is typically not offensive when dewatered due to the long residence time in the bottom of the lagoon.

Alternatively, the sludge can be recycled if a permitted land application site is available and the sludge meets State and Federal requirements for land application or composted with green waste at a permitted composting facility.

## 4.3 Subsurface Flow Constructed Wetland

A subsurface flow constructed wetland is recommended to provide additional treatment and polishing of the aerated lagoon effluent. It is anticipated that the aerated lagoon system will convert ammonia that is present in the wastewater influent into nitrate via a process called nitrification. A subsurface flow constructed wetland will remove this nitrogen from the wastewater via a process called denitrification. Reduction of nitrogen loading through the constructed wetland will decrease the area required for overland flow effluent management.

Subsurface flow wetlands consist of shallow lined basins that are filled with gravel media and planted with emergent wetland vegetation. Water is introduced to the gravel media layer and flows horizontally through the basin. The water level in the wetland is maintained below the gravel surface at all times. Treatment occurs through physical, chemical, and biological mechanisms as the water flows horizontally through the gravel media bed. Figure 4-8 is an illustration of the concept.

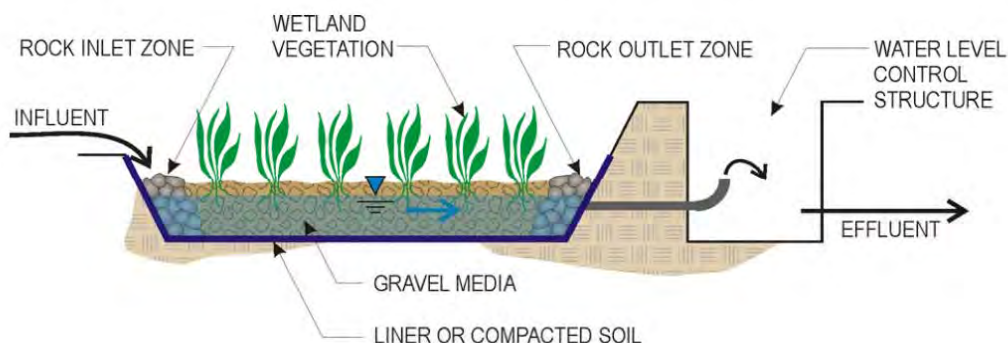


Figure 4-8. Subsurface Flow Constructed Wetland Concept

### 4.3.1 Denitrification in Subsurface Flow Constructed Wetlands

Denitrification is a biological process whereby nitrate molecules are transformed into nitrogen gas molecules by naturally-occurring bacteria. The denitrifying bacteria require five conditions for the process to occur:

- A place to grow.

- A source of nitrate.
- An anoxic (low-oxygen) environment.
- A source of carbon.
- Adequate water temperature.

The equation used to predict denitrification in subsurface flow constructed wetlands is shown below (Crites, et.al., 2014).

$$\frac{C_e}{C_o} = \exp(-K_T t)$$

where:

$C_e$  = effluent nitrate-nitrogen concentration (mg/L)

$C_o$  = influent nitrate-nitrogen concentration (mg/L)

$K_T$  = temperature-dependent rate constant =  $1.00(1.15)^{(T-20)}$  days<sup>-1</sup> when  $T > 1^\circ\text{C}$

$t$  = hydraulic residence time (days)

Subsurface flow constructed wetlands are capable of providing additional treatment benefits beyond nitrogen reduction, such as removal of organic carbon, suspended solids, phosphorus, metals, trace organics, and pathogens. The additional treatment benefits are not primary design parameters, but should be considered as additional polishing treatment benefits that may be realized for the Pahala WWTP.

## 4.4 Disinfection

Disinfection processes selectively kill pathogens or render them incapable of reproduction or harm to humans. Disinfection at WWTPs is employed for the purposes of protection of public health, reduction of organic matter, inorganics, nutrients, odor, aesthetics, and maintaining waste-assimilative capacity of receiving water bodies. The protection of public health through the control of disease-causing microorganisms is the primary reason for wastewater disinfection (WEF, 1996). As the last barrier of protection from pathogenic organisms, disinfection at WWTPs is an important process. To address disinfection, both a calcium hypochlorite system and a UV system were evaluated.

### 4.4.1 Calcium Hypochlorite

Calcium hypochlorite is the most common solid form of hypochlorite used for disinfection. It can be found as a powder, granules, pellets, or as tablets in concentrations up to 70 percent. Calcium hypochlorite will degrade in strength at a rate of 3 to 5 percent per year. Once applied to the wastewater, the chemistry is similar to that for sodium hypochlorite. Calcium hypochlorite decomposes in an exothermic reaction if exposed to moisture.

The solid can be directly applied to wastewater at very small WWTPs. Figure 4-9 shows a typical calcium hypochlorite feed system.

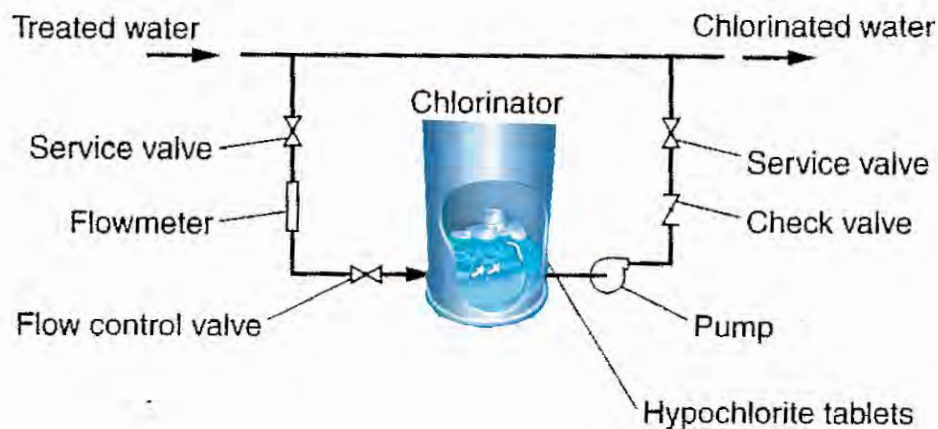


Figure 4-9. Typical Calcium Hypochlorite Feed System

The advantages of using calcium hypochlorite for disinfection at small, remote WWTPs is that it is available in concentrated form as powder, pellets, or tablets. This makes the transportation and storage of disinfectant optimal for small WWTPs. Table 4-3 summarizes calcium hypochlorite characteristics.

Table 4-3. Calcium Hypochlorite Summary	
Description	Characteristic
Transported form	Solid
Typical transported concentration	70%
Largest transported volume available	55 lb. pails
Decay Rate	Decays 3-5% per year
pH	N/A
Hazards	Toxic if ingested (usually through dust or liquid form)
Storage constraints	Must be stored in a cool, dry, dark place
Special equipment	Tablet feeder
Particular issues	Heats and combusts if not stored properly Scaling in pipes, Off gassing

#### 4.4.1.1 Dose and Contact Time

The effectiveness of a chlorination system is highly dependent on the characteristics of the wastewater, the initial mixing and contact time, and the chlorine dose used. For nitrified effluent, the recommended dose is between 8 and 18 mg/L. The WWTP will discharge to a land application system during normal flow and wet weather periods when the secondary effluent will be diluted by precipitation falling onto the overland flow terraces. For planning purposes, a 10 mg/L dose was assumed to be sufficient for the WWTP for most circumstances, but equipment will be sized to

provide chemical feed at a rate of up to 100 lbs./day, which will ensure an adequate chlorine dose for peak wet weather discharge flows.

Table 4-4 lists the chlorine demand for various flow conditions.

<b>Table 4-4. Chlorine Demand</b>		
<b>Description</b>	<b>Flow</b>	<b>Chlorine Demand</b>
Average dry weather flow	0.19 mgd	16 lbs./day
Peak day wet weather flow	0.662 mgd	55 lbs./day

The recommended minimum contact time for chlorination is 15 minutes (Ten States Standards Wastewater, Recommended Standards for Wastewater Facilities, 1997, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers). The size of the chlorine contact tank will need to accommodate a 15-minute contact time for the peak discharge rate. For this application, the peak discharge rate will be equal to the peak day wet weather flow, due to the flow equalization provided by the aerated lagoons. Table 4-5 summarizes the contact tank dimensions, while Figure 4-10 shows a conceptual contact tank configuration.

<b>Table 4-5. Chlorine Contact Tank</b>	
<b>Description</b>	<b>Value</b>
Peak discharge rate	460 gpm
Minimum chlorine contact tank	15 minutes
Tank volume required	920 cubic feet
Channel water depth	5 feet
Channel width	3 feet
Tank channel total length	61 feet
Tank dimensions including channel walls	13 feet x 24 feet

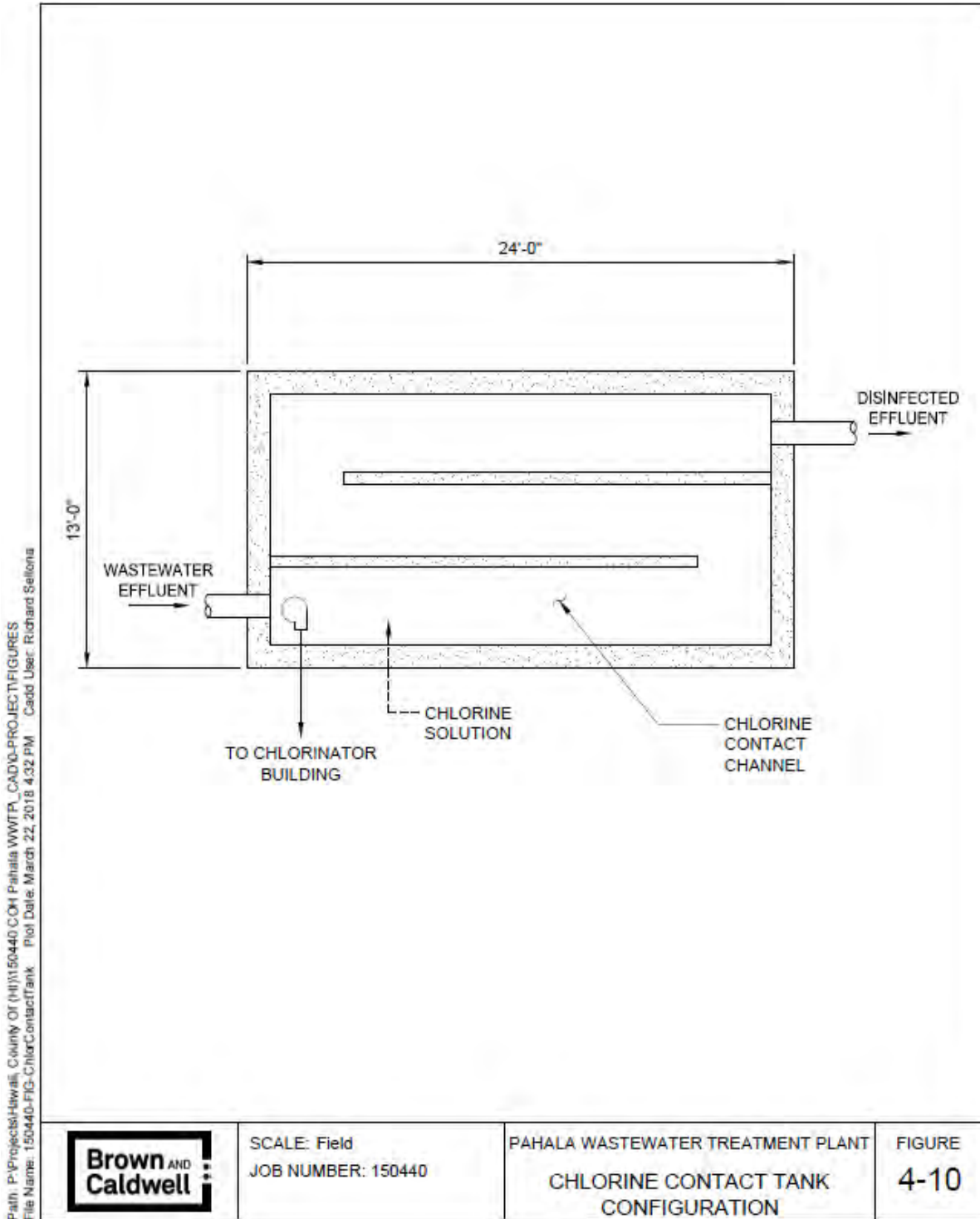


Figure 4-10. Chlorine Contact Tank Configuration

#### 4.4.2 Ultraviolet Light (UV) Disinfection

A common alternative to a chlorine disinfection is ultraviolet light (UV). Ultraviolet systems destroy microorganisms by affecting their deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) and impeding their ability to reproduce. A UV disinfection system is comprised of lamps, a reactor, and control panel. Wastewater can flow either parallel or perpendicular to the lamps in the reactor, while the control box provides a starting voltage and maintains the continuous current needed. Currently, most systems are equipped with an automated lamp cleaning system, to maintain lamp efficiency levels.

A UV system's effectiveness is dependent on the characteristics of the wastewater, the dose, and the exposure time. In the case of UV radiation, the most important factor is the transmittance of the water, which has a direct effect on the ability of UV light to penetrate through the liquid and reach microorganisms present at the required intensity. Ideally, the discharge undergoing treatment should not have a transmittance lower than 55 percent, with the intensity decreasing the farther the microorganisms are from the lamp. The optimum wavelength to effectively inactivate microorganisms is between 250 and 270 nanometer.

The main types of UV lamps used for wastewater disinfection are conventional low-pressure lamps, low pressure high output (LPHO) lamps and medium pressure lamps. Several UV systems include lamps with automated sleeve cleaning.

#### 4.4.3 UV System Design Summary

A UV disinfection system requires a about the same size footprint as chlorine. Disinfection occurs as the organism is exposed to the UV radiation as the water flows past the UV lightbulbs. The Trojan UV3000+ system is used at numerous facilities across the US, including some treatment plants in Hawaii. The estimated cost included in this report are based on an assumed UV transmittance of 65 percent. The amalgam lamp used with the UV3000+ system has an end-of-lamp-life factor (ELLF) of 0.98 indicating little loss in UV light output over the life of the lamp. This ELLF has been tested and approved by the State of California and is also accepted by the State of Hawaii for reuse applications. The system would use LPHO lamps with automatic sleeve cleaning. LPHO lamps are energy efficient and the UV300+ system is furnished with automatic sleeve cleaning devices to reduce labor requirements. Each UV lamp is enclosed in a quartz sleeve to separate it from the water medium. Each lamp draws 254 watts at full output and is driven by electronic ballast. The electronic ballast allows the lamps to be dimmed to conserve power based on a control signal from a flow meter. The LPHO lamps will have a minimum life of 12,000 hours when operated in an automatic mode and limited to a maximum of 4 on/off cycles per 24 hours. Table 4-6 summarizes the size and design criteria for the UV system required to treat the WWTP discharge.

<b>Table 4-6. UV Disinfection Design Summary</b>	
<b>Description</b>	<b>Value</b>
Peak Hour Wet Weather Discharge	630 gpm
Minimum UV transmittance	65 percent
No. of UV channels	1
Design dose	35,000 $\mu$ Ws/cm <sup>2</sup>
Disinfection limit	30 e-coli per 100mL
Validation factors	0.98 end of lamp factor

#### 4.4.4 Cost Evaluation

A summary of capital and life-cycle estimated costs for both chlorination and UV disinfection is presented in Table 4-7 for comparison.

The capital costs include the materials and equipment costs, construction costs, electrical, instrumentation and control, soft costs, and contingency. As shown in the table, the UV option incurs higher capital costs. The life cycle costs look at the impact of the capital costs along with the annual operations and maintenance costs, including power, materials, chemicals, and labor costs over the next 30 years. The life-cycle costs for chlorination option appear to be about 78 percent of the UV option.

Table 4-7. Estimated Disinfection Costs		
Description	Chlorination	UV System
Capital Cost	\$200,000	\$800,000
Annual Operations and Maintenance	\$15,000	\$6,000
Life-cycle Cost (30-Year Net Present Value)	\$746,000	\$947,000

##### 4.4.4.1 Non-Economic Evaluation

Table 4-8 presents a summary of advantages and disadvantages of using an ultraviolet light for disinfection.

Table 4-8. Ultraviolet Disinfection – Advantages and Disadvantages	
Advantages	Disadvantages
Effective at inactivating most viruses, spores, and cysts	Low dosage may not be effective on some pathogens and some organisms can repair and reverse the destructive effects of UV
It's a physical process, instead of chemical – it eliminated the need to transport, handle, store toxic or corrosive chemicals	Turbidity and TSS in the wastewater can reduce UV disinfection effectiveness
No harmful residual compounds created that are toxic to humans or aquatic life	Will likely require more call-outs by operators due to alarms caused by “dirty power”.
Shorter contact time (less than a minute)	The relative intensity of equipment maintenance requirements, including staffing training and on-island availability.

#### 4.4.5 Disinfection Recommendation

A tablet chlorination system is the recommended disinfection option over the UV system for the WWTP because it incurs lower capital and lifecycle costs. In addition, tablet chlorination will be more reliable than UV due to frequent “dirty power” conditions on the island. The County has elected to install a UV system at the Pahala WWTP, to reduce the use of chemicals at the facility. An uninterrupted power supply may be installed to address “dirty power” concerns.

## 4.5 Effluent Management

For effluent management, a slow-rate land application system is proposed. The concept is to intermittently apply wastewater to crops growing in permeable soils. As the applied water percolates through the soil matrix or is taken up by the crop, it is treated by physical filtration and by biological mechanisms. After an application period or wetting period, the surface can dry and oxygen can enter the soil matrix, which aids aerobic biological treatment. The frequent wetting and drying also maintains the infiltration rate through the soil surface and minimizes soil clogging. This method of land application is an effective treatment process for BOD<sub>5</sub>, TSS, trace organics, phosphorus, metals and pathogen removal. Furthermore, removal of nitrogen can be significant when system is managed for that objective.

### 4.5.1 Design

The slow-rate system site consists of a net area of approximately 5.5 acres. The 5.5 acres will be divided into 4 small groves of native trees, so that water application will be rotated to a different grove each day. ~~An additional small grove will be utilized as an emergency (overflow) or reserve when surface or distribution system maintenance is conducted.~~ By using one grove per day the wet/dry cycle will be 1-day wetting and 3-days drying.

The groves will be planted with native Hawaiian trees. Trees grown within the land application area will need to be water tolerant. Table 4-9 lists potential native tree species.

**Table 4-9. Potential Land Application System Tree Species**

Common Name	Genus Species	Salt Tolerance	Water Requirements	Rubbish and Maintenance	Preferred Elevation
Milo	<i>Thespesia populnea</i>	Very	Dry to Wet	Moderate	Low to Medium
Loulu	<i>Pritchardia hillebrandii</i>	Very	Dry to Wet	Low	Low
Aalii	<i>Dodonaea viscosa</i>	Very	Dry to Medium	Low	Low to High
Kou	<i>Cordia subcordata</i>	Very	Dry to Wet	Moderate	Low
Golden Loulu	<i>Pritchardia arecina</i>	Moderate	Dry to Wet	Low	Low to Medium
Wiliwili	<i>Erythrina sandwicensis</i>	Moderate	Dry to Medium	Moderate	Low

The distribution system will consist of gated piping located on the surface. The piping will have slots to allow the applied wastewater to uniformly be distributed over the grove surface. A perimeter fence will be installed to limit access. Access roads will surround each grove. Figure 4-11 reflects the proposed land application schematic.



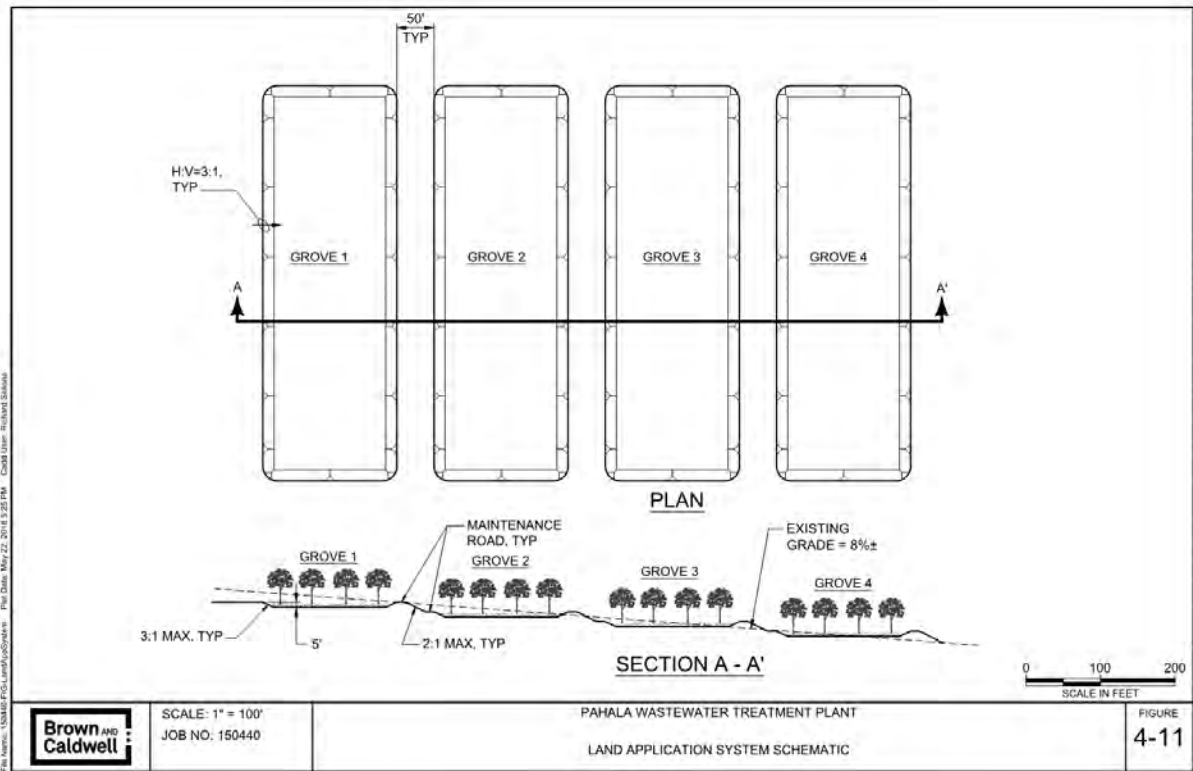


Figure 4-11. Land Application System Schematic

## 4.6 Ancillary Systems

### 4.6.1 Water

Potable water is not currently available at the site. The nearest potable water system is located uphill in town. Table 4-10 provides an initial assessment of the potential water demands at the WWTP. The water demands are either for process or potable uses. As shown in the table, the process water demands are significantly greater than the potable demands.

Description	Flow Rate	Type	Priority
Screenings washer	20 gpm for 10 min/hour 4,800 gpd	Process	Mandatory with screen
Hose bibs	10 gpm for 20 min/day 200 gpd	Process	Desirable to maintain facility
Emergency eye wash / shower	20 gal per use	Potable	Mandatory
Restroom	20 gpd	Potable	Recommended

To supply water to the WWTP, it is recommended to construct approximately 2,000 linear feet of pipe from the intersection of Huapala Street and Maile Street to the site and install a 1-inch water meter with 1 ½-inch backflow preventer.

A plant water system will be supplied by the County water meter. The on-site water system will be split into two branches, one for process water and one for potable water. The potable water will service the restroom and emergency eye wash/shower. A second backflow preventer will separate the process water uses from the potable connections.

### 4.6.2 Access Road

All weather access will be required to operate and maintain the WWTP. Access to the site will be provided by connection to Maile Street. A paved driveway apron is proposed at Maile Street and an all-weather driveway will extend into the site and provide access to and around the various WWTP infrastructure. Additionally, a turn-around area large enough to accommodate a fire truck will be provided.

Access road pavement options include aggregate base (AB) gravel, asphalt concrete (AC), or concrete. AB is the lowest cost option, but requires the most maintenance. AC pavement is not recommended for steep (greater than 12 percent) grades. Concrete is the highest cost option, but is the most durable and requires the least maintenance.

The recommended driveway pavement section is 2-inches of AC over 6-inches of aggregate base course. For portions of the driveway that exceed 12 percent slope, a concrete pavement section is recommended.

### 4.6.3 Stormwater Management

The overall goal of stormwater management is to mitigate the adverse impact of new construction on the environment. Stormwater management can generally be separated into two areas:

1. Stormwater Quantity: management of the quantity to prevent increased flows and volumes leaving the site on the downstream watercourses.
2. Stormwater Quality: management of the quality of stormwater runoff to prevent contaminants such as silt, trash, hydrocarbons, heavy metals, and pesticides from leaving the site through stormwater runoff.

### 4.6.4 Pre-development Stormwater Conditions

#### 4.6.4.1 On-site

The majority of the proposed 42.5-acre site is currently utilized as macadamia nut orchards, consisting of trees or unimproved agricultural roads. The parcel is bound on two sides by improved county and state right-of-way and to the east by additional macadamia nut orchards.

The existing elevations range between 580 to 780 feet above mean sea level (MSL) and slopes in the southerly direction at an average rate of 8 percent. The soils in this area are described as Naalehu medial silty clay loam (NaC) by the Soils Conservation Service (SCS). These soils are considered well drained with low runoff and slight erosion hazard.

On-site stormwater run-off generally sheet flows in a southerly direction to off-site swales along the roadway frontages, Maile Street and Hawaiian Belt Road (also known as Mamalahoa Highway). There is no known on-site drainage collection system, see Figure 4-12.

#### 4.6.4.2 Off-site

Swales that run and collect along the roadway frontages of the property are conveyed through a box culvert at the intersection of Maile Street and Hawaiian Belt Road and discharged makai. Similarly, running along the north property line is an abandoned concrete flume, which was previously utilized to discharge process water from the adjacent old sugar mill to agricultural land makai of Hawaiian Belt Road. Figure 4-12 conceptualizes the existing drainage system.

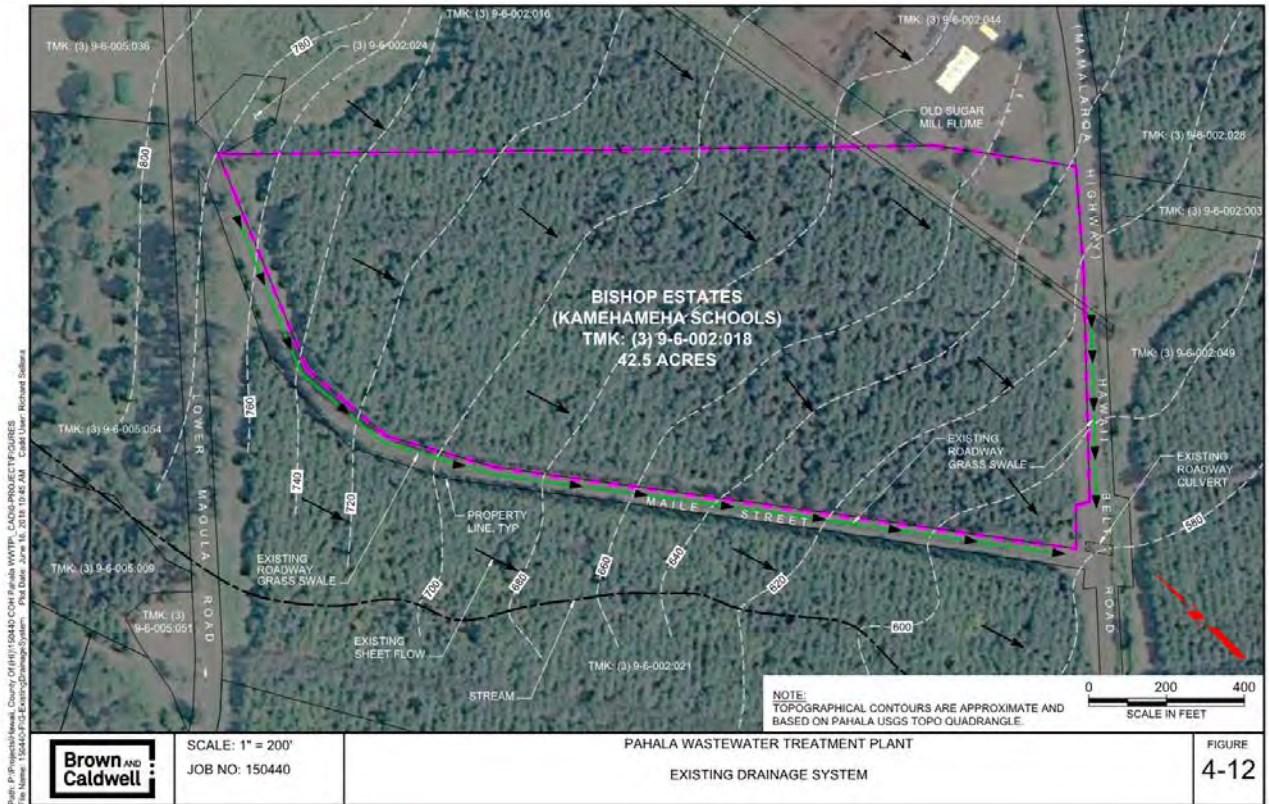


Figure 4-12. Existing Drainage System

#### 4.6.4.3 Flood Hazards

The subject property flood zone is designated Zone X, area of minimal flood hazard corresponding to areas outside of the five-hundred-year flood plain, as indicated on the current September 29, 2017 Flood Insurance Rate Map (FIRM), Community Panel No. 1551661800F. Zone X designations are not subject to the requirements of the Standards of Floodways, Chapter 27, Section 22 of the Hawaii County Code. See Figure 4-13 for the Flood Insurance Rate Map.

*On April 16, 2018, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as Zone X on the FIRM and is outside the 500-year floodplain.*

*The WWTP site slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of the site and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.*

*Based on the roadway flooding concerns expressed by the community during the Pāhala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during storm events.*

*Stormwater drainage flows generated from the existing orchard mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the WWTP facilities will not be located within the area of the culvert.*

*The on-site stormwater management system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins. Landscape buffers with dirt berms would also be constructed around most of the perimeter of the facility to act as secondary containment in the event of a large storm event. The on-site stormwater management system would meet the requirements of Hawai'i County Code, Chapter 27, Section 20, which mandates drainage plans to accommodate runoff caused by the facility for a 1-hour, 10-year storm event.*

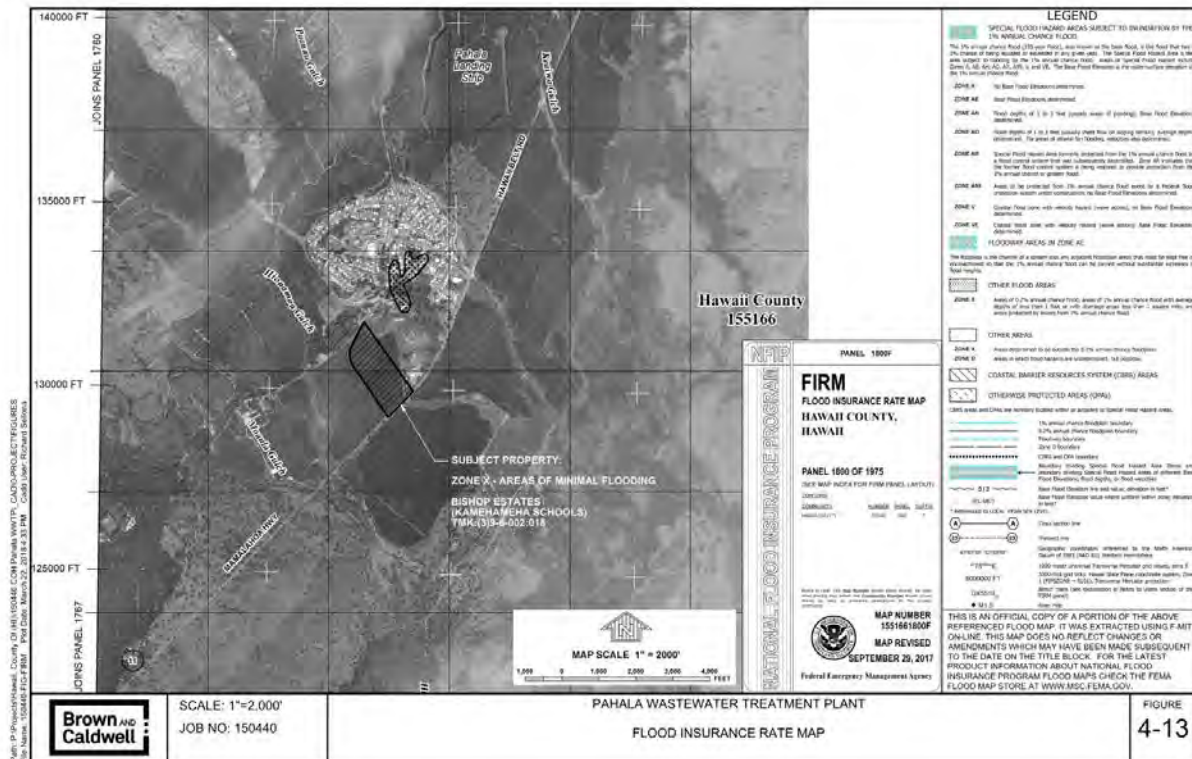


Figure 4-13. Flood Insurance Rate Map



#### 4.6.4.4 Stormwater Quantity

The increase in peak flow and runoff volume is a function of the increase in impervious areas associated with the proposed improvements.

All exposed (not enclosed) treatment processes will be sized to include free-board depth to accommodate the 24-hour, 100-year storm event. Thus, no stormwater runoff from these areas is anticipated.

A drainage system will be designed to address stormwater surface run-off caused by impervious portions of the WWTP development. Per the Hawaii County Code, Chapter 27, Section 20, the site drainage plan shall accommodate the run-off caused by the proposed development, within the site boundaries, for a one-hour, ten-year storm event. The pre-development runoff (10-year, 1-hour storm) is approximately 23 cubic feet per second (cfs). The post-development runoff is approximated at 24.5 cfs, which is a net increase of 1.5 cfs.

To ensure that there is no adverse impact on adjacent or downstream properties due to post-development flows, an on-site drainage system will collect runoff via grated inlets or swales. These flows will be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins, to detain flows and volumes to their pre-development condition. Furthermore, landscape buffers with dirt berms will be constructed around most of the perimeter of the property acting as secondary containment in the event of a large storm event.

A complete analysis of the pre and post development drainage condition will be completed during the design phase. *The site drainage plan will be prepared to comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected one-hour, ten year storm event as shown in the department of public works "Storm Drainage Standards".* A geotechnical engineering assessment of berm stability will be conducted during the design process for any berms constructed to act as secondary containment in the event of a large storm event.

*To meet the requirements of HCC, Chapter 27, Section 20 (f), the project site "shall not alter the general drainage pattern above or below the development". Thus, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage study will be prepared during the design process to evaluate the improvements necessary to comply with HCC requirements.*

*The wastewater treatment processes will be designed to accommodate the peak flows during wet weather events, including precipitation that falls on the area occupied by the aerated lagoon treatment system. Section 2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The aerated lagoons will be lined with high density polyethylene liners or concrete to prevent water seepage through the bottom and sides of the lagoons. The aerated lagoons will be designed with operational freeboard that will be available to contain and to equalize lagoon flows during peak wet weather events. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. This will be accomplished by constructing berms around the land application tree groves. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.*

#### 4.6.4.5 Stormwater Quality

The quality of stormwater leaving the site is also a concern. Stormwater quality degrades with development and increased impervious surfaces, because various pollutants are introduced into the stormwater runoff.

The first half-inch of runoff during a storm is referred to as the Water Quality Volume (WQV) or the “first-flush” volume. This portion of the runoff from a storm contains measurably more suspended solids plus other contaminants per cubic foot than would be expected in runoff occurring later in the storm.

To mitigate the quality of runoff, the drainage system will incorporate permanent Best Management Practices (BMP's). Recommended permanent BMP include scheduled good-housekeeping, which will reduce litter and other constituents from being washed into the storm drain system, and detention basins and underground infiltration facilities that prevent the release of sediment and other pollutants to downstream waterways or adjacent properties. A full assessment of all available BMP's to optimize water quality will be provided during design of the project.

#### 4.6.5 Electrical Systems

It will be necessary to bring electrical power to the WWTP site. It is anticipated that Hawaii Electric Light Company (HELCO) will bring overhead power lines to the site and supply 480-volt, 3 phase power to the WWTP via a pole-mounted transformer to a service panel with a meter.

The floating surface aerators will consume the majority of the electricity supplied to the site. An electrical room will house the electrical gear, plant control equipment and the chlorination system. Exterior lighting at the site will be limited to manually switched lights at the entrance to the electrical building and at the headworks area.

A standby power system will be provided in the form of a ~~pad-mounted~~ diesel generator and above-ground fuel tank with capacity to support three consecutive days of operation. In addition, the electrical service panel will be equipped with a manual transfer switch and generator receptacle to allow connection of a trailer-mounted generator in the event of emergency generator failure during an extended power outage.

#### 4.6.6 Telemetry Systems

A land-line telephone telemetry system with auto-dialer will be provided to provide Hilo-based operation staff of alarm conditions and key operational parameters at the WWTP. Additionally, a cell phone will be available for backup.

#### 4.6.7 Operations Building

An operations building will be constructed to include the electrical room, ~~chlorinator~~ generator room, restroom, and maintenance/storage room, as shown in Figure 4-14.

#### 4.6.8 Site Fencing

The entire WWTP site, including the treatment systems and the land application system, will be fenced (6-foot high chain link) and posted to prevent public access.

#### 4.6.9 Alternative Energy

*The WWTP does not include utilizing alternative energy systems such as photovoltaic solar as a total replacement for connecting to the HELCO grid due to:*



- *the need for consistent power supply;*
- *emergency backup power requirements;*
- *up front capital cost;*
- *full utilization of the 14.9-acre proposed site for the treatment and disposal facility;*
- *objective to minimize the amount of land area removed from agricultural production; and*
- *EPA-enforced project implementation schedule deadlines.*

*Partial augmentation of traditional power utilizing photovoltaic solar panel arrays on the headworks and operations building rooftops will be further analyzed during the detailed design phase after loads, demand patterns, and roof orientation are better understood. Additional alternative energy systems can be added in the future if prioritized and funded by County Council, and the electrical systems will be designed to accept additional alternative energy input. The capital cost for rooftop photovoltaic solar is estimated to be approximately \$13,000 per kW of peak capacity.*

*Methane gas is generated at wastewater treatment plants using a process called anaerobic digestion. The proposed WWTP is too small for anaerobic digestion to be economical; the design flow to the Pahala WWTP is 190,000 gallons per day, and anaerobic digestion is only economically attractive for WWTPs that treat at least 5 to 10 million gallons per day. In addition, the anaerobic digestion process requires primary clarifiers as part of the liquid treatment process, but primary clarifiers tend to be odorous in tropical climates, due to the relatively high wastewater temperatures. The proposed alternative relies on natural treatment systems that require relatively low energy input.*

*Small-scale wind generation systems require a high level of maintenance attention due to the mechanical systems required to convert wind energy into electricity, and is not appropriate for a small, remote wastewater treatment facility.*

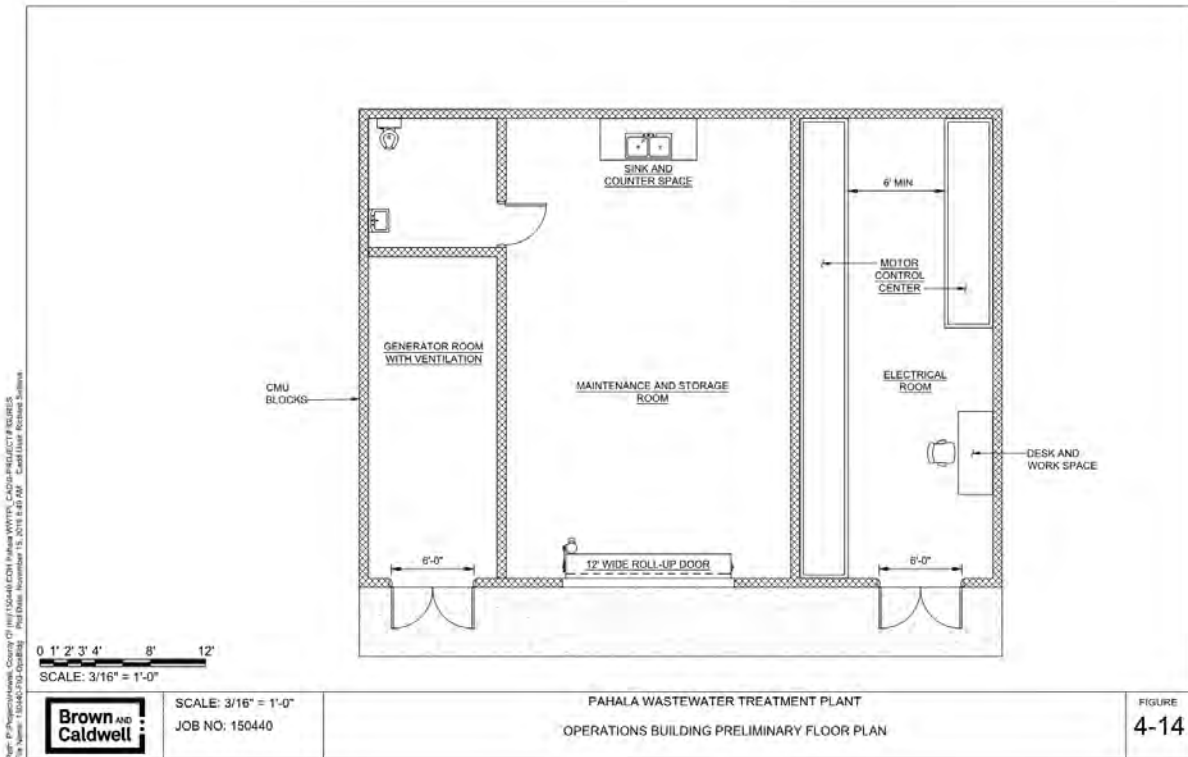


Figure 4-14. Operations Building Preliminary Floor Plan

## Section 5

# Preliminary Design of Improvements

The following is a summary of the preliminary design for the proposed Pahala WWTP.

### 5.1 Site Plan

The existing parcel is an active macadamia nut tree orchard. The prevailing grade is in the north to south direction at 5 to 10 percent slope. Approximately 14.9 acres of the land will be cleared for the construction of the proposed facility. Figure 5-1 presents a preliminary site plan for the WWTP.

### 5.2 Process Schematic

Figure 5-2 presents the recommended facilities process schematic.

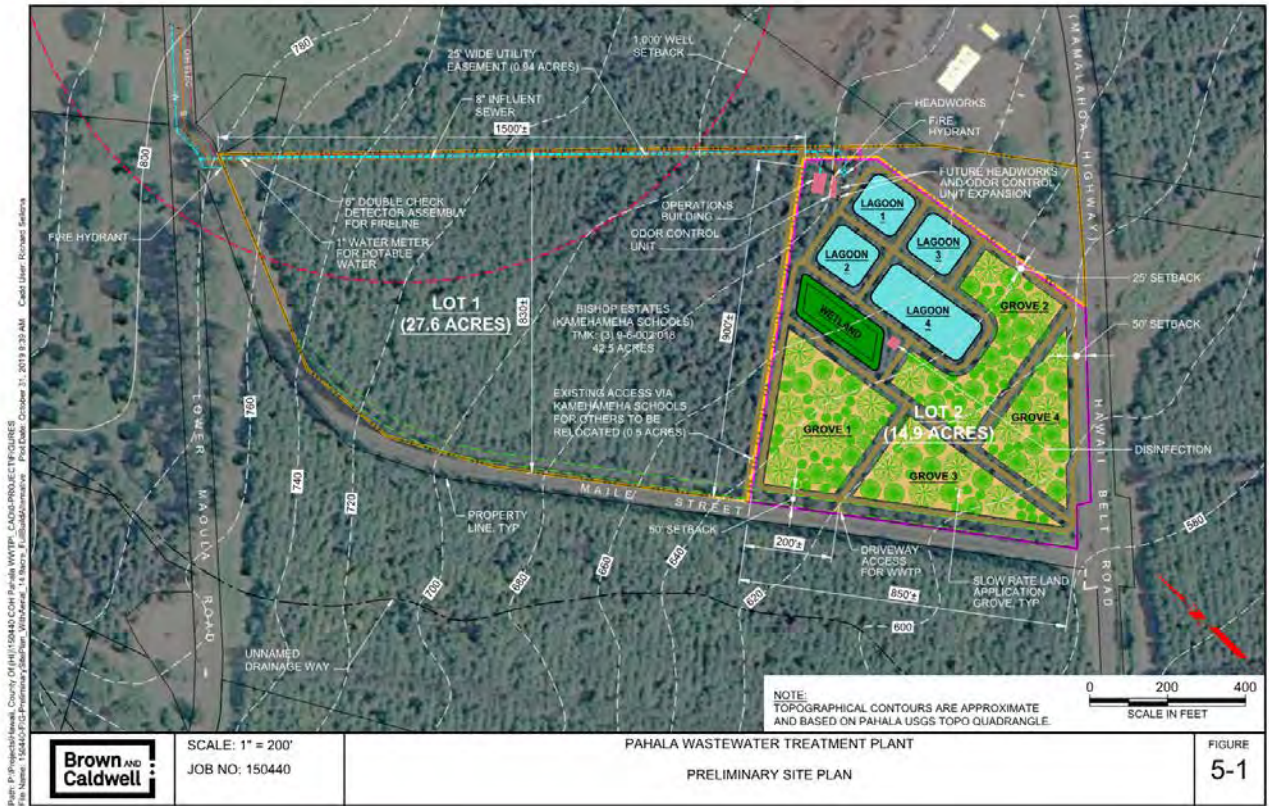


Figure 5-1. Preliminary Site Plan

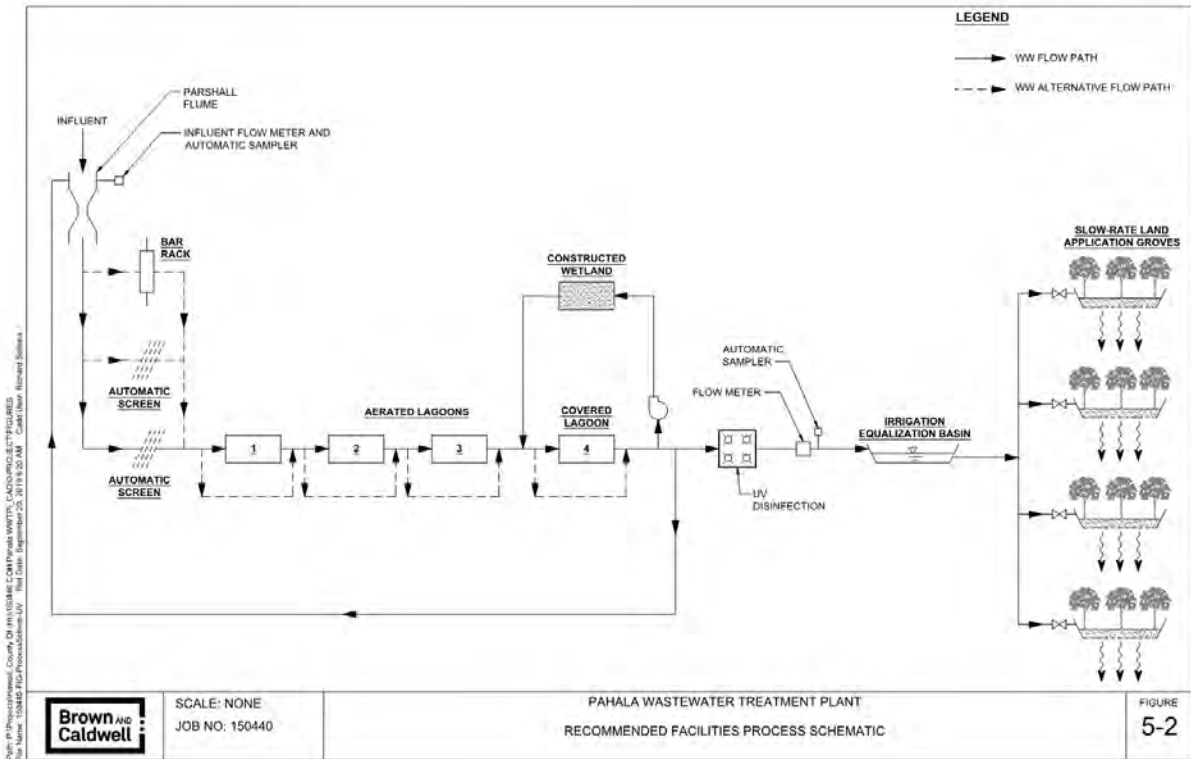


Figure 5-2. Recommended Facility Process Schematic

## 5.3 Design Criteria

Table 5-1 provides preliminary design criteria.

Table 5-1. Preliminary Design Criteria	
Description	Value
<b>Influent flows:</b>	
• Average dry weather	190,000 gpd
• Peak day wet weather	662,000 gpd
• Peak hour wet weather	630 gpm
<b>Influent characteristics</b>	
• BOD <sub>5</sub>	300 mg/L
• TSS	300 mg/L
<b>Odor control – granular activated carbon</b>	
• Airflow rate	500 cfm
• H <sub>2</sub> S Inlet concentration	1-10 ppm
• H <sub>2</sub> S removal efficiency	99%
• Media type	High-capacity carbon
• Vessel diameter	3 feet
• Vessel height	6 feet
• Minimum carbon quantity	570 lbs
• Minimum bed depth	3 feet
• Fan motor	2 hp
• Nominal inlet size	8 inches
<b>Mechanical screens</b>	
• Number of units	2
• Type	In-channel cylindrical
• Screen opening size	0.25 inch (6 mm)
• Maximum flow rate capacity	Greater than 625 gpm each
• Screening washing	Integral
• Screening compaction	Integral
• Screening wash water flow	20 gpm
• Screening wash water pressure	50 psi
<b>Bypass screen</b>	
• Type	Manually-cleaned bar rack
• Bar spacing	1 inch
• Rake	Interlocking with bars
<b>Screenings receptacle</b>	

Table 5-1. Preliminary Design Criteria continued	
• Type	55-gallon drum or bags
• Screenings volume per million gallons treated	5 ft <sup>3</sup> /Mgal
• Estimated screenings quantity	1 ft <sup>3</sup> /day
• Disposal frequency	1/week
Influent flow metering	
• Type	Parshall flume
• Maximum flow capacity	Greater than 630 gpm
• Minimum straight upstream channel section	20 times the throat width
Influent flow sampling	
Refrigerated automatic composite sampler	
Lagoon cells	
• Number of cells	4
• Maximum lagoon temperature	25°C
• Minimum lagoon temperature	20°C
• Freeboard	3 feet
• Working water depth	15 feet
• Allowance for sludge	3 feet
• Total water depth	18 feet
• Side slope	3(H) : 1(V)
• Working volume of lagoon 1 to 3	0.80 Mgal
• Working volume of lagoon 4	1.60 Mgal
Aerators	
• Type	Floating mechanical surface aerators
• Cell 1 aerators	30 hp (2 at 15 hp)
• Cell 2 aerator	15 hp
• Cell 3 aerator	10 hp
• Cell 4 aerator	5 hp aspirator style, floating ball cover for algae control
Constructed Wetland	
• Water temperature	25 degrees C
• Aerated lagoon effluent nitrate-N concentration	19 mg/l
• Aerated lagoon effluent ammonia-N concentration	1 mg/l
• Constructed wetland effluent total N concentration	15.3 mg/l
• Total constructed wetland surface area	0.25 acres
• Flow path length	50 feet
• Hydraulic application width	200 feet
• Media depth	24 inches
• Media type	Medium gravel, D <sub>10</sub> = ¾ inch

Table 5-1. Preliminary Design Criteria continued	
• Media porosity	38 percent
• Percolation prevention system	60 mil high density polyethylene (HDPE) liner
• Vegetation	Native Hawaiian reeds and/or rushes, species to be determined
Disinfection system	
• Type	UV
• Form	Calcium hypochlorite tablets
• Design chlorine dose	10 mg/L
• Chlorine contact time	15 minutes minimum
Effluent flow metering	
• Type	Magnetic
Effluent sampler	
• Type	Refrigerated automatic composite
Effluent quality	
• BOD <sub>5</sub>	Less than 30 mg/L monthly average Less than 60 mg/L peak
• TSS	Less than 30 mg/L monthly average Less than 60 mg/L peak
Effluent management system	
• Type	Slow-rate land application groves
• Number	4
• Minimum depth	5 feet
• Design percolation rate	0.0095 inches per minute
• Design application rate	8 percent of percolation rate
• Distribution system	Gated pipe
• Stormwater containment	100-year, 24-hour storm event
• Vegetation	Native Hawaiian trees
Stormwater site management	10-year, 1-hour storm

## 5.4 Environmental Benefits

A well-designed and managed land treatment system limits wastewater application to rates to minimize adverse impact to groundwater quality. The deep percolate from the SR land treatment system is expected to contain less than 1 mg/L of BOD<sub>5</sub> and TSS. While the State of Hawaii has not adopted formal groundwater quality standards, the drinking water standard for nitrate (10 mg/L as N) in the annual average deep percolate below the land treatment system was used as a performance target to design the land treatment site. Phosphorus adsorption is excellent in SR land treatment systems, and 99 percent or greater phosphorus removal is anticipated. Table 5-2 compares the current loads to the environment via the LCCs and the loads to the environment after the proposed project is implemented via the deep percolate from the land treatment system. Figure



5-3 provides a graphical representation of the environmental benefits of the proposed project compared to the status quo.

Table 5-2. Environmental Benefits of Proposed Project			
Parameter	Current Annual Load to Environment via LCCs	Annual Load to Environment via Proposed Land Treatment System Deep Percolate	Reduction
BOD <sub>5</sub>	174,000 lbs./year	600 lbs./year	>99%
TSS	174,000 lbs./year	600 lbs./year	>99%
Nitrogen	23,000 lbs./year	4,100 lbs./year	83%
Phosphorus	4,000 lbs./year	40 lbs./year	>99%

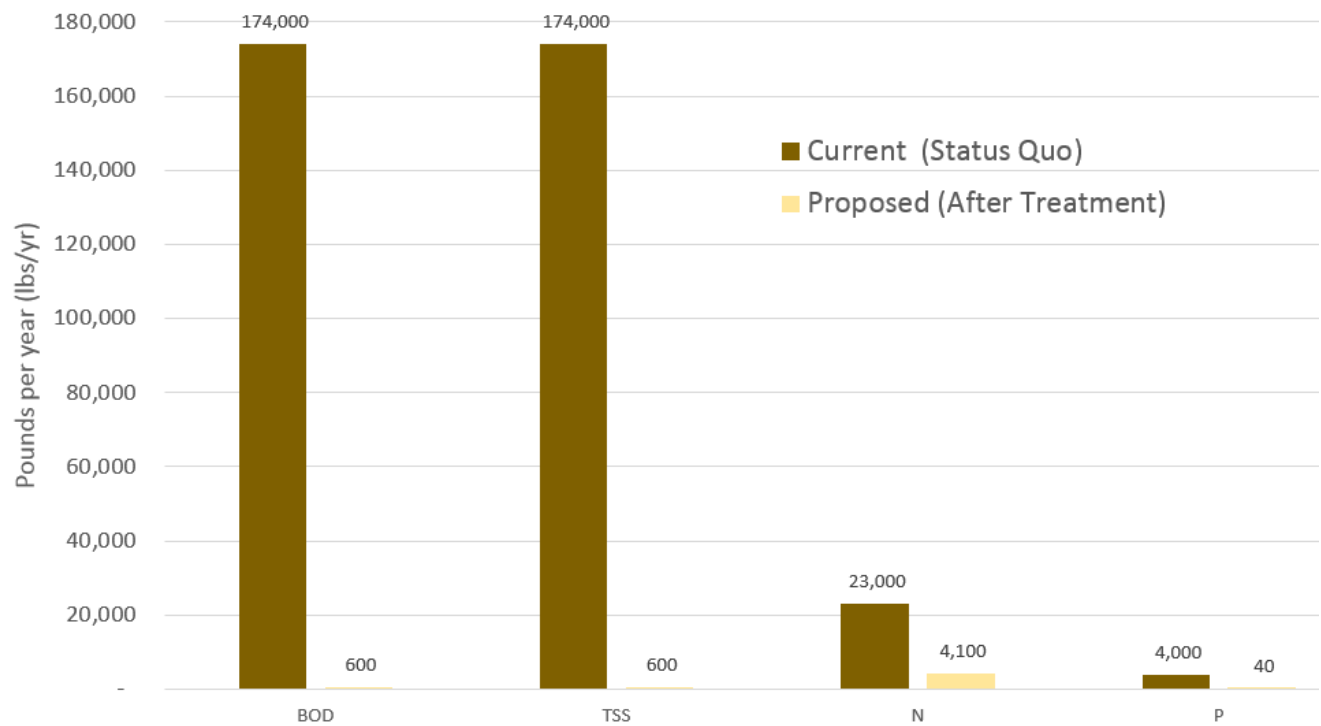


Figure 5-3. Environmental Benefits of Proposed Project

## 5.5 Cost Estimates

An order of magnitude probable construction is summarized in Table 5-3. The estimate includes a 25 percent estimating contingency. The detailed cost estimate is included as Appendix A.

Description	Estimated Construction Cost
Electrical and instrumentation	\$1,976,000
Headworks	\$906,000
Odor Control	\$412,000
Lagoons	\$2,222,000
Constructed Wetland	\$611,000
Land Application	\$925,000
On-site improvements	\$6,325,000
Off-site improvements	\$1,223,000
<b>Total Estimated Construction Cost</b>	<b>\$14,600,000</b>

## 5.6 Future Expansion

### 5.6.1 Full Buildout Flows

Full buildout wastewater flow projections were developed using the Draft Ka'u Community Development Plan (March 2015) and the CCH's current (2017) wastewater standards. Table 5-4 summarizes the projected full buildout flows for the community, and Figure 2-1 shows the WWTP full buildout service area.

Description	Value	Peaking Factor
Average dry weather flow	360,000 gallons per day	1.0
Peak day wet weather flow	1,260,000 gallons per day	3.5
Peak hour wet weather flow	1,200 gallons per minute	4.8

### 5.6.2 Improvements

To accommodate the flow increase anticipated from the full buildout of the Pahala wastewater collection system, the WWTP will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the 14.9-acre site.

Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solids recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater

opportunity for contact between the naturally-occurring micro-organisms in the lagoon and dissolved organic matter. As a result, complete mix lagoons provide greater levels of treatment within a smaller volume than partial mix lagoons. However, facilities must be provided downstream of complete mixed lagoons to allow removal of settleable solids from the water column. To provide a place for solids settling, lagoons 2 through 4 will continue to act as partial mix aerated lagoons downstream of the complete mix lagoon 1. Lagoon 4 will require no aeration and will continue to be covered to deprive algae of sunlight and allow suspended solids to settle out of the system effluent.

Utilizing this lagoon system approach, the Pahala WWTP will require modifications at full buildout flows, but is not anticipated to expand beyond the initial build 14.9 acres.

## Section 6

# Implementation

Table 6-1 provides the implementation schedule for the WWTP. The LCCs will be closed following connection of the existing sewer system to the WWTP.

<b>Table 6-1. Implementation Schedule</b>	
<b>Description</b>	<b>Milestone</b>
Complete design of WWTP	September 18, 2019
Complete construction of WWTP	May 20, 2021
Connect existing collection system to WWTP	June 30, 2021

## Section 7

# Alternative Treatment Options Evaluation

Several other treatment alternatives were considered for the Pahala WWTP, as summarized below.

## 7.1 Option Descriptions

### 7.1.1 Option 1: Aerated Lagoons/Constructed Wetland/Land Application

Option 1 consists of an aerated lagoon treatment system with a constructed wetland and disinfection, followed by land application for effluent management, as described previously throughout this report. Figure 7-1 is a schematic diagram for Option 1.



Figure 7-1. Option 1 Schematic Diagram

### 7.1.2 Option 2: R-1 Treatment/Land Application

Option 2 consists of constructing a membrane bioreactor (MBR) or an activated sludge treatment process followed by cloth media filtration, followed by UV disinfection, to produce recycled water that meets DOH R-1 recycled water criteria. R-1 recycled water is effluent that has undergone oxidation, filtration, and disinfection. R-1 is considered the highest grade of recycled water and can be used for irrigation of golf courses, parks, schools, and all types of agricultural crops. The R-1 treatment system would be followed by land application as per Option 1. Figure 7-2 is a schematic diagram for Option 2.

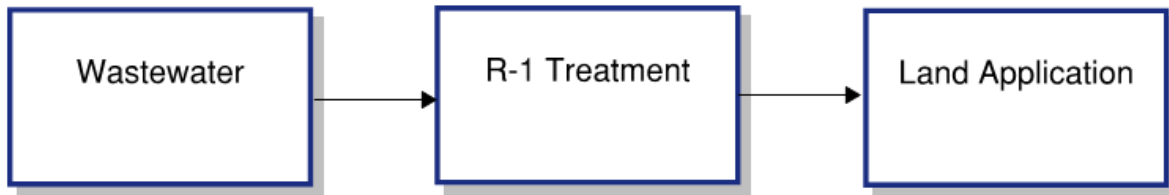


Figure 7-2. Option 2 Schematic Diagram

### 7.1.3 Option 3: R-1 Treatment/Seasonal Water Recycling

Option 3 consists of a treatment system similar to Option 2 to produce R-1 recycled water. The recycled water would be used to irrigate nearby macadamia nut orchards. Figure 7-3 provides a schematic diagram of Option 3.

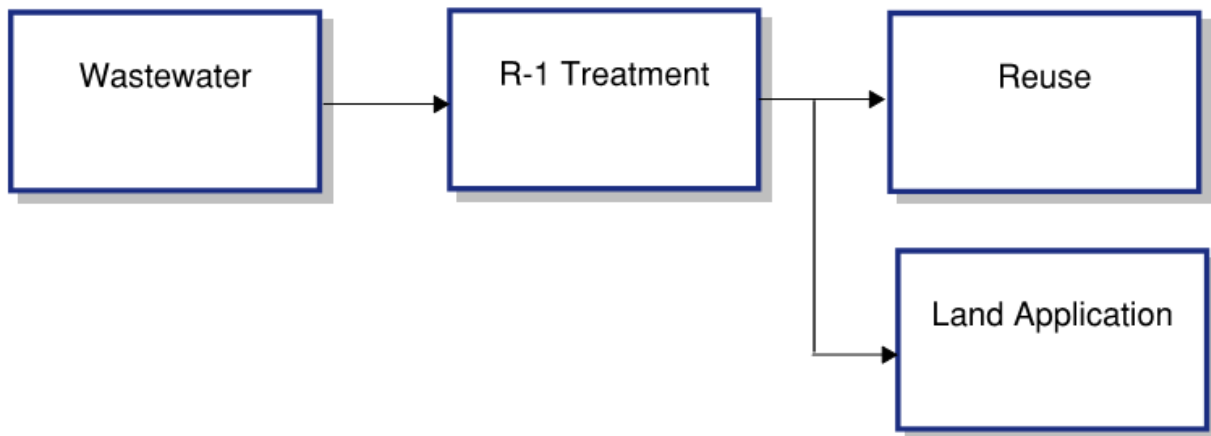
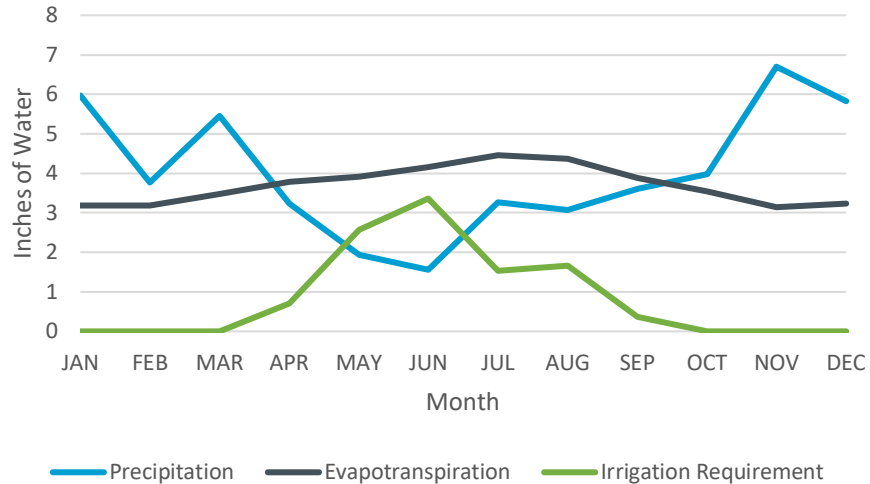


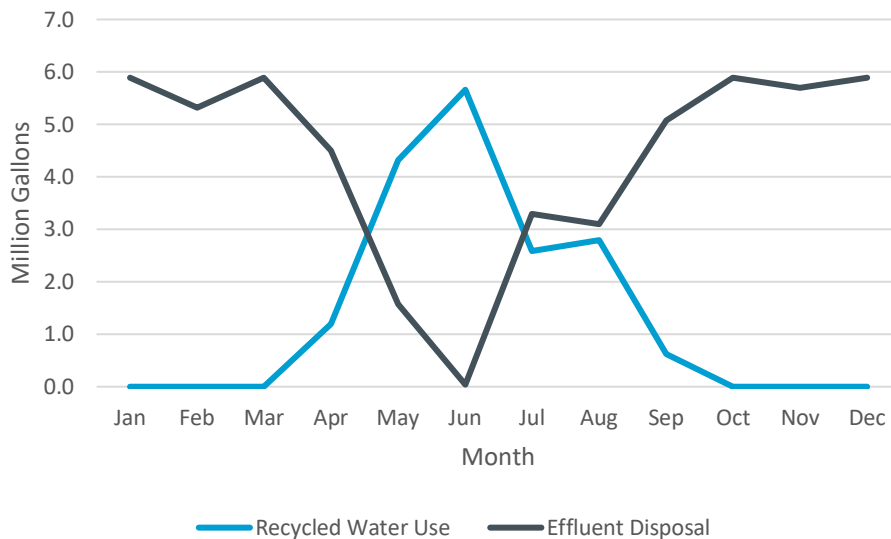
Figure 7-3. Option 3 Schematic Diagram

A water recycling analysis was prepared to assess the potential seasonal demand for recycled water produced by the WWTP. Figure 7-4 is an irrigation demand assessment for the Pahala area based on published climate data. The graph shows precipitation, estimated evapotranspiration, and the irrigation demand for each month of the year. As shown in the figure, irrigation is typically needed from April through September, reaching a peak demand in June. The graph shows that no irrigation is typically needed between October and March, because precipitation exceeds evaporation during those months.



**Figure 7-4. Irrigation Demand Assessment**

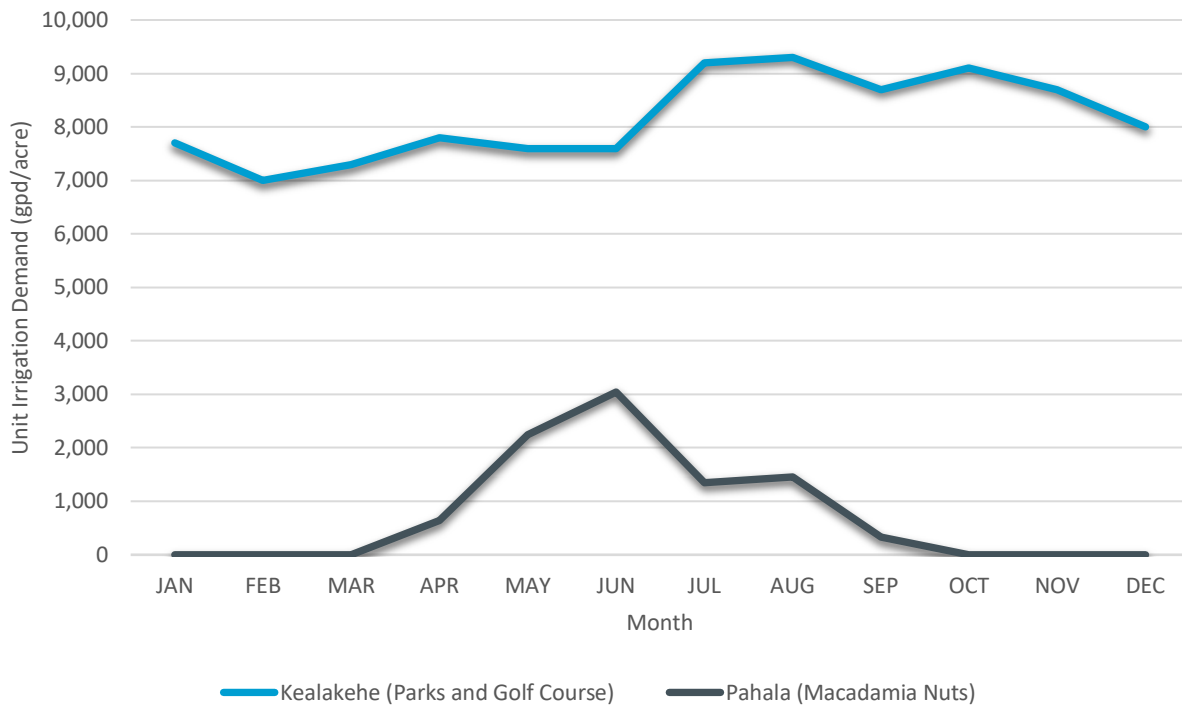
The potential demand for recycled water produced by the Pahala WWTP was assessed, as shown in Figure 7-5. The WWTP could potentially provide irrigation water for approximately 62 acres, based on the peak month irrigation demand in June. During June, all the recycled water produced by the WWTP would be used on the 62 acres. During all other months the supply of recycled water will typically exceed the demand, and the excess water would be land applied on the WWTP property as per the previous alternatives.



**Figure 7-5. Option 3 Recycled Water Demand Assessment**

The Pahala climate makes it possible to only recycle only about 25 percent of the annual flow in this scenario, due to the long wet season and relatively low evapotranspiration rate during the dry season. This is in stark contrast to the Kailua-Kona area on the leeward side of the island, where the climate will allow approximately 88 percent of the recycled water produced at the Kealakehe WWTP

throughout the year to be recycled. Figure 7-6 provides a comparison of the irrigation demand in Pahala with the irrigation demand at Kealakehe.

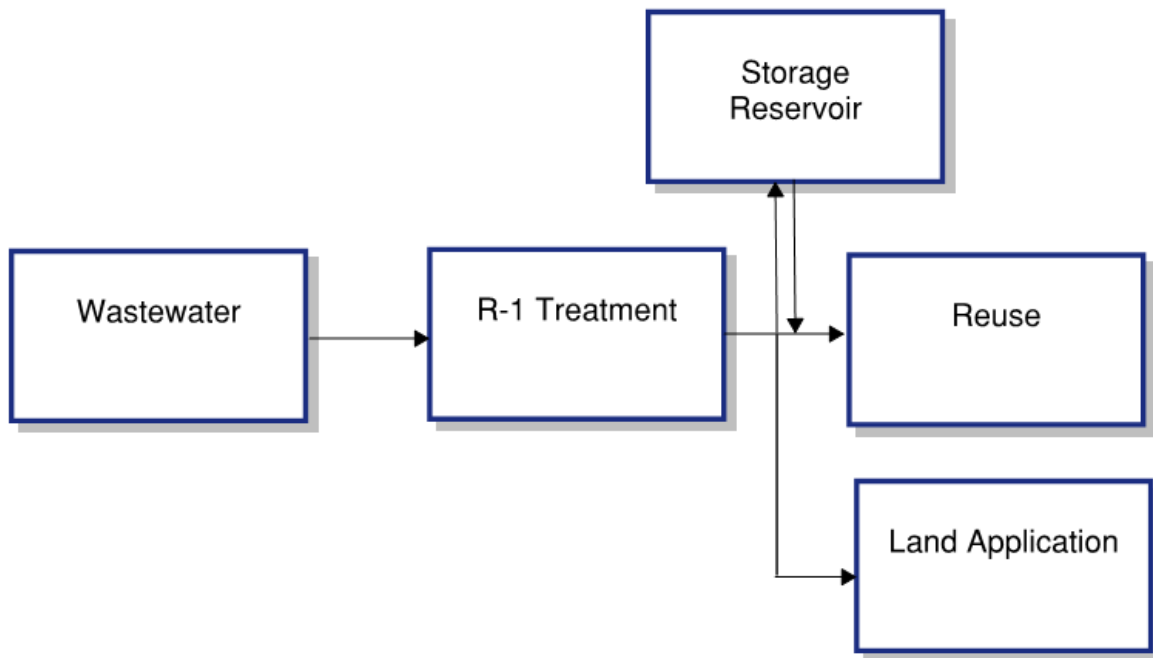


**Figure 7-6. Comparison of Irrigation Demands at Pahala and Kealakehe**

### 7.1.4 Option 4: R-1 Treatment and Storage for 100% Water Recycling

Option 4 adds a seasonal storage reservoir, as shown schematically in Figure 7-7.

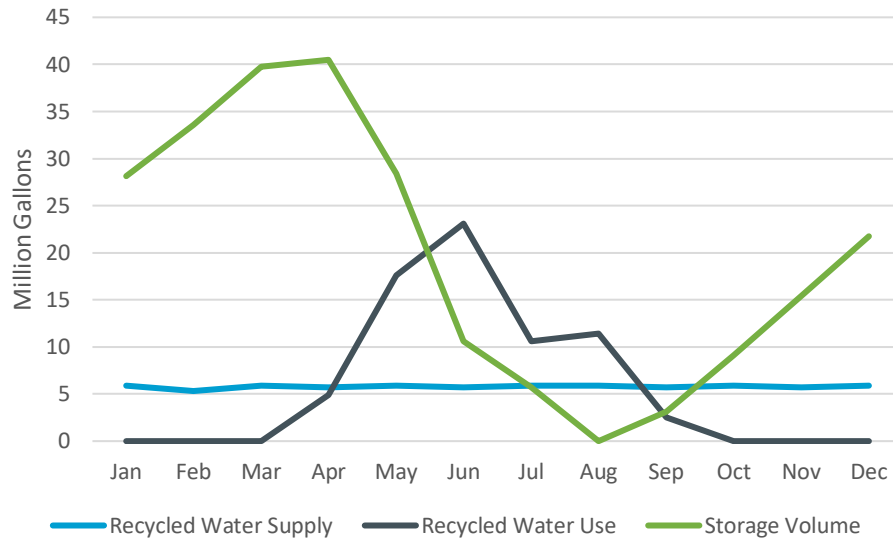




**Figure 7-7. Option 4 Schematic Diagram**

Implementation of a seasonal storage reservoir would make it possible to recycle 100 percent of the R-1 water produced by the Pahala WWTP in a typical year. The seasonal storage reservoir would make it possible to save recycled water produced during the wet season for use during the dry season. An annual water balance was prepared to assess the seasonal storage reservoir needs for the Pahala WWTP. Figure 7-8 provides a summary of the evaluation, and shows recycled water supply, use, and storage throughout a typical year. As shown in the graph, peak storage of approximately 40 million gallons (Mgal) would occur during April, and by August the storage reservoir would be dry and ready for another wet season. Under this scenario it would be possible to irrigate approximately 253 acres of macadamia nut trees. The lined, 20-foot-deep storage reservoir would have a water surface area of approximately 7 acres.

Storage of recycled water is not without its challenges. Recycled water contains nutrients that allow algae to grow. The algae can cause odors if stagnant water conditions are allowed to develop. Recycled water that is stored in open reservoirs must often be re-treated to improve the water quality characteristics. Recycled water reservoirs can be equipped with mixers to prevent stagnant water conditions, and/or be equipped with floating covers to block the sunlight that fosters algal growth.



**Figure 7-8. Seasonal Storage Reservoir Analysis**

Implementation of a seasonal storage reservoir and recycling program would not eliminate the need for a land application system at the WWTP, as described previously. HAR 11-62 requires a disposal system for all recycled water system, to provide a means for disposal of water that does not meet R-1 standards or disposal of excess water should the seasonal storage reservoir capacity be exceeded during an exceptionally wet year.

**7.1.5 Option 5: Maximum Practical Treatment**

Option 5 consist of implementing advanced wastewater treatment processes that represent maximum practical treatment. The option is illustrated schematically in Figure 7-9. The process treatment train consists of a 5-stage Bardenpho activated sludge treatment process, followed by chemical addition and denitrifying filters to reliably reduce total nitrogen to less than 4 mg/L and total phosphorus to less than 0.1 mg/L. The treatment processes would be followed by a disinfection process to create R-1 recycled water. The recycled water produced would be used to irrigate macadamia nut trees as per Option 3. A seasonal storage reservoir could also be implemented at additional cost. A land application system would be required as per the previous Options.

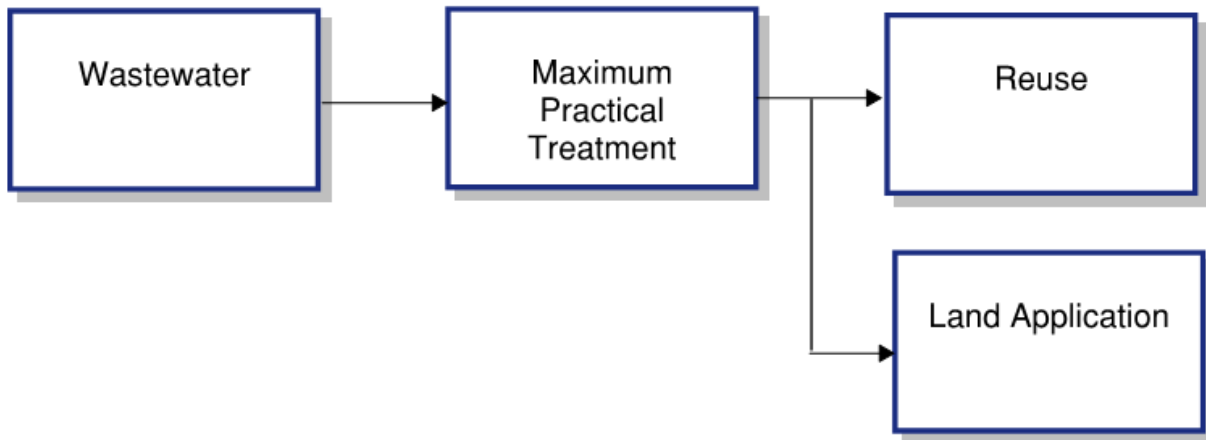


Figure 7-9. Option 5 Schematic Diagram

## 7.2 Cost Comparisons

Planning-level cost estimates were prepared for the five options, as described below.

### 7.2.1 Capital Costs

Table 7-1 summarizes the capital costs associated with the options described above. Additional detail can be found in Appendix A. The capital costs shown in the table do not include costs associated with collection system improvements or closure of the existing LCCs.

Table 7-1. Summary of Capital Cost Estimates		
Option	Name	Estimated Capital Cost
1	Aerated lagoons/constructed wetland/land application	\$14.6 million
2	R-1 treatment/land application	\$18.4 million
3	R-1 treatment/seasonal water recycling	\$20.2 million
4	R-1 treatment and storage for 100% water recycling	\$30.4 million
5	Maximum practical treatment	\$26.0 million

Comparison of options 1 and 2 shows that providing R-1 treatment instead of the aerated lagoon and wetland natural treatment system will increase the capital cost by approximately \$3.8 million. Option 3 shows that addition of water recycling to reuse approximately 25 percent of the annual flow would add an additional \$1.8 million in capital costs. Option 4 shows that constructing a seasonal storage reservoir to recycle 100 percent of the flow would add an additional \$10 million in capital costs. Comparison of options 3 and 5 shows that providing maximum practical treatment instead of normal R-1 treatment would add \$5.8 million in capital costs.

### 7.2.2 Operation and Maintenance Costs

Operation and maintenance (O&M) costs include labor, electricity, chemicals, spare parts, sludge management, and other costs required to operate and maintain the facility. Table 7-2 provides a

summary of the O&M cost estimates developed for the options. Additional details can be found in Appendix A.

Option	Name	Estimated Annual O&M Cost
1	Aerated lagoons/constructed wetland/land application	\$236,000
2	R-1 treatment/land application	\$1,052,000
3	R-1 treatment/seasonal water recycling	\$1,055,000
4	R-1 treatment and storage for 100% water recycling	\$1,063,000
5	Maximum practical treatment	\$1,421,000

As shown in the table, option 1 incurs significantly lower O&M costs than the other options. The significant cost differential is due to the simple aerated lagoon natural treatment system that requires less labor, electricity, chemical, and maintenance than the other options.

### 7.2.3 Recycled Water Sale Proceeds

Options 3, 4, and 5 will produce a marketable product in the form of R-1 recycled water that could be sold to users for irrigation purposes. The value of recycled water is a function of the value of the water that it replaces. In general, recycled water is sold to users at a fraction of the price of the water that is being replaced to provide a financial incentive to use the product. The typical recycled water price is 25 percent to 90 percent of the water it replaces.

The Pahala WWTP will be located at elevation 750 feet MSL. The cost to pump groundwater from the basal lens to the ground surface at the WWTP is approximately \$1,078 per million gallons. Table 7-3 provides a summary of a recycled water sales assessment of each option, assuming the recycled water is sold for 90 percent of the cost of the irrigation water it would replace. Additional detail is provided in Appendix A.

Option	Name	Annual Volume Recycled (Mgal)	Maximum Annual Sales Proceeds
1	Aerated lagoons/constructed wetland/land application	0	\$0
2	R-1 treatment/land application	0	\$0
3	R-1 treatment/seasonal water recycling	17	\$17,000
4	R-1 treatment and storage for 100% water recycling	70	\$68,000
5	Maximum practical treatment	17	\$17,000

### 7.2.4 Life-Cycle Costs

Life-cycle costs represent the total costs to the community to construct and operate the wastewater treatment system over a 30-year period. The life-cycle cost evaluation includes capital and O&M costs, and recycled water sales proceeds as described above. In addition, equipment replacement allowances are included after 20-years of operation. The life-cycle cost evaluation includes an

inflationary factor to account for long-term changes in the value of money. The life-cycle costs are expressed as the Net Present Value (NPV). The NPV represents the amount of money that the County would need to set aside now in an interest-bearing account to cover all of the costs over the defined life-cycle. Table 7-4 provide a summary of the life-cycle cost evaluation. Additional detail can be found in Appendix A.

Table 7-4. Summary of Life-Cycle Cost Estimates		
Option	Name	Estimated Life-Cycle Cost
1	Aerated lagoons/constructed wetland/land application	\$21.2 million
2	R-1 treatment/land application	\$43.0 million
3	R-1 treatment/seasonal water recycling	\$44.5 million
4	R-1 treatment and storage for 100% water recycling	\$54.0 million
5	Maximum practical treatment	\$59.0 million

As shown in the table, option 1 incurs the lowest life-cycle costs, and the other options would all incur over double to nearly triple the cost over the 30-year life-cycle. The life-cycle cost estimates are shown graphically in Figure 7-10. The operating costs shown in the figure include benefits (i.e., cost reductions) from recycled water sales where applicable.

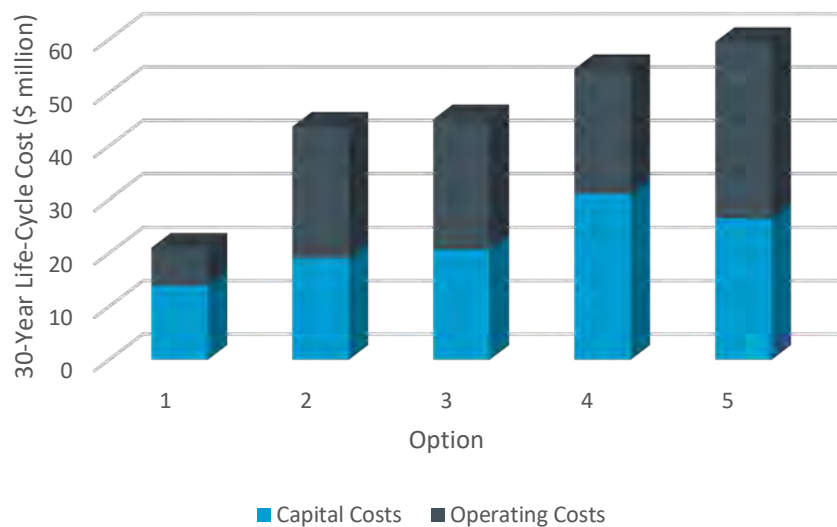


Figure 7-10. Life-Cycle Costs of Options

As shown in the graph, the operating cost differential between option 1 and the other options is the leading contributor to the lower life-cycle cost of option 1. The major operating cost differences are discussed below.

### 7.3 Non-Economic Discussion

The options are discussed on a non-economic basis below.

### 7.3.1 Labor Requirements

The Pahala WWTP will be operated by the COH DEM, Wastewater Division that is based in Hilo. The Hilo-based WWTP operators will regularly visit to facility to check the system status, make operational adjustments, and draw samples for required laboratory testing. In addition, maintenance personnel will visit the WWTP as needed to conduct equipment and electrical system repairs.

A major difference between option 1 and the other options is the frequency of routine operator visits required, and the number of personnel routinely required. Option 1 will require a single operator to normally visit the site once per week. The other options will require daily operator visits to conduct sampling that is required for R-1 compliance. In addition, options 2 through 5 consist of mechanical treatment technology that required more operator attention than option 1. Table 7-5 compares the operational labor differences for the options, as expressed as full-time equivalents (FTEs).

Option	Name	Estimated Operational Labor Requirement (FTEs)
1	Aerated lagoons/constructed wetland/land application	0.3
2	R-1 treatment/land application	3.7
3	R-1 treatment/seasonal water recycling	3.7
4	R-1 treatment and storage for 100% water recycling	3.7
5	Maximum practical treatment	5.6

### 7.3.2 Operational Complexity

HAR 11-61 establishes operator certification requirements for WWTPs. The DOH requires that certified operators operate municipal WWTPs. The larger and/or more complex the wastewater treatment process, the higher grade of operator required at the facility. Options 1 through 5 were evaluated for operator certification requirements based on the criteria established in HAR 11-61. Table 7-6 summarizes the results of the evaluation. As shown in the table, option 1 would require a Grade I operator, while the other options would require a Grade IV operator (the highest grade). The higher requirements for options 2 through 5 are due to the complexity of the treatment processes compared to option 1. In general, the County has difficulty attracting and retaining Grade IV operators.

Option	Name	Operator Certification Level Requirement
1	Aerated lagoons/constructed wetland/land application	I
2	R-1 treatment/land application	IV
3	R-1 treatment/seasonal water recycling	IV
4	R-1 treatment and storage for 100% water recycling	IV
5	Maximum practical treatment	IV

### 7.3.3 Energy Consumption

Figure 7-11 provides a comparison of the electrical energy requirements of the five options. As shown in the graph, option 1 will require significantly less electrical energy to operate, due to the use of natural treatment systems (aerated lagoons) instead of mechanical treatment processes that require more aeration and process pumping.

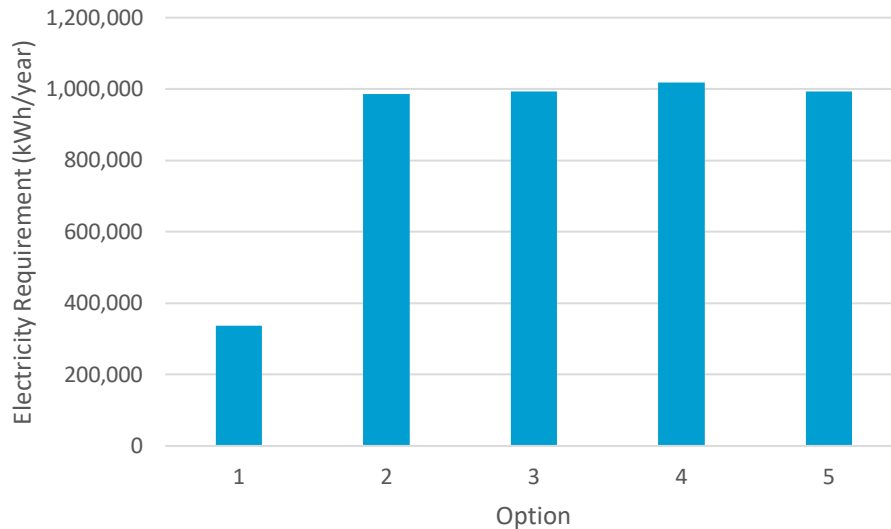


Figure 7-11. Comparison of Electrical Energy Requirements

### 7.3.4 Sludge Management

Sludge management for Option 1 is significantly different than the other options. The partial-mix aerated lagoon treatment system allows wastewater solids to accumulate at the bottom of the lagoon, forming a sludge blanket that slowly anaerobically digests. Sludge removal is infrequent, typically on the order once every 15 to 20 years. The resulting solids are well-digested and inoffensive due to the long retention time in the lagoons.

Options 2 through 5 would require an aerobic digester to stabilize and store waste solids from the activated sludge treatment process. The solids would need to be dewatered and trucked to a landfill on a weekly basis.

## 7.4 Living Machine®

Living Machine® technology was suggested during community outreach meetings. Living Machine® is a proprietary technology by Worrell Water Technologies that incorporates aerated tanks planted with vegetation to provide an attractive wastewater treatment process. In colder climates the aerated tanks are housed in a greenhouse for protection. In addition, subsurface flow wetlands with continuous and/or batch flow can be included in the process to provide desired treatment.

The Living Machine® technology has been implemented in “green” buildings like the San Francisco Public Utilities Commission building, the Port of Portland Headquarters, and others. Review of the company’s website did not reveal any municipal projects completed on the scale of what would be needed for Pahala. Therefore, the technology is considered to be not feasible.

It should be noted that the proposed non-proprietary treatment system (aerated lagoons and subsurface flow wetland) uses essentially the same natural treatment processes as the Living Machine®, but on a municipal scale.

## 7.5 Septic Tank Alternatives

A previous assessment recommended installation of a community septic tank and repurposing one of the existing LCCs to serve as a seepage pit (SSFM, July 2007), in accordance with Alternative 1 proposed to the community by the County in 2004 (County of Hawaii, November 5, 2004). This and other options that have been raised during the community outreach process that incorporate septic tank technology are discussed below.

### 7.5.1 Community Septic Tank

The effectiveness of a septic tank is directly related to the amount of hydraulic detention time provided by the tank volume. The previous study (SSFM, July 2007) suggested a 24-hour detention time would be adequate. Applying the current flow projections for the project indicate a 190,000-gallon tank would be appropriate if this criterion is used. However, for large community septic tanks it has been found that longer detention times are needed to optimize treatment performance, avoid the need for frequent septage pumping, and to account for peak flow rates that are developed by community wastewater collection systems. Applying appropriate design criteria (Crites and Tchobanoglous, 1998), to the project results in the need for an 800,000-gallon tank, which would require pumping on a 3-year interval. The area required for an appropriately-sized community septic tank would be approximately ¼ acre.

The use of a community septic tank would require the DOH to issue a variance to HAR 11-62, which requires WWTPs with design capacities greater than 100,000 gallons per day to produce effluent containing less than 30 mg/L of both BOD<sub>5</sub> and TSS – septic tanks are not able to produce effluent of this quality. A secondary treatment process is needed to comply with the effluent quality requirements contained in the DOH regulations. The County would need to reapply for the variance every 5-years, and if not renewed then secondary treatment would need to be provided.

Additionally, odors from a community septic tank present a significant concern. A septic tank is an anaerobic treatment process that produces hydrogen sulfide, reduced sulfur compounds, and other odorous gases. Odors emanating from septic tanks at individual residences are typically dispersed to the atmosphere throughout the community via the household plumbing roof vents. A community septic tank would concentrate the community's emissions to a single point source that would require foul air collection and treatment to avoid nuisance odor conditions. A dual-stage scrubber capable of treating approximately 3,600 cubic feet per minute of foul air would be required to avoid nuisance odor conditions. The dual-stage scrubber would consist of a biotrickling filter, followed by a granular activated scrubber.

### 7.5.2 Converting LCC to Seepage Pit

A previous study (SSFM, July 2007) suggested that the existing LCC located on the County-owned parcel TMK 9-6-002:024 could be converted to a seepage pit that would be regulated by DOH as an injection well. HAR 11-23-07 allows injection wells located mauka of the UIC line that were in existence prior to July 6, 1984 to continue to operate. However, the flow to the wells cannot increase, nor can a new well be constructed. Therefore, the earlier plan to convert the existing LCC to a seepage pit is not feasible for the following reasons:

- Closing LCC No. 2 that is located on private property would not be allowed, as it would increase the flow to LCC No. 1 (converted to a seepage pit that is regulated as an injection well) that is located on County property.



- The capacity, structure, and condition of the existing LCC No. 1 is not known. The LCC could either be a lava tube or a large conventional cesspool. A geotechnical investigation conducted on the site to depths of 30 to 35 feet did not reveal the presence of lava tubes (Masa Fujioka & Associates, January 9, 2007), therefore it is likely a large conventional cesspool. The County attempted to determine the structure and condition of the LCC via closed circuit TV inspection, but could not ascertain either due to technological limitations. It is not known if the LCC could accommodate the flow from the existing service area if LCC No. 2 is closed.
- HAR 11-62-25 requires new and proposed effluent disposal systems to have a backup disposal system capable of handling the peak flow. A second seepage pit cannot be constructed to comply with the regulatory requirement because the site is located mauka of the UIC line. If the existing seepage pit were to fail then a replacement cannot be constructed.
- The Kau Community Development Plan requires the County to provide for eventual construction of sewers throughout the community. Providing sewers for the entire community will increase wastewater flows considerably, as presented in Section 5. Increasing flow to the existing LCC (converted to a seepage pit) would not be allowed. Therefore, the use of the existing LCC as a disposal system could prevent the County from providing the community's desired future wastewater needs.

For these reasons, converting the existing LCC to a seepage pit is considered to be not feasible.

### 7.5.3 Leachfield Disposal

Leachfields are effluent disposal systems consisting of buried gravel-filled absorption trenches. Significant treatment occurs as septic tank effluent percolates through the soil surrounding the leachfield trenches. Leachfields are an integral part of residential septic systems, and DOH has established trench design criteria applicable to both residential and municipal-scale leachfields. In particular, HAR 11-62-34 requires trenches to be sized based on bottom area only. Application of the DOH criteria to the project yields a need for at least 30 acres of land to satisfy DOH hydraulic loading rate and redundancy requirements. Achieving even distribution of effluent over a leachfield of this size would be challenging at best. Therefore, leachfield disposal for the project is considered to be not feasible.

### 7.5.4 Conversion to Individual Wastewater Systems

The concept of a community wastewater system could be abandoned and all houses be required to construct individual wastewater systems comprised of a septic tank and leachfield. However, many of the lots in the community are small (less than 10,000 square feet) and significantly improved, making the feasibility of constructing individual wastewater systems on every lot uncertain. HAR 11-62-34 allows construction of seepage pits where there is insufficient land area to install absorption trenches (i.e., a leachfield), but prohibits construction in soils having percolation rates slower than 10 minutes per inch or where rapid percolation through such soils may result in contamination of water-bearing formations. The soils in the community are classified as Puueo-Naalehu complex, 3 to 10 percent slopes in the National Resource Conservation Service soil survey. This soil type consists of approximately 18 inches of extremely cobbly medial silt loam over cobbles and bedrock. This soil profile is too thin for conventional soil absorption trenches, so residents with sufficient space would be required to import fill soil to create elevated mound systems in accordance with HAR 11-62-34 to achieve adequate soil depth. Residents without sufficient space could potentially install seepage pits if suitable subsurface geology could be located. However, previous subsurface investigations in the community (Masa Fujioka & Associates, January 9, 2007, and Geolabs-Hawaii, September 23,

1998) revealed extremely permeable clinker layers and numerous lava tubes, both of which would not meet HAR 11-62-34 requirements for seepage pits. For these reasons, conversion to individual wastewater systems is considered to be not feasible.

### **7.5.5 Gray Water Systems/Composting Toilets**

*The DOH has published guidelines for the reuse of gray water (DOH, June 22, 2009). The DOH defines black water as wastewater discharged from toilets and urinals and kitchen sinks. Gray water is defined as wastewater discharged from showers and bathtubs, lavatories, wastewater that has not contacted toilet waste, sinks not used for food preparation.*

*Composting toilets are a type of dry toilet that treats human excreta by a biological process called composting. The process leads to the decomposition of organic matter and turns the human excreta into a compost-like material but does not destroy all pathogens. Composting toilets do not require a connection to a septic tank or sewer system (Wikipedia).*

*The combination of a gray water system and composting toilet cannot replace an individual wastewater system or a sewer connection, because black water from the kitchen sink in a residence requires either an individual wastewater system or sewer connection.*

## **7.6 Package Plant**

*Package plants are commercially-available prefabricated wastewater treatment plants. Package plants are commonly used for small WWTPs with capacity requirements less than 250,000 gallons per day. Package plants are generally based on the extended aeration activated sludge process. Use of a package plant in lieu of aerated lagoons at Pahala could potentially save some capital cost but would require daily visits by WWTP operators to monitor and adjust the process, and to waste sludge. In addition, weekly or bi-weekly sludge dewatering and disposal would be required. The results of an economic analysis of a package plant alternative for Pahala are:*

- *Capital cost: \$12.6 million*
- *Annual O&M cost: \$1.1 million*
- *Life-cycle cost: \$37 million.*

*Comparison of these values to the results shown in Tables 7-1, 7-2, and 7-4 show that a package plant at Pahala would incur significantly higher life-cycle costs compared to the recommended aerated lagoon approach.*

## Section 8

# Alternative Site Evaluation

Nine sites were evaluated as potential locations for the Pahala WWTP. Each site was assessed for twenty-one criteria, in four broad categories: environmental, social and cultural; location and site; land use and availability; and collection system and service area.

## 8.1 Methodology

The site evaluation was performed according to the following process:

1. Potential sites for the Pahala WWTP were initially identified by the Department of Environmental Management. Additional sites were identified based on feedback from the Pahala community obtained during Community Outreach meetings that took place in December 2017.
2. Four general categories and twenty-one criteria were established and defined for the analysis.
3. Six “fatal flaw” conditions were identified. Sites with a fatal flaw were eliminated from further consideration.
4. Relative weighting factors were established for each category and criteria.
5. Sites were mapped using GIS. Data such as soil type, location of subsurface and surface water, topography, zoning and prevailing wind direction were determined.
6. Each site was evaluated and scored for the twenty-one criteria.
7. A weighted ranking was determined for each site, based on the weighting factors established in Step 4.
8. A preferred site was identified, based on the weighted high score.

## 8.2 Site Locations

Ownership, location, and proximity to the existing LCCs for all siting alternatives considered is illustrated in Figure 8-1.

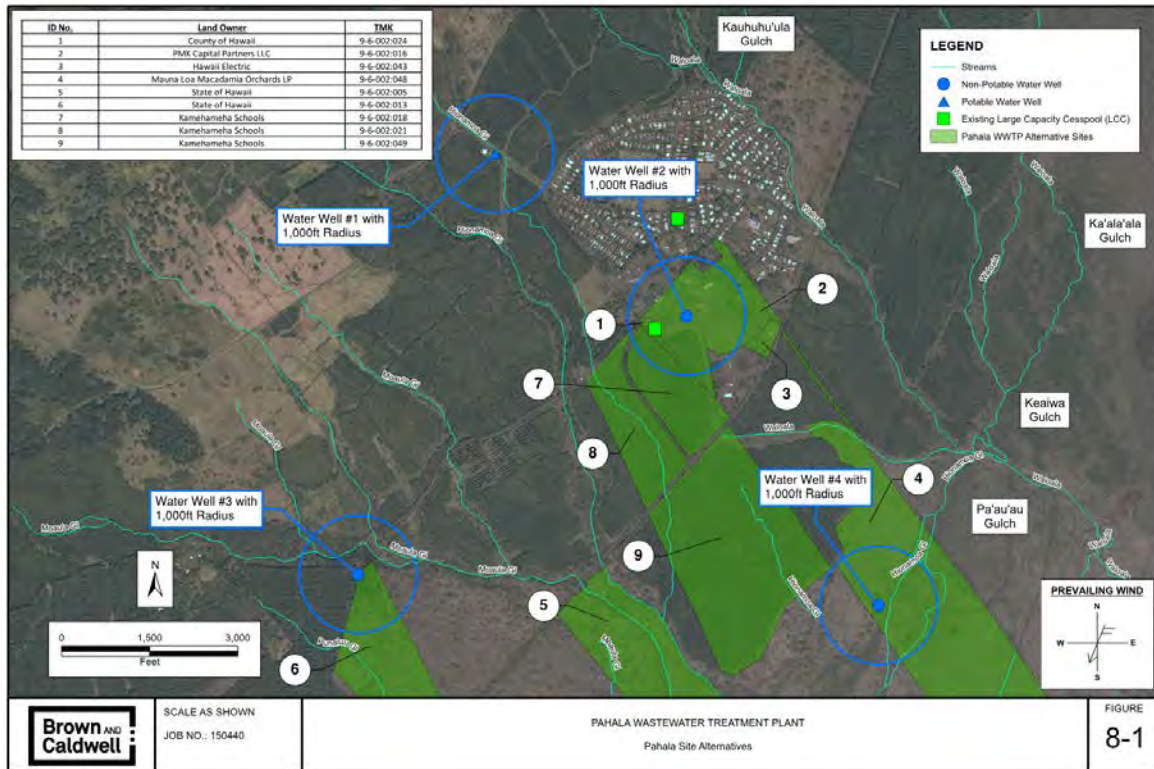


Figure 8-1. Pahala Site Alternatives

## 8.3 Criteria

The criteria used for the analysis are presented for each of four categories in Tables 8-1, 8-2, 8-3 and 8-4. A score was assigned to each criterion based on definitions included in the tables. A score of five represents a preferred or positive condition, and a score of one a less preferred or negative condition. A score of zero indicates a fatal flaw; six fatal flaw conditions were identified during the analysis are identified in the corresponding table.

Table 8-1 outlines the environmental, social, and cultural criteria considered in the analysis.

Table 8-1. Environmental, Social and Cultural Criteria						
Criteria	Scoring and Definitions					
	5	4	3	2	1	0 = Fatal Flaw
Presence of or proximity to archaeological/cultural sites	No known or suspected sites	Confirmed or suspected sites and mitigatable	No information available	Suspected sites and mitigation ability unknown	Confirmed sites and mitigation ability unknown	Confirmed sites and unmitigatable
Proximity of treatment units to existing occupied buildings	More than 1000 ft. from any occupied building		Between 50 and 1000 ft. from non-school building	Between 50 and 1000 ft. of school	Less than 50 ft from any occupied building	
Prevailing wind direction	Site is downwind of most of the community		Site is central		Site is upwind of most of the community	
Biology	Endangered or threatened species not present		Presence of endangered or threatened species unknown		Endangered or threatened species known to be present	Endangered or threatened species known to be present and unmitigatable
Visual impact	Natural visual mitigation (hill, berm, vegetation, remoteness) exists		Visible location, mitigatable with trees or other engineered buffers		Visible location, unmitigatable	
Contamination from prior land use	No suspected industry-related contamination issues		Presence of contamination unknown		Suspected or confirmed contamination issues	
Previously disturbed or developed	Yes		Partial		No previous development or disturbance	

The circumstance where a cultural or historical site is known to exist within the treatment facility footprint and mitigation to relocate, protect, or preserve that site is not possible, was identified as a fatal flaw condition.

From an environmental perspective, the presence of endangered or threatened species was considered negative. A site previously disturbed or developed was viewed as positive, unless contamination from a previous land use was suspected.

Considerations specific to social impact include proximity to occupied buildings (including residences, school, commercial establishments and others), prevailing wind direction, and visual impact.

Table 8-2 outlines the location and site characteristics considered in the analysis.

Table 8-2. Location and Site Characteristics						
Criteria	Scoring and Definitions					
	5	4	3	2	1	0 = Fatal Flaw
Parcel size	More than 14.9 acres					Less than 14.9 acres
Soils type	Good soil and in sufficient amounts in area of parcel useable for disposal		Good soil but over limited area and disposal modification required		Marginal soil in area of parcel useable for disposal	No soil in area of parcel useable for disposal
Topography	Gentle slopes (less than 8%)		Moderate slopes (8% - 18%) or localized high/low points		Steep slopes (18% - 20%)	Extreme slopes (greater than 20%)
Proximity to water well	Outside of both 1000 ft. radius and upgradient influence zone of any well		Outside of 1000 ft. but suspected within upgradient influence zone of non-potable well		Within 1000 ft. or within upgradient influence zone of non-potable well	Within 1000 ft. or within upgradient influence zone of potable well
Presence of lava tubes	None		Possible or unknown		Known	
Proximity to surface water, intermittent stream or coast line	Treatment and disposal more than 500 ft. away		Treatment and disposal between 50 to 500 ft.		Treatment and disposal less than 50 ft. away	
Flood control / drainage	No risk of flooding		Flood risk unknown		Prone to flooding or within flood zone	
Vehicle access	Vehicle access currently exists		Existing easement, but new road or significant road upgrades required in or via county/private right if way	Existing easement, but new road or significant road upgrades required in or via state right-of-way	No current vehicle access or easement, access legally restricted, or significant obstruction to access	
Power and potable water availability	Utilities currently available at property line and within 400 ft. of site, no new easement required, no known significant obstructions (i.e. - culverts, streams, cultural sites)		Utilities available within 400 yds. of property or unknown		Potable water and/or power not currently available within 400 yds. of property and/or significant obstruction to utility construction	

Three fatal flaw conditions were identified for the location and site characteristics category in Table 8-2:

- Sites less than 14.9 acres in size, which is the least amount of land needed for treatment, disposal, and future growth.
- Average slopes greater than 20 percent, which significantly increase the cost of construction and limit design options.
- Location within a 1000-foot radius surrounding a potable water well, which is prohibited by HAR 11-62 for the protection of drinking water in the State of Hawaii.

Table 8-3 outlines the collection system and service area characteristics considered in the analysis.

<b>Table 8-3. Collection System and Service Area Criteria</b>					
<b>Criteria</b>	<b>Scoring and Definitions</b>				
	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Distance from LCC collection area</b>	Parcel is adjacent to existing LCC or less than 0.25 miles away	Parcel is 0.25-0.5 mile away from existing LCC	Parcel is 0.5-1.0 miles away from existing LCC	Parcel is 1.0 – 1.5 miles away from existing LCC	Parcel is more than 1.5 miles away from existing LCC
<b>Gravity flow possible or pumping required</b>	Gravity flow possible				Pumping required for wastewater transmission from collection area to site
<b>Number of properties newly accessible</b>	Commercial areas become accessible		Additional individual residential properties become accessible outside of LCC service area		No additional properties become accessible

A site location requiring large transmission distances of more than two miles are less preferable due to both initial capital cost and future operations and maintenance requirements. Similarly, sites where wastewater can flow via gravity from the collection area are preferable to those requiring a pump station.

Newly accessible refers to properties within the service area that are not currently connected to the LCC, but will become accessible to the County-owned sewer system when the collection lines are relocated into the roadways fronting the property. Hawaii County Code requires connection of these properties once the new collection system is constructed, and their individual wastewater systems (cesspools or septic tanks) properly removed from service. All individual cesspools in the State of Hawaii must be converted or closed by the year 2050.

Table 8-4 outlines the land use and availability characteristics considered in the analysis.

<b>Table 8-4. Land Use and Availability Criteria</b>					
<b>Criteria</b>	<b>Scoring and Definitions</b>				
	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Current zoning and land use</b>	WWTP currently permitted in zoning without Special Permit		WWTP possible onsite Special Permit required		WWTP not recommended on site
<b>Land availability</b>	Owner willing and able to sell or land currently government (state, county) owned	Subdivision required or friendly condemnation required	Difficult or lengthy approval process expected or owner willingness to sell unknown	Owner unwilling to sell or unfriendly condemnation of land required (private corporate owner)	Owner unwilling to sell or unfriendly condemnation required (private family owner)

Although public facilities are permitted in any zoning in the County of Hawaii, construction of a wastewater treatment facility requires a Special Permit within some zones. No fatal flaws were identified for the land use and availability category.



## 8.4 Criteria Weighting Factors

To consider the relative importance to the categories and criteria, each was assigned a weighting factor for the analysis. Weighting allows for appropriate consideration of all factors - both the technical and non-technical - associated with siting. Relative weighting is summarized in Table 8-5.

<b>Table 8-5. Relative Weighting Factors</b>			
<b>Category</b>	<b>Category Weight</b>	<b>Criteria</b>	<b>Criteria Weight</b>
Environmental, social and cultural	35%	Presence of and/or proximity to archaeological/cultural sites	25%
		Proximity of treatment units to existing occupied buildings	25%
		Prevailing wind direction	25%
		Biology	10%
		Visual impact	5%
		Contamination from prior land use	5%
		Previously disturbed or developed	5%
			<b>100%</b>
Location and site characteristics	35%	Parcel size	25%
		Soils type	25%
		Topography	15%
		Proximity to water well	10%
		Presence of lava tubes	8%
		Proximity to surface water, intermittent stream or coast line	6%
		Flood control / drainage	5%
		Existing vehicle access	3%
		Power and potable water availability	3%
Collection system and service area	20%	Distance from LCC collection area	50%
		Gravity flow possible or pumping required	30%
		Number of properties newly accessible	20%
			<b>100%</b>
Land use and availability	10%	Current ownership	55%
		Current zoning and land use	45%
			<b>100%</b>

## 8.5 Raw Scores

For the nine sites identified in Figure 8-1, raw scores were assigned for each of the twenty-one criteria according to the definitions in Section 8.3. The results are presented in Table 8-6.

Table 8-6. Alternatives Analysis – Raw Scores										
Category	Criteria	Site Raw Score								
		1	2	3	4	5	6	7	8	9
Environmental, social and cultural	Presence of and/or proximity to archaeological/cultural sites	5	1	2	3	3	3	4	3	3
	Proximity of treatment units to existing occupied buildings	3	3	5	5	5	5	5	5	5
	Prevailing wind direction	5	5	5	5	5	5	5	5	5
	Biology	3	3	3	3	3	3	3	3	3
	Visual impact	3	3	3	5	5	5	3	3	3
	Contamination from prior land use	3	1	3	1	3	3	3	3	3
	Previously disturbed or developed	5	5	5	3	3	3	5	5	5
Location and site characteristics	Parcel size <sup>a</sup>	0	5	0	5	5	5	5	5	5
	Soils type	5	1	1	3	5	1	5	5	5
	Topography	3	5	3	5	3	5	3	3	5
	Proximity to water well <sup>b</sup>	0	5	5	3	5	5	5	5	5
	Presence of lava tubes	1	1	3	3	3	3	3	3	3
	Proximity to surface water, intermittent stream or coast line	5	5	5	5	3	5	5	1	5
	Flood control / drainage	3	3	3	3	3	1	3	3	3
	Existing vehicle access	5	5	2	2	2	5	5	5	2
Power and potable water availability	3	3	3	1	1	1	3	3	1	
Collection system and service area	Distance from LCC collection area	5	5	4	3	3	2	5	4	3
	Gravity flow possible or pumping required	5	5	5	5	1	1	5	5	5
	Number of properties newly accessible	3	3	3	3	3	3	3	3	3
Land use and availability	Current zoning and land use	3	3	3	3	3	3	3	3	3
	Current ownership	5	5	3	3	5	5	4	4	4
<b>Raw score totals (maximum possible = 105)</b>		<b>FF</b>	<b>75</b>	<b>FF</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>85</b>	<b>79</b>	<b>79</b>

<sup>a</sup> Fatal flaw condition for Sites 1 and 3.

<sup>b</sup> Fatal flaw condition for Site 1.

As indicated in Table 8-6, fatal flaw conditions were identified for Site 1 (due to both parcel size and proximity to a drinking water well) and Site 3 (due to parcel size). These two sites were removed from further analysis.

## 8.6 Weighted Analysis

The weighted analysis is presented in Table 8-7.

Table 8-7. Alternatives Analysis – Weighted Scoring										
Category	Criteria	Site Weighted Score								
		1	2	3	4	5	6	7	8	9
Environmental, social and cultural	Presence of and/or proximity to archaeological/cultural sites		0.25		0.75	0.75	0.75	1.00	0.75	0.75
	Proximity of treatment units to existing occupied buildings		0.75		1.25	1.25	1.25	1.25	1.25	1.25
	Prevailing wind direction		1.25		1.25	1.25	1.25	1.25	1.25	1.25
	Biology		0.30		0.30	0.30	0.30	0.30	0.30	0.30
	Visual impact		0.15		0.25	0.25	0.25	0.15	0.15	0.15
	Contamination from prior land use		0.05		0.05	0.15	0.15	0.15	0.15	0.15
	Previously disturbed or developed		0.25		0.15	0.15	0.15	0.25	0.25	0.25
Location and site characteristics	Parcel size <sup>a</sup>		1.25		1.25	1.25	1.25	1.25	1.25	1.25
	Soils type		0.25		0.75	1.25	0.25	1.25	1.25	1.25
	Topography		0.75		0.75	0.45	0.75	0.45	0.45	0.75
	Proximity to water well <sup>b</sup>		0.50		0.30	0.50	0.50	0.50	0.50	0.50
	Presence of lava tubes		0.08		0.24	0.24	0.24	0.24	0.24	0.24
	Proximity to surface water, intermittent stream or coast line		0.30		0.30	0.18	0.30	0.30	0.18	0.30
	Flood control / drainage		0.15		0.15	0.15	0.05	0.15	0.15	0.15
	Existing vehicle access		0.15		0.06	0.06	0.15	0.15	0.15	0.06
Power and potable water availability		0.09		0.03	0.03	0.03	0.09	0.09	0.03	
Collection system and service area	Distance from LCC collection area		2.50		1.50	1.50	1.00	2.50	2.00	1.50
	Gravity flow possible or pumping required		1.50		1.50	0.30	0.30	1.50	1.50	1.50
	Number of properties newly accessible		0.60		0.60	0.60	0.60	0.60	0.60	0.60
Land use and availability	Current zoning and land use		1.35		1.35	1.35	1.35	1.35	1.35	1.35
	Current ownership		2.75		1.65	2.75	2.75	2.20	2.20	2.20
<b>Overall weighted totals (maximum possible = 5)</b>		<b>FF</b>	<b>3.61</b>	<b>FF</b>	<b>3.76</b>	<b>3.76</b>	<b>3.46</b>	<b>4.33</b>	<b>4.06</b>	<b>4.10</b>

<sup>a</sup> Fatal flaw condition for Sites 1 and 3.

<sup>b</sup> Fatal flaw condition for Site 1.

## 8.7 Results

The results of the analysis are presented in Table 8-8. Two sites were identified as having fatal flaws and the remaining seven were ranked in accordance with the overall weighted score.

<b>Rank</b>	<b>Site</b>
1	7
2	9
3	8
4	5
5	4
6	2
7	6
FF	1
FF	3

The top three sites for the Pahala WWTP are:

1. Site 7 (TMK 9-6-002:18)
2. Site 9 (TMK 9-6-002:49)
3. Site 8 (TMK 9-6-002:21)

Site 7 is preferred to the second and third ranked sites for the following reasons:

- A preliminary Archaeological Inventory Survey has been performed for Site 7, indicating no unmitigable cultural sites on the property.
- Site 8 is bisected by an intermittent stream bed, and a steep gulch borders the property to the west.
- Site 7 is closer to the existing collection area than both Site 8 and Site 9.
- Power and potable water are more readily available to Site 7. Site 9 will require the utilities to cross the highway.

## 8.8 Conclusion

Based on the analysis, Site 7 (TMK 9-6-002:18) was selected as the preferred location for the Pahala WWTP.

## Section 9

# References

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## Appendix A: Cost Estimates

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County of Hawaii Department of Environmental Management

Pahala WWTP

Preliminary Design - Order of Magnitude Construction Cost

Electrical and instrumentation	\$	1,976,000
Headworks	\$	906,000
Odor Control	\$	412,000
Lagoons	\$	2,222,000
Wetland	\$	611,000
Land Application	\$	925,000
On-site improvements	\$	6,325,000
Off-site improvements	\$	1,223,000
<b>Total Estimated Construction Cost</b>	<b>\$</b>	<b>14,600,000</b>

Description	Quantity	Units	Unit Cost	Extension
Clear and grub	18.0	AC	\$5,995	\$107,910
BMP's	18.0	AC	\$13,080	\$235,440
Archaeological Monitoring	18	AC	\$2,507	\$45,126
Earthwork	52,000	CY	\$25	\$1,300,000
Sewerline extension	700	LF	\$218	\$152,600
Operations building	1,500	SF	\$500	\$750,000
Generator and tank	1	LS	\$250,000	\$250,000
Fencing	3,200	LF	\$164	\$523,200
Paving	38,000	SY	\$55	\$2,071,000
Off-site waterline	2,500	LF	\$327	\$817,500
On-site waterline	900	LF	\$164	\$147,150
On-site fireline	750	LF	\$218	\$163,500
Off-site overhead electrical	1	LS	\$50,000	\$50,000
Trees (landscaping & Irrigation)	10	EA	\$2,500	\$25,000
Headworks	1	EA	\$501,339	\$501,339
Odor control unit	1	EA	\$329,797	\$329,797
Lagoons	1	LS	\$1,816,902	\$1,816,902
Constructed Wetland	1	LS	\$489,000	\$489,000
Chlorine contact tank	1	LS	\$150,000	\$150,000
Chlorine feed system	1	LS	\$26,577	\$26,577
Land Application piping	2,700	LF	\$125	\$337,500
Land Application trees/ground cover	5.5	AC	\$5,000	\$27,500
Effluent flow meter and sampler	1	LS	\$154,780	\$154,780
			<b>Subtotal</b>	\$10,472,000
			On-site electrical 15%	\$1,570,800
			Mobilization/Demobilization 1.0%	\$104,720
			<b>Total</b>	\$12,148,000
			Contingency 20%	\$2,430,000
<b>TOTAL ORDER OF MAGNITUDE CONSTRUCTION COST</b>				<b>\$14,600,000.00</b>

County of Hawaii Department of Environmental Management

Pahala WWTP

Preliminary Options Assessment - Capital Costs

Wetlands

Description	Quantity	Units	Unit Cost	Extension
linear	13,100	SF	\$4	\$52,400
gravel	1,000	CY	\$50	\$50,000
pipng	500	LF	\$100	\$50,000
Effluent Structure	1	EA	\$50,000	\$50,000
Standpipe	1	EA	\$25,000	\$25,000
plantings	13,100	sf	\$20	\$262,000
			<b>Subtotal</b>	<b>\$489,000</b>



County of Hawaii Department of Environmental Management

Pahala WWTP  
Options Assessment Cost Summary

Capital Costs

Option No.	Treatment	Disposal	Recycling	Capital Cost (\$M)						Total (\$M)			
				Lagoons	R-1	Limit of TT	Disposal	Reservoir	Diurnal Tank		R-1 Pumps	R-1 Pipelines	
1	Aerated lagoons/wetland/disinfection	Land application	None	10.8				3.8					14.6
2	MBR (R-1)	Land application	None		14.6			3.8					18.4
3	MBR (R-1)	Land application	Seasonal (25% of total annual flow)		14.6			3.8					20.2
4	MBR (R-1)	Land application	Annual storage reservoir (100% of flow)		14.6			3.8	6.1				30.4
5	Limit of treatment technology	Land application	Seasonal (25% of total annual flow)			20.4		3.8					26.0

Annual O&M Costs

No.	Treatment	Disposal	Recycling	Annual O&M Costs (\$)						Total
				Labor	Electricity	Chemicals	Maintenance	Sludge Mgmt		
1	Aerated lagoons/wetland/disinfection	Land application	None	\$42,000	\$118,000	\$12,000	\$54,000	\$10,000	\$236,000	
2	MBR (R-1)	Land application	None	\$582,000	\$345,000	\$10,000	\$73,000	\$42,000	\$1,052,000	
3	MBR (R-1)	Land application	Seasonal (25% of total annual flow)	\$582,000	\$348,000	\$10,000	\$73,000	\$42,000	\$1,055,000	
4	MBR (R-1)	Land application	Annual storage reservoir (100% of flow)	\$582,000	\$356,000	\$10,000	\$73,000	\$42,000	\$1,063,000	
5	Limit of treatment technology	Land application	Seasonal (25% of total annual flow)	\$874,000	\$348,000	\$35,000	\$102,000	\$62,000	\$1,421,000	

Annual Recycled Water Sales

No.	Treatment	Disposal	Recycling	Annual R-1 Water Sales	
				High Price	Low Price
1	Aerated lagoons/wetland/disinfection	Land application	None	\$0	\$0
2	MBR (R-1)	Land application	None	\$0	\$0
3	MBR (R-1)	Land application	Seasonal (25% of total annual flow)	\$17,000	\$9,000
4	MBR (R-1)	Land application	Annual storage reservoir (100% of flow)	\$68,000	\$38,000
5	Limit of treatment technology	Land application	Seasonal (25% of total annual flow)	\$17,000	\$9,000

Equipment Replacement at 20-Years

No.	Treatment	Disposal	Recycling	Equipment Replacement
1	Aerated lagoons/wetland/disinfection	Land application	None	\$2,693,000
2	MBR (R-1)	Land application	None	\$3,653,000
3	MBR (R-1)	Land application	Seasonal (25% of total annual flow)	\$3,653,000
4	MBR (R-1)	Land application	Annual storage reservoir (100% of flow)	\$3,653,000
5	Limit of treatment technology	Land application	Seasonal (25% of total annual flow)	\$5,097,000

**County of Hawaii Department of Environmental Management  
Pahala WWTP  
Preliminary Options Assessment - Capital Costs**

**Common Capital Inputs**

Current ENRCCI:	10870
Area markup factor:	30%
Contingency factor:	20%
Project soft costs factor:	25%

**Lagoon-Wetland Treatment**

Description	Quantity	Units	Unit Cost	Extension
Clear and grub	8	AC	\$15,000	\$120,000
BMPs	8	AC	\$13,000	\$104,000
Earthwork	9,500	CY	\$25	\$237,500
Sewer extension	700	LF	\$160	\$112,000
Headworks	1	EA	\$500,000	\$500,000
Lagoons	1	LS	\$1,800,000	\$1,800,000
Wetlands	1	LS	\$350,000	\$350,000
Chlorine contact tank	1	LS	\$100,000	\$100,000
Chlorine feed system	1	LS	\$30,000	\$30,000
Operations building	1,500	SF	\$500	\$750,000
Generator and tank	1	LS	\$250,000	\$250,000
Fencing	1,500	LF	\$100	\$150,000
Paving	15,000	SY	\$55	\$825,000
Water line extension	1,500	LF	\$160	\$240,000
Yard piping	1	LS	\$200,000	\$200,000
Miscellaneous site work	1	LS	100,000	\$100,000
HELCO power	1	LS	50,000	\$50,000
Hawaiian Telcom	1	LS	20,000	\$20,000
Archeological monitoring	8	AC	2,500	\$20,000
Visual buffer trees and irrigation	10	EA	2,500	\$25,000

Subtotal				\$5,983,500
Electrical and instrumentation			20%	\$1,196,700
Total construction				\$7,180,200
Contingency				\$1,436,040
Total construction				\$8,616,240
Project soft costs				\$2,154,060
<b>Total project cost:</b>				<b>\$10.770 million</b>

**Land Application**

Description	Quantity	Units	Unit Cost	Extension
Clear and grub	6	AC	\$15,000	\$82,500
BMPs	6	AC	\$13,000	\$71,500
Earthwork	33,500	CY	\$25	\$837,500
Fencing	1,700	LF	\$100	\$170,000
Paving	23,000	SY	\$30	\$690,000
Yard piping	3,500	LF	\$160	\$560,000
Planting	6	AC	10,000	\$60,000
Effluent flow meter and sampler	1	LS	50,000	\$50,000
Archeological monitoring	6	AC	2,500	\$15,000

Subtotal				\$2,536,500
Electrical and instrumentation			0%	\$0
Total construction				\$2,536,500
Contingency				\$507,300
Total construction				\$3,043,800
Project soft costs				\$760,950
<b>Total project cost:</b>				<b>\$3.805 million</b>

**R-1 Treatment**

Capacity:	0.19 mgd
Mainland cost at current ENRCCI:	\$39.44 /gpd
Local construction cost:	\$51.27 /gpd
Construction estimate:	\$9.7 million
Contingency:	\$1.9 million
Total construction cost:	\$11.7 million
Project soft costs:	\$2.9 million
<b>Total project cost:</b>	<b>\$14.6 million</b>

from R-1 WWRF capital regression.  $y=24.003*(x^{-0.299})$

**Limit of Treatment Technology**

ENRCCI of estimate:	8952
10 mgd WWTP cost:	\$13.80 /gpd
10 mgd WWTP cost at current ENRCCI:	\$16.76 /gpd
Local 10 mgd WWTP cost:	\$21.78 /gpd
Small flow escalation:	\$71.54 /gpd
Construction estimate:	\$13.6 million
Contingency:	\$2.7 million
Total construction cost:	\$16.3 million
Project soft costs:	\$4.1 million
<b>Total project cost:</b>	<b>\$20.4 million</b>

$y=43.47x^{-0.3}$  Per WERF analysis. BNR + advanced nutrient removal

**Seasonal Storage Reservoir**

Volume:	124 ac-ft
Mainland construction cost:	\$25,000 /ac-ft
Subtotal:	\$3.1 million
Local construction cost:	\$4.0 million
Contingency:	\$0.8 million
Total construction cost:	\$4.8 million
Project soft costs:	\$1.2 million
<b>Total project cost:</b>	<b>\$6.1 million</b>

**Diurnal R-1 Tank - Seasonal Program**

Volume:	0.19 mgal
Local construction cost:	\$3.00 /gallon
Subtotal:	\$0.6 million
Contingency:	\$0.1 million
Total construction cost:	\$0.7 million
Project soft costs:	\$0.1 million
<b>Total project cost:</b>	<b>\$0.8 million</b>

1 peak day

**Diurnal R-1 Tank - Reservoir Program**

Volume:	0.77 mgal
Local construction cost:	\$3.00 /gallon
Subtotal:	\$2.3 million
Contingency:	\$0.5 million
Total construction cost:	\$2.8 million
Project soft costs:	\$0.69 million
<b>Total project cost:</b>	<b>\$3.5 million</b>

1 peak day

**R-1 Delivery Pumps - Seasonal Program**

Peak day flow	0.19 mgal
Delivery time:	8 hours
Pumping capacity:	396 gpm
Mainland construction cost @ ENRCCI 4500:	\$100,000
Current mainland construction cost:	\$242,000
Local construction cost:	\$315,000
Contingency:	\$63,000
Total construction cost:	\$378,000
Project soft costs:	\$94,500
<b>Total project cost:</b>	<b>\$0.5 million</b>

**R-1 Delivery Pumps - Reservoir Storage**

Peak day flow	0.77 mgal
Delivery time:	8 hours
Pumping capacity:	1604 gpm
Mainland construction cost @ ENRCCI 4500:	\$200,000
Current mainland construction cost:	\$483,000
Local construction cost:	\$628,000
Contingency:	\$125,600
Total construction cost:	\$753,600
Project soft costs:	\$188,400
<b>Total project cost:</b>	<b>\$1.0 million</b>

**R-1 Pipelines - Seasonal Program**

Peak delivery rate:	396 gpm
Pipeline diameter:	6 inches
Hawaii construction cost:	\$25 /in-ft
Estimated length:	2000 feet
Local construction cost:	\$300,000
Contingency:	\$60,000
Total construction cost:	\$360,000
Project soft costs:	\$90,000
<b>Total project cost:</b>	<b>\$0.5 million</b>

**R-1 Pipelines - Reservoir Storage**

Peak delivery rate:	1604 gpm
Pipeline diameter:	10 inches
Hawaii construction cost:	\$25 /in-ft
Estimated length:	4000 feet
Local construction cost:	\$1,000,000
Contingency:	\$200,000
Total construction cost:	\$1,200,000
Project soft costs:	\$300,000
<b>Total project cost:</b>	<b>\$1.5 million</b>

County of Hawaii Department of Environmental Management

Pahala WWTP  
Preliminary Options Assessment  
O&M Costs

**Common O&M Inputs**

Labor cost:	\$100	/hr (loaded)
FTE effective labor:	1,560	hours/year
Chlorine tab cost:	\$4	/lb
Alum cost:	\$2	/lb
Electricity cost:	\$0.35	/kWh
Maintenance cost:	2%	/year of equipment capital
Sludge management cost:	\$1,500	/dry ton, dewatering, hauling, tip fee
Average flow:	0.19	mgd

**Lagoon Treatment/Wetlands/Disinfection**

**Labor**

Normal requirement:	1	visit/week
Operators/visit:	1	
Time per visit:	8	hours/visit
Weekly labor hours:	8	hours/week
Annual labor hours:	416	hours/year
FTEs:	0.3	FTEs
Annual labor cost:	\$41,600	/yr

**Electricity**

Load	Equiv hp	Percent	kWhr/mo	\$/month
Aerators	50	100%	26,845	\$9,396
Screens	2	10%	107	\$38
Chlorine pumps	0.5	30%	81	\$28
Effluent pumps	2	100%	1,074	\$376
Totals				\$9,837

Annual power cost: \$118,049  
Annual power consumption: 337283 kWh/yr

**Chemicals**

Chlorine dose:	5	mg/L
Daily use:	8	lbs/d
Annual use:	2892	lbs/d
Annual cost:	\$11,568	/yr

**Maintenance**

Equipment cost:	\$2,692,575	(assume 25% of capital cost)
Annual maintenance:	\$53,852	/yr

**Sludge Management**

Production rate:	0.1	dry tons/mgal
Annual production:	6.935	/dry tons
Sludge management cost:	\$10,403	/year (deferred for 20 years)

**R-1 Treatment**

**Labor**

Normal requirement:	7	visits/week
Operators/visit:	2	
Time per visit:	8	hours/visit
Weekly labor hours:	112	hours/week
Annual labor hours:	5824	hours/year
FTEs:	3.7	FTEs
Annual labor cost:	\$582,400	

**Electricity**

Daily power use: 2,700 kWh/d  
 Annual power use: 985,500 kWh/yr  
 Annual power cost: \$344,925/yr

**Chemicals**

Annual chemical cost: \$10,000

**Maintenance**

Equipment cost: \$3,652,973 (assume 25% of capital cost)  
 Annual maintenance: \$73,059/yr

**Sludge Management**

Sludge production: 0.4 dry tons/mgal  
 Annual production: 28 /dry tons  
 Sludge management cost: \$41,610/year

**Limit of Treatment Technology****Labor**

Normal requirement: 7 visits/week  
 Operators/visit: 3  
 Time per visit: 8 hours/visit  
 Weekly labor hours: 168 hours/week  
 Annual labor hours: 8736 hours/year  
 FTEs: 5.6 FTEs  
 Annual labor cost: \$873,600

**Electricity**

Daily power use: 2,700 kWh/d  
 Annual power use: 985,500 kWh/yr  
 Annual power cost: \$344,925/yr

**Chemicals**

Alum dose: 30 mg/L  
 Alum use: 48 lbs/d  
 Alum cost: \$34,703/yr

**Maintenance**

Equipment cost: \$5,097,397 (assume 25% of capital cost)  
 Annual maintenance: \$101,948/yr

**Sludge Management**

Sludge production: 0.6 dry tons/mgal  
 Annual production: 42 /dry tons  
 Sludge management cost: \$62,415/year

**Seasonal Water Recycling (25%)**

Load	Equiv hp	Percent	kWhr/mo	\$/month
R-1 delivery pumps	5	25%	671	\$235
Totals				\$235

Annual power cost: \$2,819

Annual power consumption: 8054 kWh/yr

**Annual Water Recycling (100%)**

Load	Equiv hp	Percent	kWhr/mo	\$/month
R-1 delivery pumps	5	100%	2,685	\$940
Totals				\$940

Annual power cost: \$11,275

Annual power consumption: 32214 kWh/yr

County of Hawaii Department of Environmental Management  
Pahala WWTP

R-1 Sales Assessment

**Avoided Cost of Pumping Irrigation Water**

Assume pumping from basal lens

Elevation at WWTP:	750	feet MSL
Flow rate:	1000	gpm
	2.2	cfs
Pump efficiency:	85%	
Motor efficiency:	90%	
Power cost:	\$0.35	/kWh
BHP:	223	hp
Motor draw:	185	kW
Unit volume:	1	mgal
Time to pump unit vol:	16.7	hours
Power to pump unit vol:	3080	kWh
Cost to pump unit vol:	\$1,078	

**Recycled Water Pricing**

High price:	90%	of avoided cost
Low price:	50%	of avoided cost

**Recycled Water Sales**

High price:	\$970	/mgal
Low price:	\$539	/mgal

**Seasonal Recycling Sales**

Annual reuse volume:	17	mgal
High price sales:	\$16,661	/year
Low price sales:	\$9,256	/year

**100% Recycling Sales**

Annual reuse volume:	70	mgal
High price sales:	\$67,987	/year
Low price sales:	\$37,770	/year

**County of Hawaii, DEM  
Pahala WWTP Options Assessment  
Alternatives Net Present Value Analysis**

	County of Hawaii, DEM		Sensitivity Adjustments (%)			Results			
	Agency:	Pahala WWTP Options Assessment	Risk Premium	Benefits	Capital Costs	Other Costs	Capital Cost	30-year NPV	Benefit over Status Quo
Alternative 1	Lagoons / wetlands/ disinfection / land application						\$14,600,000	(\$21,196,947)	
Alternative 2	R-1 treatment / land application						\$18,400,000	(\$42,993,152)	(\$21,796,205)
Alternative 3	R-1 treatment / seasonal recycling (25%)						\$20,200,000	(\$44,496,467)	(\$23,299,520)
Alternative 4	R-1 treatment / annual storage res (100%)						\$30,400,000	(\$53,785,222)	(\$32,588,276)
Alternative 5	Limit of treatment technology / 25% recycle						\$26,000,000	(\$58,961,593)	(\$37,764,647)
Alternative 6									
Alternative 7									
Alternative 8									
Alternative 9									
Alternative 10									
Alternative 11									
Alternative 12									

Year of analysis: 2017  
 Escalation rate: 3.20%  
 Discount rate: 5.50%

**Make entries in yellow cells only**

Select one  
 All entries in dollars  
 All entries in thousands of dollars

Note: "Status quo" refers to Alternative 1



County of Hawaii Department of Environmental Management

Pahala WWTP  
 Preliminary Options Assessment  
 Operator Requirement Evaluation

No.	Treatment	Disposal	Recycling
1	Aerated lagoons/disinfection	Land application	None
2	MBR (R-1)	Land application	None
3	MBR (R-1)	Land application	Seasonal (25% of total annual flow)
4	MBR (R-1)	Land application	Annual storage reservoir (100% of flow)
5	Limit of treatment technology	Land application	Seasonal (25% of total annual flow)

Criteria per HAR 11-61	Option				
	1	2	3	4	5
Population served	1	1	1	1	1
Design average flow	1	1	1	1	1
Effluent discharge	2	2	6	6	6
Variation on raw wastes	0	0	0	0	0
Pretreatment	5	10	10	10	10
Primary treatment	0	0	0	0	0
Secondary treatment	8	15	15	15	20
Advanced waste treatment	0	12	12	12	22
Additional treatment processes	7	7	7	7	7
Solids handling	0	19	19	19	19
Disinfection	5	10	10	10	10
Laboratory control bacteriological	0	0	0	0	0
Laboratory control chemical/physical	0	0	0	0	0
Total points	29	77	81	81	96
WWTP Classification per 11-61	I	IV	IV	IV	IV

County of Hawaii Department of Environmental Management  
Pahala WWTP  
Water Recycling Assessments

**Seasonal Recycling with Disposal**

Average flow: 0.19 mgd  
Irrigated acreage: 6.2 acres

Month	Days	WW Flow (mgal)	Irrig Demand		Disposal (mgal)
			(gpd/ac)	(mgal)	
Jan	31	5.9	0	0.0	5.9
Feb	28	5.3	0	0.0	5.3
Mar	31	5.9	0	0.0	5.9
Apr	30	5.7	644	1.2	4.5
May	31	5.9	2,244	4.3	1.6
Jun	30	5.7	3,043	5.7	0.0
Jul	31	5.9	1,348	2.6	3.3
Aug	31	5.9	1,452	2.8	3.1
Sep	30	5.7	334	0.6	5.1
Oct	31	5.9	0	0.0	5.9
Nov	30	5.7	0	0.0	5.7
Dec	31	5.9	0	0.0	5.9
Totals	365	69.35		17	52

Recycling efficiency: 25%

**Recycling with Annual Storage Reservoir**

Average flow: 0.19 mgd  
Irrigated acreage: 25.3 acres  
Reservoir surface area: 6.4 acres  
Reservoir pan coefficient: 0.7

Month	Days	WW Flow (mgal)	Irrig Demand		WW in (mgal)	Precipitation in		Evap out (mgal)	Delta Storage (mgal)	Cumulative Storage		Water Depth (feet)
			(gpd/ac)	(mgal)		(inches)	(mgal)			(mgal)	(ac-ft)	
Jan	31	5.9	0	0.0	5.9	5.98	1.0	3.2	6.4	28.1	86.3	13.5
Feb	28	5.3	0	0.0	5.3	3.77	0.7	3.2	5.4	33.5	102.9	16.1
Mar	31	5.9	0	0.0	5.9	5.45	0.9	3.5	6.2	39.8	122.0	19.1
Apr	30	5.7	644	4.9	0.8	3.23	0.6	3.8	0.7	40.5	124.2	19.4
May	31	5.9	2,244	17.6	-11.7	1.94	0.3	3.9	0.7	28.4	87.3	13.6
Jun	30	5.7	3,043	23.1	-17.4	1.56	0.3	4.2	-12.1	10.6	32.5	5.1
Jul	31	5.9	1,348	10.6	-4.7	3.27	0.6	4.5	-4.9	5.7	17.5	2.7
Aug	31	5.9	1,452	11.4	-5.5	3.08	0.5	4.4	-5.7	0.0	0.0	0.0
Sep	30	5.7	334	2.5	3.2	3.6	0.6	3.9	3.1	3.1	9.6	1.5
Oct	31	5.9	0	0.0	5.9	3.98	0.7	3.5	6.0	9.1	27.9	4.4
Nov	30	5.7	0	0.0	5.7	6.7	1.2	3.1	6.3	15.4	47.3	7.4
Dec	31	5.9	0	0.0	5.9	5.82	1.0	3.2	6.3	21.7	66.7	10.4
Totals	365	69.35		70		48.4	8.4		7.7	0.0		

Recycling efficiency: 101%

Peak demand: 23.1 mgal/mo  
0.77 mgd

Max Volume: 40 Mgal  
124 ac ft

## **Appendix B: Collection System Plan**

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**FUKUNAGA & ASSOCIATES, INC.**  
CONSULTING ENGINEERS

## MEMORANDUM

TO: Michelle Sorensen, Brown and Caldwell  
Craig Lekven, Brown and Caldwell

FROM: Andrew Amuro

DATE: June 20, 2018

SUBJECT: Pahala Collection System Description  
County of Hawaii

### 1. GENERAL PROJECT DESCRIPTION

This County of Hawaii (COH) is scheduled to close two large capacity cesspools (LCCs) in the town of Pahala on the southeast side of the Big Island. To accomplish the closure, the COH has tasked Brown and Caldwell (B&C) with designing a wastewater treatment plant (WWTP) to serve the properties impacted by the LCC closure. Fukunaga and Associates, Inc. (FAI) has been tasked with designing the collection system to convey the wastewater from the impacted properties to the proposed WWTP. The collection system and properties to be served is shown on Figure 1. The County will be the owner of the collection system; therefore, the sewer system must meet County standards and must be accessible for maintenance. Preference is to construct sewers within the County right-of-way as much as possible unless other factors make placing the pipes within easements much more practical from economic and engineering standpoints. In addition, the County will not allow construction of sewers in smaller residential “backyard” easements. These easements are difficult to access for maintenance and can also hinder the home owner’s ability to enjoy or benefit from their property as they see fit.

The focus of the project is to close the LCCs as expediently and economically as possible; however, the COH desires to eventually expand the wastewater system of this project to service the entire community of Pahala. Therefore, the collection system will be sized to accommodate the anticipated wastewater from the entire community to the extent that can be reasonably predicted at this early stage in the system development. The benefit of flexibility for future plans outweighs the cost of providing larger pipes at this time.

## 2. PROJECT PHASING

The project will be implemented in two phases to expedite the LCC closure. The collection system phasing is indicated on Figure 2 and 3.

Phase 1 consists of the portions of the collection system required to divert wastewater from the LCCs to the proposed WWTP. To accomplish this as quickly as possible, the existing collection system will be intercepted before entering the LCCs and diverted into the new Phase 1 collection system. There will be a portion of the sewer within an existing roadway (Pikake St. extension) on private property owned by Edmund Olsen. The County will obtain an easement for the approximately 350 linear feet of sewer within this private road. The LCC closures will be part of the Phase 1 work.

Phase 2 will consist of the necessary sewers and pumps needed to de-commission the aging plantation collection system and construct a municipal sewer system that meets current County standards. The plantation system crosses through private properties and under some residences, making the system difficult to access for maintenance. This phase will place the new sewers mostly within the County right-of-way for ease of access and connect the individual properties impacted by the LCC closures to these sewers. There will be an 1,100 linear feet portion of the sewer that follows the existing plantation sewer route within an industrial area between Ilima and Maile Streets. The property at TMK 9-6-005:036 is owned by Edmund Olsen and leased to M L Macadamia Orchards. The County will obtain an easement within this area to maintain the sewer.

## 3. TOPOGRAPHY AND SOILS

Pahala slopes down at about 6-percent from the northwest to the southeast, from an elevation of 1000 ft above mean sea level (MSL) to 800 ft MSL over a distance of 3,500 feet. A topographic map of the area is provided in Figure 4. Available information on soil condition indicates shallow soils in the residential areas over basalt. Soils as shallow as 12" are reported in some areas. The soil cover appears to get deeper in the downhill direction.

Several roads in Pahala roughly follow contour lines to maintain level or appropriately sloped grades for vehicles. This is the case for Hinano Street and Pikake Street. This results in houses on the downhill side of the roads to be several feet below the road surface while uphill houses are several feet above the road surface. The laterals coming from downhill dwellings would result in a deep gravity sewer in these areas. If it is not feasible to construct deep sewers in these streets due to unavoidable subsurface conditions or unreasonably deep pipes and manholes, an alternative such as individual pump stations or different sewerage method may be needed. A more detailed discussion of the areas requiring pumps is presented in the next section.

#### 4. PUMP STATIONS

The design of the collection system will minimize the use of pump stations as much as possible. This will serve to enhance reliability and minimize operation and maintenance costs. There is one property currently connected to the sewer system that will require a pump station. The Methodist preschool located at TMK 9-6-015:033 is located on the downhill side of Huapala Street, approximately 20 feet below the elevation of the street. It would not be practical to lower the sewer to this extent to service this property.

There are also four properties on the downhill side of Hinano Street that are connected to the sewer system that may require pumps. The intent of the design is to lower the sewer on Hinano Street to service these properties by gravity; however, the subsurface conditions will have to be verified before a final determination can be made.

There are also several newly accessible properties on Pikake Street that require pumps if the sewer is not constructed deep. Based on what has been reported of subsurface conditions at the Kau High School, it is suspected that the sewer on Pikake Street would not be able to be set low enough to serve these properties; therefore, the assumption is most of the newly accessible properties east of Pikake Street will require pumps.

#### 5. PIPE SIZING

Sewer pipe sizing is based on the flow estimates provided by B&C and a best guess of how the entire community will be eventually serviced. It is assumed that the sewer on Maile Street will eventually convey the flow from the entire community. It is also anticipated that the sewer on Pikake Street will eventually have other sewers feeding into them from surrounding areas. Similarly, for the sewers to be constructed in Phase 2, there will be surrounding areas eventually feeding into the sewers on Puahala/Kamani Streets. It is assumed future sewers would not be feeding into Huapala Street. It is assumed the areas northeast of Huapala Street can be served by the sewers system to the east; therefore, the sewer is not up-sized for future flows. A summary of the estimated pipe sizes and lengths is presented in Table 1.

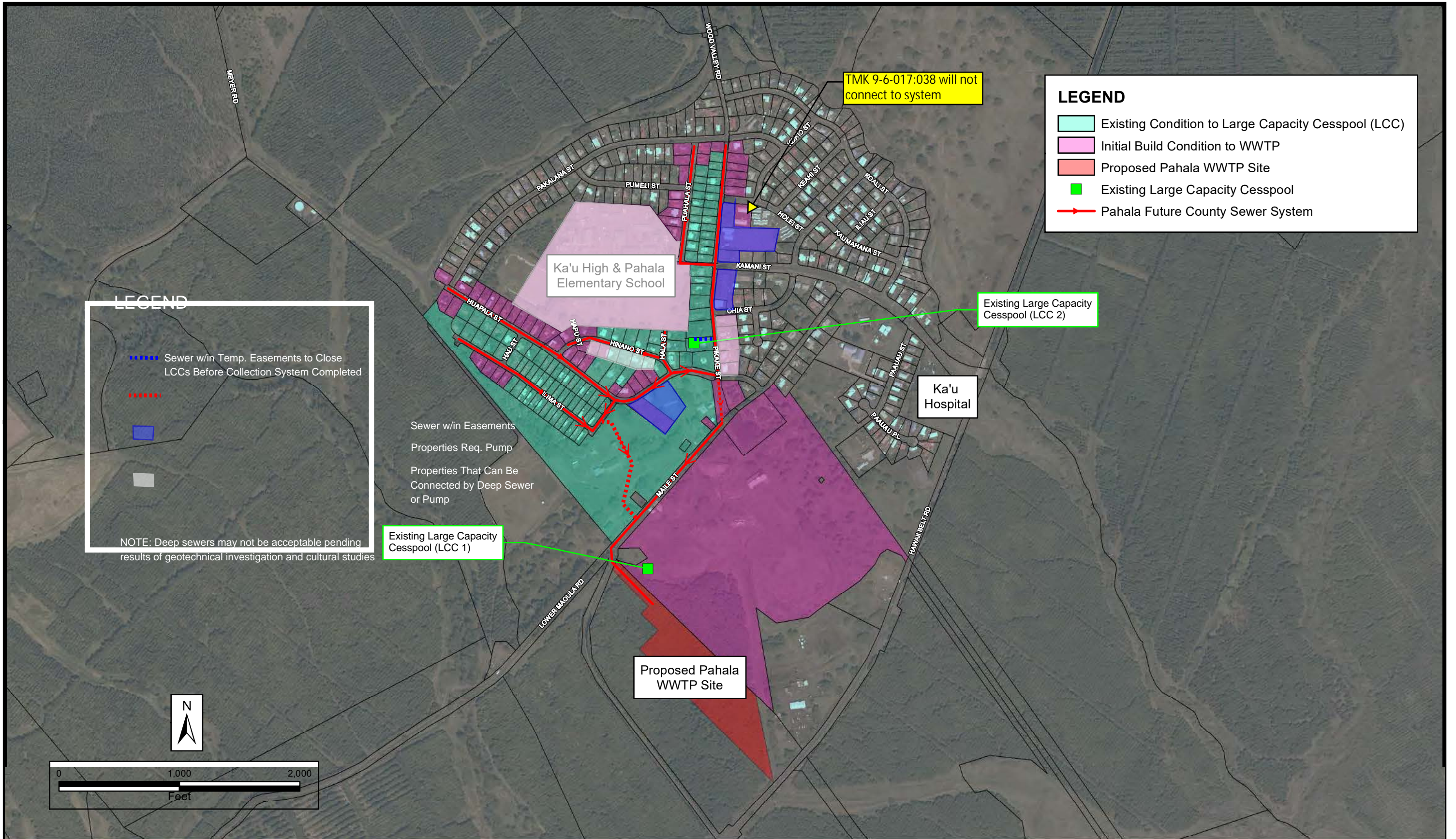
Table 1: Approximate Pipe Size and Lengths

	<b>Location</b>	<b>Start</b>	<b>End</b>	<b>Size</b>	<b>Length</b>
<b>Phase 1</b>					
Waterline	Pikake St	Pikake	WWTP	6	2200
SL A	Maile St (deep to normal)	Huapala	WWTP	16	1730
SL C1	Pikake St Ph 1	Ohia	Maile	14	780
<b>Phase 2</b>					
SL B-1	Ilima St	Huapala	Ilima	8	335
SL B-2	Huapala St	Hinano	Pikake	8	410
SL C2	Pikake St	Pakalana	Ohia	14	1569
SL D	Puahala St & Kamani St	Pakalana	Pikake	12	1150
SL E	Hinano St (deep)	Hapu	Huapala	8	700
SL F	Hala St	End	Hinano	8	250
SL G	Huapala St	Pakalana	Ilima	8	1650
SL H	Ilima St	End	Huapala	8	1750
SL I	Easement thru Olson Land	Ilima	Maile	12	875

Pipe material will be AWWA C900 PVC for corrosion resistance. Although this application is for gravity service, the thick wall C900 pressure pipe is preferred for durability in service and during installation.

## 6. COST

The 0% cost estimates for Phase 1 and Phase 2 are based on recent bid tabs. Costs from a recent project were much higher than originally anticipated. Phase 1 using recent bid cost is approximately \$4 million. Phase 2 using the same basis is \$9 million. These costs will be refined further as the design is develop.



**LEGEND**

- Existing Condition to Large Capacity Cesspool (LCC)
- Initial Build Condition to WWTP
- Proposed Pahala WWTP Site
- Existing Large Capacity Cesspool
- Pahala Future County Sewer System

**LEGEND**

- Sewer w/in Temp. Easements to Close LCCs Before Collection System Completed
- Sewer w/in Easements Properties Req. Pump
- Properties That Can Be Connected by Deep Sewer or Pump

NOTE: Deep sewers may not be acceptable pending results of geotechnical investigation and cultural studies

N

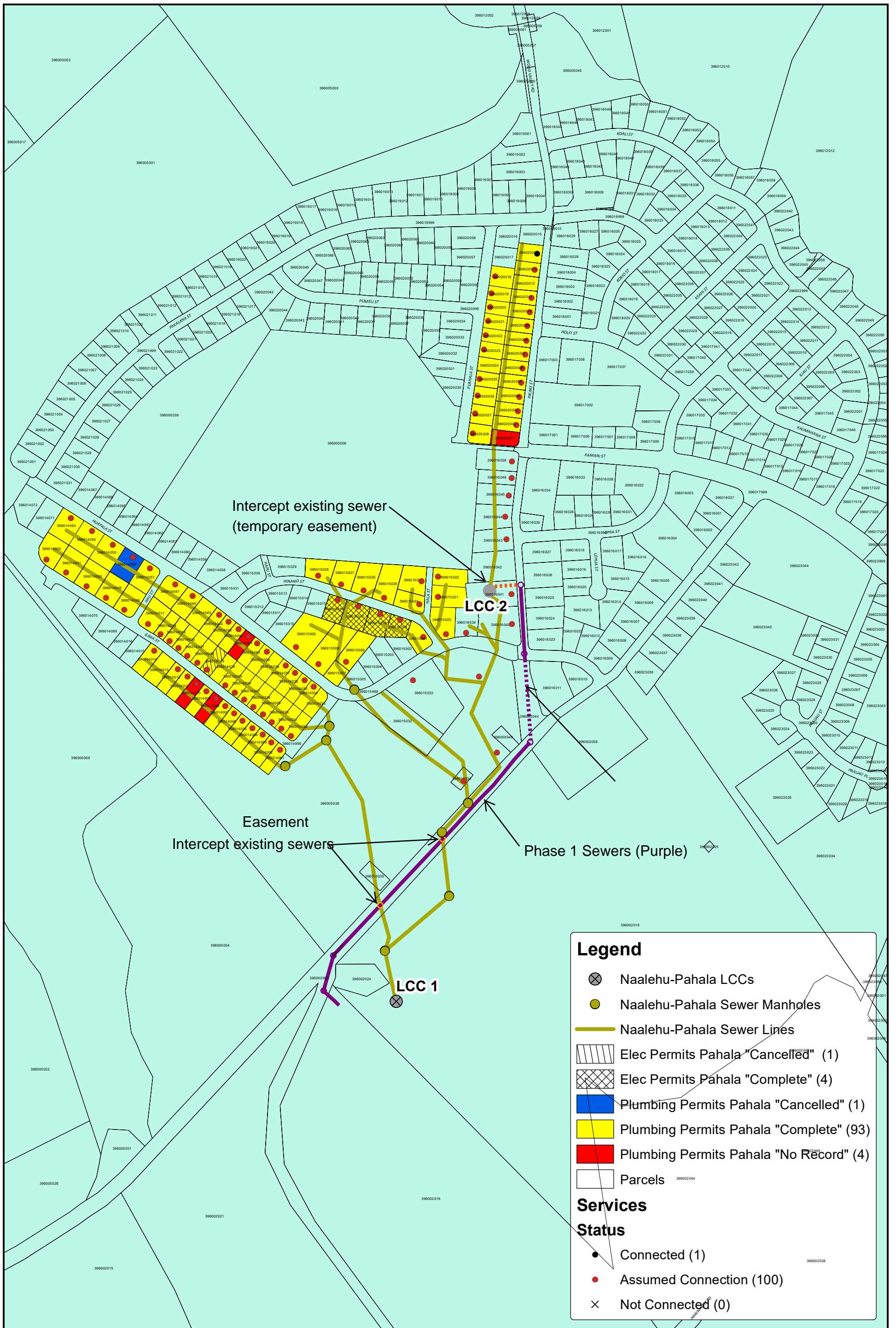
0      1,000      2,000  
Feet



SCALE: AS SHOWN  
JOB NO: 150440

PAHALA WASTEWATER TREATMENT PLANT  
PAHALA WWTP SERVICE AREA





**PERMIT STATUS**  
**Electrical (Transfer Switch & Pump) and Plumbing**  
**Pahala**

Figure 2  
 Collection System Phase 1

Oct. 05, 2016

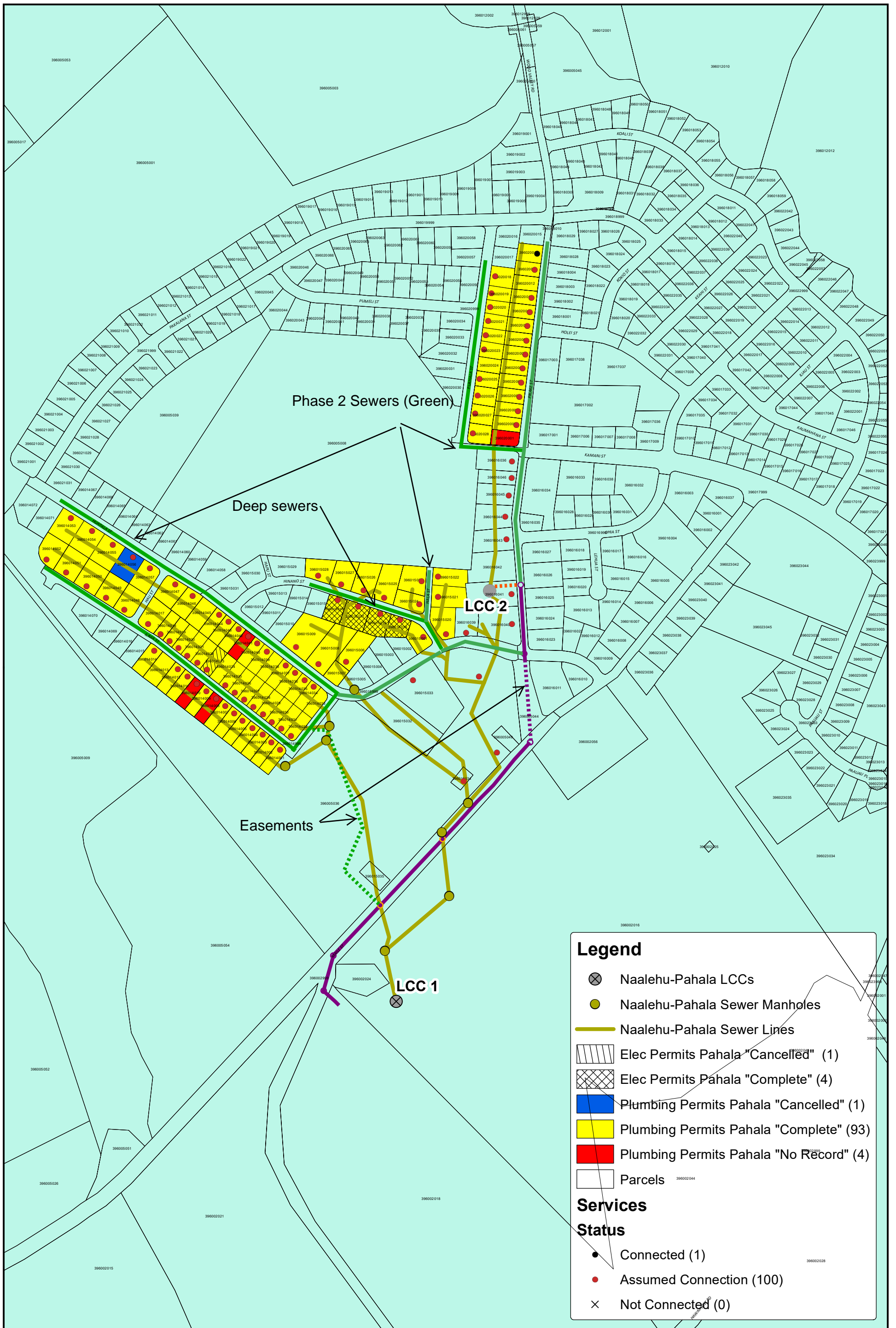
**Legend**

- ⊗ Naalehu-Pahala LCCs
- Naalehu-Pahala Sewer Manholes
- Naalehu-Pahala Sewer Lines
- ▨ Elec Permits Pahala "Cancelled" (1)
- ▩ Elec Permits Pahala "Complete" (4)
- Plumbing Permits Pahala "Cancelled" (1)
- Plumbing Permits Pahala "Complete" (93)
- Plumbing Permits Pahala "No Record" (4)
- Parcels

**Services Status**

- Connected (1)
- Assumed Connection (100)
- × Not Connected (0)

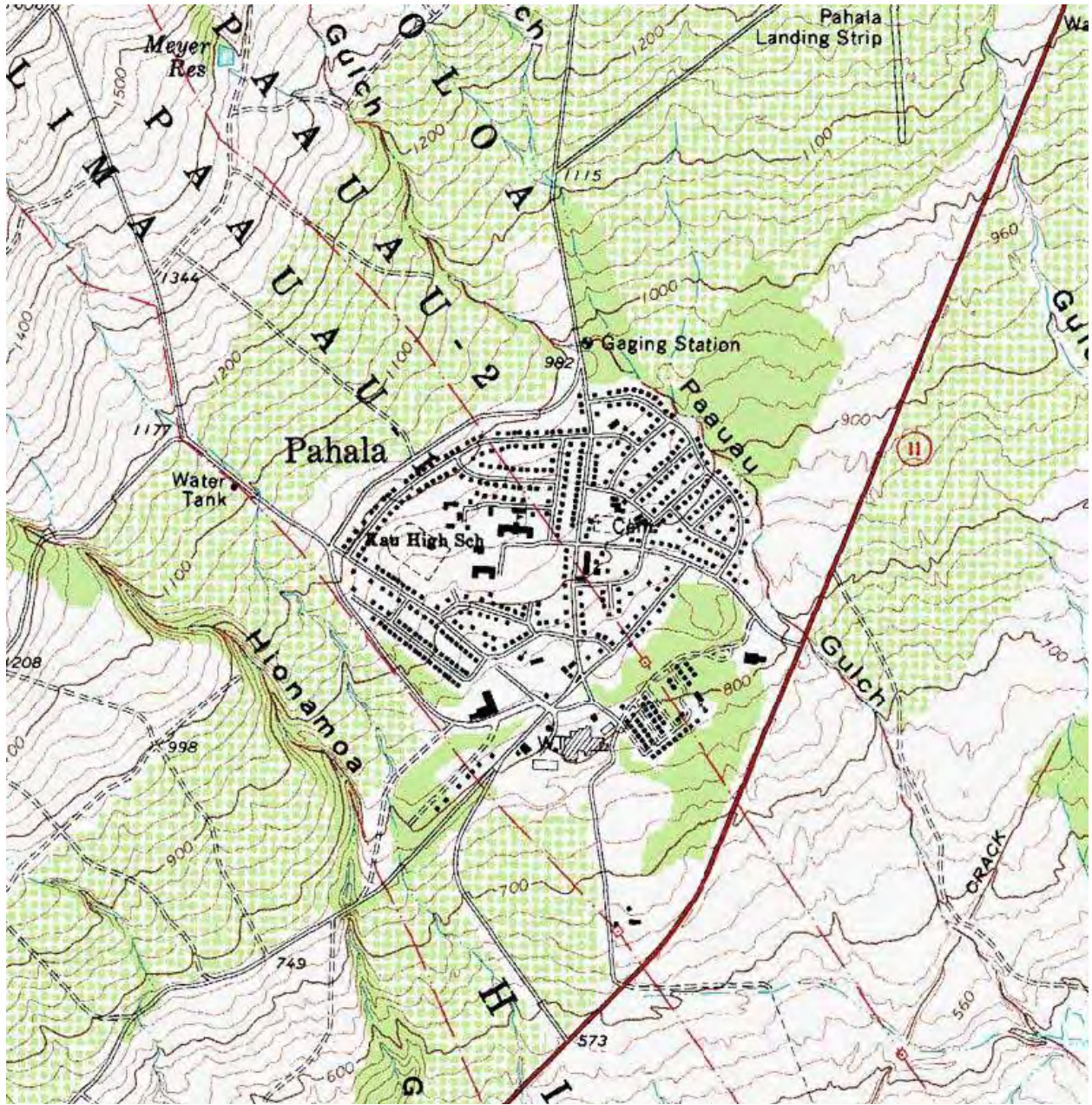




**PERMIT STATUS**  
**Electrical (Transfer Switch & Pump) and Plumbing**  
**Pahala**

**Figure 3**  
**Collection System Phase 2**

Oct. 05, 2016



Approx Scale: 1" = 1500 feet

Figure 4  
Topographic Map

**Cost Estimate  
Pahala Phase 1, Option B**

**Connect Brewer Collection System to WWTP, Olson Easements, Minimal Plans for Future Connections**

	QTY	UM	MATERIAL	LABOR	EQUIPMENT	UNIT COST	TOTAL
<b>GENERAL</b>							
Mobilization	1	LS				\$ 220,000.00	\$ 220,000.00
Traffic Control	1	LS				\$ 30,000.00	\$ 30,000.00
Staging Area	1	LS				\$ 25,000.00	\$ 25,000.00
BMPs, Erosion Control	1	LS				\$ 65,000.00	\$ 65,000.00
Archaeological Monitoring	260	day	\$ 2.00	\$ 880.00	\$ 5.00	\$ 887.00	\$ 230,620.00
Job Shack and Supplies	24	mo	\$ 250.00	\$ 10,000.00	\$ 250.00	\$ 10,500.00	\$ 252,000.00
Temp Utilities	24	mo				\$ 3,000.00	\$ 72,000.00
Demobilization	1	LS				\$ 30,000.00	\$ 30,000.00
<b>WATER DISTRIBUTION</b>							
Trenching	916.67	cy	\$ -	\$ 500.00	\$ 175.00	\$ 675.00	\$ 618,750.00
Haul Exc Material	916.67	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 18,819.17
Bedding	306.00	cy	\$ 46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 26,625.06
Backfill	610.67	cy	\$ 8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 29,562.53
Haul to Job Site	916.67	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 18,819.24
6" DI Pipe	2200	lf	\$ 40.66	\$ 25.19	\$ 3.80	\$ 69.65	\$ 153,230.00
Fittings	1200	lb	\$ 6.19	\$ 2.20	\$ 0.33	\$ 8.72	\$ 10,464.00
Valves, ARVs	4	ea	\$ 3,065.25	\$ 2,882.30	\$ 436.51	\$ 6,384.06	\$ 25,536.24
Temp Trench Patch	5500	sf	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 88,000.00
<b>SEWERLINE A</b>							
Trenching	1174.69	cy	\$ -	\$ 500.00	\$ 175.00	\$ 675.00	\$ 792,916.67
Haul Exc Material	1174.69	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 24,116.41
Bedding	500.00	cy	\$ 46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 43,505.00
Backfill	674.69	cy	\$ 8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 32,661.81
Haul to Job Site	1174.69	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 24,116.41
16" PVC Pipe	1730	lf	\$ 28.60	\$ 6.47	\$ 1.47	\$ 36.54	\$ 63,214.20
Manhole	7	ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 178,500.00
Temp Trench Patch	5800	sf	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 92,800.00

Intercept Exist Sewers	3 ea	\$	1,200.00	\$	2,000.00	\$	200.00	\$	3,400.00	\$	10,200.00
<b>SEWERLINE C1</b>											
Trenching	686.11 cy	\$	-	\$	500.00	\$	175.00	\$	675.00	\$	463,125.00
Haul Exc Material	686.11 cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	14,085.86
Bedding	198.25 cy	\$	46.60	\$	28.56	\$	11.85	\$	87.01	\$	17,249.73
Backfill	487.86 cy	\$	8.00	\$	28.56	\$	11.85	\$	48.41	\$	23,617.36
Haul to Job Site	686.11 cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	14,085.86
14" PVC Pipe	780 lf	\$	21.00	\$	4.85	\$	1.11	\$	26.96	\$	21,028.80
Manhole	3 ea	\$	12,000.00	\$	7,500.00	\$	6,000.00	\$	25,500.00	\$	76,500.00
Temp Trench Patch	2470 sf	\$	8.00	\$	5.00	\$	3.00	\$	16.00	\$	39,520.00
Intercept Exist Sewers	1 ea	\$	1,800.00	\$	2,000.00	\$	200.00	\$	4,000.00	\$	4,000.00
<b>LCC 1 CLOSURE</b>											
Clearing and grubbing	300 sq ft	\$	-	\$	5.50	\$	1.50	\$	7.00	\$	2,100.00
Excavation	130.00 cy	\$	-	\$	23.00	\$	9.60	\$	32.60	\$	4,238.00
Clean LCC	24.00 hr	\$	-	\$	300.00	\$	90.00	\$	390.00	\$	9,360.00
LCC Residue Disposal	3000.00 gal	\$	-	\$	6.00	\$	0.75	\$	6.75	\$	20,250.00
Fill (3B)	90.00 cy	\$	46.60	\$	28.56	\$	11.85	\$	87.01	\$	7,830.90
Geotextile Barrier	300.00 sq ft	\$	10.00	\$	25.00	\$	5.00	\$	40.00	\$	12,000.00
Backfill	130 cy	\$	-	\$	28.56	\$	11.85	\$	40.41	\$	5,253.30
Haul to Job Site	90 cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	1,847.70
Cut and Plug Piping	1 ea	\$	70.00	\$	160.00	\$	20.00	\$	250.00	\$	250.00
Final Completion Report	1 ea	\$	-	\$	4,000.00	\$	100.00	\$	4,100.00	\$	4,100.00
Landscaping	300 sf	\$	1.75	\$	2.50	\$	1.00	\$	5.25	\$	1,575.00
<b>LCC 2 CLOSURE</b>											
Clearing and grubbing	300 sq ft	\$	-	\$	5.50	\$	1.50	\$	7.00	\$	2,100.00
Excavation	130.00 cy	\$	-	\$	23.00	\$	9.60	\$	32.60	\$	4,238.00
Clean LCC	8.00 hr	\$	-	\$	300.00	\$	90.00	\$	390.00	\$	3,120.00
LCC Residue Disposal	500.00 gal	\$	-	\$	6.00	\$	0.75	\$	6.75	\$	3,375.00
Top Slab (12" thk)	8.33 cy	\$	750.00	\$	225.00	\$	12.00	\$	987.00	\$	8,221.71
Backfill	130 cy	\$	-	\$	28.56	\$	11.85	\$	40.41	\$	5,253.30
Cut and Plug Piping	2 ea	\$	70.00	\$	160.00	\$	20.00	\$	250.00	\$	500.00

Final Completion Report	1 ea	\$ -	\$ 4,000.00	\$ 100.00	\$ 4,100.00	\$ 4,100.00	\$ 4,100.00
Landscaping	300 sf	\$ 1.75	\$ 2.50	\$ 1.00	\$ 5.25	\$ 1,575.00	
<b>SITE RESTORATION</b>							
Remove Temp Trench Patch	13770 sf	\$ -	\$ 2.50	\$ 1.65	\$ 4.15	\$ 57,145.50	
Haul Exc Material	255.00 cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 5,235.15	
Subbase & Base Course	255.00 cy	\$ 50.00	\$ 100.00	\$ 35.00	\$ 185.00	\$ 47,175.00	
AC Pavement	1530 sy	\$ 30.00	\$ 5.00	\$ 3.00	\$ 38.00	\$ 58,140.00	
<b>SUBTOTAL</b>						<b>\$ 4,118,652.91</b>	

**Cost Estimate  
Pahala Phase 2, Option B  
Connect Brewer Properties to New Sewer System, Olson Easements  
Use Deep Sewers on Hinano St, Olson Easements, Minimal Plans for Future Connections**

	QTY	UM	MATERIAL	LABOR	EQUIPMENT	UNIT COST	TOTAL
<b>GENERAL</b>							
Mobilization	1	LS				\$ 220,000.00	\$ 220,000.00
Traffic Control	1	LS				\$ 30,000.00	\$ 30,000.00
Staging Area	1	LS				\$ 25,000.00	\$ 25,000.00
BMPs, Erosion Control	1	LS				\$ 65,000.00	\$ 65,000.00
Archaeological Monitoring	260	day	\$ 2.00	\$ 880.00	\$ 5.00	\$ 887.00	\$ 230,620.00
Job Shack and Supplies	24	mo	\$ 250.00	\$ 10,000.00	\$ 250.00	\$ 10,500.00	\$ 252,000.00
Temp Utilities	24	mo				\$ 3,000.00	\$ 72,000.00
Demobilization	1	LS				\$ 30,000.00	\$ 30,000.00
<b>SEWERLINE B-1</b>							
Trenching	248.98	cy	\$ -	\$ 500.00	\$ 175.00	\$ 675.00	\$ 168,058.33
Haul Exc Material	248.98	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 5,111.46
Bedding	56.00	cy	\$ 46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 4,872.56
Backfill	192.98	cy	\$ 8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 9,341.93
Haul to Job Site	248.98	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 5,111.46
8" PVC Pipe	335	lf	\$ 21.00	\$ 4.85	\$ 1.11	\$ 26.96	\$ 9,031.60
Manhole	2	ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 51,000.00
Temp Trench Patch	894	sf	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 14,304.00
<b>SEWERLINE B-2</b>							
Trenching	263.21	cy	\$ -	\$ 500.00	\$ 175.00	\$ 675.00	\$ 177,666.67
Haul Exc Material	263.21	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 5,403.70
Bedding	68.00	cy	\$ 46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 5,916.68
Backfill	195.21	cy	\$ 8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 9,450.11
Haul to Job Site	263.21	cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 5,403.70
8" PVC Pipe	410	lf	\$ 21.00	\$ 4.85	\$ 1.11	\$ 26.96	\$ 11,053.60
Manhole	2	ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 51,000.00
Temp Trench Patch	1094	sf	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 17,504.00

<b>SEWERLINE C2</b>											
Trenching											
	1380.14	cy									
			\$ -	\$ 500.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 931,593.75
Haul Exc Material	1380.14	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 28,334.25
Bedding	307.00	cy	46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 11.85	\$ 87.01	\$ 11.85	\$ 87.01	\$ 26,712.07
Backfill	1073.14	cy	8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 11.85	\$ 48.41	\$ 11.85	\$ 48.41	\$ 51,950.65
Haul to Job Site	1380.14	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 28,334.25
14" PVC Pipe	1569.00	lf	21.00	\$ 4.85	\$ 1.11	\$ 26.96	\$ 1.11	\$ 26.96	\$ 1.11	\$ 26.96	\$ 42,300.24
Manhole	6	ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 6,000.00	\$ 25,500.00	\$ 6,000.00	\$ 25,500.00	\$ 153,000.00
Temp Trench Patch	4968.5	sf	8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 3.00	\$ 16.00	\$ 3.00	\$ 16.00	\$ 79,496.00
<b>SEWERLINE D</b>											
Trenching											
	702.78	cy	-	\$ 500.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 474,375.00
Haul Exc Material	702.78	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 14,428.03
Bedding	256.00	cy	46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 11.85	\$ 87.01	\$ 11.85	\$ 87.01	\$ 22,274.56
Backfill	446.78	cy	8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 11.85	\$ 48.41	\$ 11.85	\$ 48.41	\$ 21,628.51
Haul to Job Site	702.78	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 14,428.03
12" PVC Pipe	1150.00	lf	21.00	\$ 4.85	\$ 1.11	\$ 26.96	\$ 1.11	\$ 26.96	\$ 1.11	\$ 26.96	\$ 31,004.00
Manhole	4	ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 6,000.00	\$ 25,500.00	\$ 6,000.00	\$ 25,500.00	\$ 102,000.00
Temp Trench Patch	3450	sf	8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 3.00	\$ 16.00	\$ 3.00	\$ 16.00	\$ 55,200.00
<b>SEWERLINE E</b>											
Trenching											
	1035.31	cy	-	\$ 500.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 698,833.33
Haul Exc Material	1035.31	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 21,254.89
Bedding	115.23	cy	46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 11.85	\$ 87.01	\$ 11.85	\$ 87.01	\$ 10,026.16
Backfill	920.08	cy	8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 11.85	\$ 48.41	\$ 11.85	\$ 48.41	\$ 44,541.01
Haul to Job Site	1035.31	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 21,254.89
8" PVC Pipe	700.00	lf	9.70	\$ 2.91	\$ 0.66	\$ 13.27	\$ 0.66	\$ 13.27	\$ 0.66	\$ 13.27	\$ 9,289.00
Manhole	2	ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 6,000.00	\$ 25,500.00	\$ 6,000.00	\$ 25,500.00	\$ 51,000.00
Temp Trench Patch	1867	sf	8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 3.00	\$ 16.00	\$ 3.00	\$ 16.00	\$ 29,872.00
<b>SEWERLINE F</b>											
Trenching											
	234.57	cy	-	\$ 500.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 175.00	\$ 675.00	\$ 158,333.33
Haul Exc Material	234.57	cy	-	\$ 13.00	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 7.53	\$ 20.53	\$ 4,815.68



Bedding	41.15	cy	\$	46.60	\$	28.56	\$	11.85	\$	87.01	\$	3,580.46
Backfill	193.42	cy	\$	8.00	\$	28.56	\$	11.85	\$	48.41	\$	9,363.36
Haul to Job Site	234.57	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	4,815.68
8" PVC Pipe	250.00	lf	\$	9.70	\$	2.91	\$	0.66	\$	13.27	\$	3,317.50
Manhole	1	ea	\$	12,000.00	\$	7,500.00	\$	6,000.00	\$	25,500.00	\$	25,500.00
Temp Trench Patch	792	sf	\$	8.00	\$	5.00	\$	3.00	\$	16.00	\$	12,672.00
<b>SEWERLINE G</b>												
Trenching	1140.74	cy	\$	-	\$	500.00	\$	175.00	\$	675.00	\$	770,000.00
Haul Exc Material	1140.74	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	23,419.41
Bedding	322.53	cy	\$	46.60	\$	28.56	\$	11.85	\$	87.01	\$	28,063.34
Backfill	818.21	cy	\$	8.00	\$	28.56	\$	11.85	\$	48.41	\$	39,609.58
Haul to Job Site	1140.74	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	23,419.41
8" PVC Pipe	1650.00	lf	\$	9.70	\$	2.91	\$	0.66	\$	13.27	\$	21,895.50
Manhole	6	ea	\$	12,000.00	\$	7,500.00	\$	6,000.00	\$	25,500.00	\$	153,000.00
Temp Trench Patch	4400	sf	\$	8.00	\$	5.00	\$	3.00	\$	16.00	\$	70,400.00
<b>SEWERLINE H</b>												
Trenching	755.56	cy	\$	-	\$	500.00	\$	175.00	\$	675.00	\$	510,000.00
Haul Exc Material	755.56	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	15,511.56
Bedding	224.00	cy	\$	46.60	\$	28.56	\$	11.85	\$	87.01	\$	19,490.24
Backfill	531.56	cy	\$	8.00	\$	28.56	\$	11.85	\$	48.41	\$	25,732.60
Haul to Job Site	755.56	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	15,511.56
8" PVC Pipe	1360.00	lf	\$	9.70	\$	2.91	\$	0.66	\$	13.27	\$	18,047.20
Manhole	6	ea	\$	12,000.00	\$	7,500.00	\$	6,000.00	\$	25,500.00	\$	153,000.00
Temp Trench Patch	3627	sf	\$	8.00	\$	5.00	\$	3.00	\$	16.00	\$	58,032.00
<b>SEWERLINE I</b>												
Trenching	607.10	cy	\$	-	\$	500.00	\$	175.00	\$	675.00	\$	409,791.67
Haul Exc Material	607.10	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	12,463.74
Bedding	195.00	cy	\$	46.60	\$	28.56	\$	11.85	\$	87.01	\$	16,966.95
Backfill	412.10	cy	\$	8.00	\$	28.56	\$	11.85	\$	48.41	\$	19,949.70
Haul to Job Site	607.10	cy	\$	-	\$	13.00	\$	7.53	\$	20.53	\$	12,463.74
12" PVC Pipe	875.00	lf	\$	9.70	\$	2.91	\$	0.66	\$	13.27	\$	11,611.25

Manhole	5 ea	\$ 12,000.00	\$ 7,500.00	\$ 6,000.00	\$ 25,500.00	\$ 127,500.00
Temp Trench Patch	2625 sf	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00	\$ 42,000.00
<b>INSTALL PUMP STATION AT PRESCHOOL</b>						
Excavation	235 cy	\$ -	\$ 500.00	\$ 175.00	\$ 675.00	\$ 158,625.00
Haul Exc Material	235 cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 4,824.55
Bedding	23.00 cy	\$ 46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 2,001.23
Backfill	12.00 cy	\$ 8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 580.92
Pump Housing	1.00 ea	\$ 8,000.00	\$ 6,400.00	\$ 3,500.00	\$ 17,900.00	\$ 17,900.00
Pumps	2.00 ea	\$ 900.00	\$ 280.00	\$ 85.00	\$ 1,265.00	\$ 2,530.00
Electrical	1.00 ls	\$ 3,000.00	\$ 7,500.00	\$ 1,200.00	\$ 11,700.00	\$ 11,700.00
<b>LATERAL CONNECTIONS</b>						
Trenching (18" cover, no rock)	1157.00 cy	\$ -	\$ 23.00	\$ 9.60	\$ 32.60	\$ 37,718.20
Haul Exc Material	1157.00 cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 23,753.21
Bedding	694.00 cy	\$ 46.60	\$ 28.56	\$ 11.85	\$ 87.01	\$ 60,384.94
Backfill	463.00 cy	\$ 8.00	\$ 28.56	\$ 11.85	\$ 48.41	\$ 22,413.83
Haul to Job Site	694.00 cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 14,247.82
4" Lateral, house to street	8325 lf	\$ 5.62	\$ 75.00	\$ 2.00	\$ 82.62	\$ 687,811.50
Connect 6" Laterals	111 ea	\$ 1,800.00	\$ 2,000.00	\$ 200.00	\$ 4,000.00	\$ 444,000.00
<b>SITE RESTORATION</b>						
Remove Temp Trench Patch	23717.5 sf	\$ -	\$ 2.50	\$ 1.65	\$ 4.15	\$ 98,427.63
Haul Exc Material	439.21 cy	\$ -	\$ 13.00	\$ 7.53	\$ 20.53	\$ 9,017.04
Subbase & Base Course	439.21 cy	\$ 50.00	\$ 100.00	\$ 35.00	\$ 185.00	\$ 81,254.40
AC Pavement	2635.278 sy	\$ 30.00	\$ 5.00	\$ 3.00	\$ 38.00	\$ 100,140.56
<b>SUBTOTAL</b>						
						\$ 9,035,588.69

## Appendix C: Wastewater Flow Calculations

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**Pahaia WWTP Flows 2017 STDS.**

	Calculated Flows		Design Flows			Status Quo - Environmental Loadings					Service Area Summary			
	Average Daily Dry Weather Flow gpd	Peak Wet Weather Flow gpd	Average Dry Weather Flow gpd	Peak day wet weather flow (peaking factor = 3.5) gpd	Peak hour wet weather flow (peaking factor = 4.8) gpm	BOD <sub>5</sub> lbs/year	TSS lbs/year	N lbs/year	P lbs/year	Persons	Total Area acres	Dwellings	Lots	Comments/Assumptions
<b>Existing Condition</b>	45,780	248,883	50,000	175,000	167	45,675	45,675	6,090	1,066					
<b>Initial Condition</b>	138,165	796,146	140,000	490,000	467	127,890	350	17,052	2,994	10	178	293	177	
<b>Initial Buildout</b>	189,130	900,300	190,000	661,955	630	173,565	480	23,142	4,050	10	178	293	177	
<b>Full Buildout</b>	359,380	1,814,258	360,000	1,260,000	1,200	328,860	900	43,848	7,673		335	636	488	
<b>Influent BOD5</b> mg/l	300													Assumes that waste characteristics are based on section 43.3, Vol 2, 0.2LBS/cap-day
<b>Influent TSS</b> mg/l	300													
<b>Influent N</b> mg/l	40													
<b>Influent P</b> mg/l	7													







Pahala WWTP  
Initial Buildout Flows

WW per capita (gpd)	Dwelling	School	Dry (l)	Wet (l)
70	70	25		
Population Initial	2007		5	4250
w/Industrial @ 40capita/ac			35	3000
1 dwelling/RS				

Above-GWT (gpd) / (gpd) = 2031/18003

Small and Decentralized WW  
Management Systems, Crites

page 170, Commercial Areas of  
Unknown Use: 800 gal/acre

Table 4-3, Hospital, bed : 165 gpd,  
employee: 10 gpd

AVERAGE DAILY PER LAND USE:

Neighborhood Business: 40 capita per acre  
School: 25 gal/capita/day  
Agricultural: assume 1MS

QUANTITY OF WASTEWATER: Per CCH WWTP Stds 1993, chpt 20.

Average Daily Flow: 80 gal/day/capita  
Residential SF occupancy: 4 capita/dwelling  
Apartment MF occupancy: 2.8 capita/dwelling

per Vol 2:  
average ww flow rate  
during 24-hour period  
of wet weather

is the highest  
instantaneous  
wastewater flow  
rate during  
prolonged period  
of wet weather

LOT COUNT	notes	TIMK	Area (Acft)	Acres (Tax Acres)	LIUO	Dwellings	Capita	Avg Flow (gpd)	Max. Flow Factor	Max Flow (gpd)	Dry (l) (gpd)	Design Avg Flow (gpd) (avg WW flow + dry l/)	Wet (l) (gpd)	Design Peak Flow (max WW flow + dry l + wet l/) aka Peak Wet weather flow
178														
293														
2,007														
118,885														
297,212														
70,245														
189,130														
532,843														
900,300														
1	*assumed Neighborhood Business 40 Capita per acre	396016034	41395.068	0.9503	CV-10	-	38	2660	2.5	6650	1330	3990	2850.9	10830.9
2		396016035	7657.848	0.1758	CV-10	-	7	490	2.5	1225	245	735	527.4	1997.4
3		396017001	16339.356	0.3751	CV-7.5	-	15	1050	2.5	2625	525	1575	1125.3	4275.3
4		396015034	5140.08	0.118	ML-20	-	1	94.4	2.5	236	35	129.4	354	625
5		396005049	2888.028	0.0663	ML-20	-	1	53.04	2.5	132.6	35	88.04	198.9	366.5
6		396015032	4495.932	1.032	ML-20	-	10	825.6	2.5	2064	350	1175.6	3096	5510
7	Google earth image: lot looks semi developed with possible farm facility.	396005036	1104246	25.35	-	-	-	0	2.5	0	0	0	0	0
8		396002024	17859.6	0.41	MG-1a	-	4	328	2.5	820	140	468	1230	2190
9	*assumed apartment 2.8 per dwelling	396017002	88078.32	2.022	RM-1.5	59	165	11550	2.5	2875	5775	17325	6066	40716
10		396017003	22899.492	0.5257	RM-1.5	15	42	2940	2.5	7350	1470	4410	1577.1	10397.1
11		396017038	26806.824	0.6154	RM-1.5	18	50	3500	2.5	8750	1750	5250	1846.2	12346.2
12		396005044	21505.572	0.4937	ROAD	-	-	-	-	-	-	-	-	-
13		396021031	12736.944	0.2924	RS-10	1	4	280	2.5	700	140	420	877.2	1717.2
14		396015033	58021.92	1.332	RS-10	1	4	280	2.5	700	140	420	3996	4836
15		396014069	11961.576	0.2746	RS-10	1	4	280	2.5	700	140	420	1663.8	1663.8
16		396014070	13290.156	0.3051	RS-10	1	4	280	2.5	700	140	420	915.3	1755.3
17		396014071	15002.064	0.3444	RS-10	1	4	280	2.5	700	140	420	1033.2	1873.2
18		396014072	16452.612	0.3777	RS-10	1	4	280	2.5	700	140	420	1133.1	1973.1
19		396021001	13629.924	0.3129	RS-10	1	4	280	2.5	700	140	420	938.7	1778.7
20		396020031	13673.484	0.3139	RS-10	1	4	280	2.5	700	140	420	941.7	1781.7
21		396020032	13381.632	0.3072	RS-15	1	4	280	2.5	700	140	420	921.6	1761.6
22		396014053	14440.14	0.3315	RS-15	1	4	280	2.5	700	140	420	994.5	1834.5







158	396020025	6934.752	0.1592	RS-7.5	1	4	280	2.5	700	140	420	477.6	1317.6
159	396020026	8790.408	0.2018	RS-7.5	1	4	280	2.5	700	140	420	605.4	1445.4
160	396020027	8903.664	0.2044	RS-7.5	1	4	280	2.5	700	140	420	613.2	1453.2
161	396020028	9056.124	0.2079	RS-7.5	1	4	280	2.5	700	140	420	623.7	1463.7
162	396020001	8306.892	0.1907	RS-7.5	1	4	280	2.5	700	140	420	572.1	1412.1
163	396020004	7845.156	0.1801	RS-7.5	1	4	280	2.5	700	140	420	540.3	1380.3
164	396020005	7784.172	0.1787	RS-7.5	1	4	280	2.5	700	140	420	536.1	1376.1
165	396020006	7792.884	0.1789	RS-7.5	1	4	280	2.5	700	140	420	536.7	1376.7
166	396020003	8084.736	0.1856	RS-7.5	1	4	280	2.5	700	140	420	556.8	1396.8
167	396014043	7391.944	0.1674	RS-7.5	1	4	280	2.5	700	140	420	502.2	1342.2
168	396014044	7318.08	0.168	RS-7.5	1	4	280	2.5	700	140	420	504	1344
169	396014045	10798.524	0.2479	RS-7.5	1	4	280	2.5	700	140	420	743.7	1583.7
170	396014046	10606.86	0.2435	RS-7.5	1	4	280	2.5	700	140	420	730.5	1570.5
171	396014047	12763.08	0.293	RS-7.5	1	4	280	2.5	700	140	420	879	1719
172	396014041	7322.436	0.1681	RS-7.5	1	4	280	2.5	700	140	420	504.3	1344.3
173	396014042	7291.944	0.1674	RS-7.5	1	4	280	2.5	700	140	420	502.2	1342.2
174	396020002	8015.04	0.184	RS-7.5	1	4	280	2.5	700	140	420	552	1392
175	396020007	7701.408	0.1768	RS-7.5	1	4	280	2.5	700	140	420	530.4	1370.4
176	396020008	7487.964	0.1719	RS-7.5	1	4	280	2.5	700	140	420	515.7	1355.7
177	396020009	7548.948	0.1733	RS-7.5	1	4	280	2.5	700	140	420	519.9	1359.9

Pahala WWTP  
Full Buildout Flows

Pahala WWTP Project 150440	Dwelling	School	25
WV per capita (gpd)	70		
Population Initial	2007		
Population Full	3699		
w/Industrial @ 40capita/ac			
1 dwelling/RS			

Above-GWTF (gpd) / (gpd) / (gpd) / (gpd)  
2017 WWD S 35 3000

QUANTITY OF WASTEWATER: Per CCH WWTP Stds 1993, chpt 20.  
**AVERAGE DAILY PER CAPITA FLOW:**  
 Average Daily Flow: 80 gal/day/capita  
 Residential SF occupancy: 4 capita/dwelling  
 Apartment MF occupancy: 2.8 capita/dwelling

**AVERAGE DAILY PER LAND USE:**  
 Neighborhood Business: 40 capita per acre  
 General Industry 100 capita per acre  
 School: 25 gal/capita/day  
 Institution: 200 gal/capita/day

page 170, Commercial Areas of Unknown Use: 800 gal/acre  
 Table 4-3, Hospital, bed : 240 gpd, employee: .15 gpd

Small and Decentralized WW Management Systems, Crites

LOT COUNT	notes	TMK	Area (sqft)	Acreage (Tax Acres)	LUO	Dwellings	Capita	229,915	2.5	574,787	129,465	Design Avg Flow (gpd) aka Average dry weather flow	Wet (l) (gpd)	Design Peak Flow (gpd) aka (max WW flow + dry l) + wet (l) aka Peak Wet weather flow
1		396020244	658670.76	15.121	A-1a	0	0	0	2.5	0	0	0	45363	45363
2		396020243	195845.76	4.496	A-1a	0	0	0	2.5	0	0	0	13488	13488
3		396023035	90879.228	2.0863	A-1a	0	0	0	2.5	0	0	0	6258.9	6258.9
4	*assumed 1 dwelling	396005054	972433.44	22.324	Multiple	0	0	0	2.5	0	0	0	66972	66972
			486216.72	11.162	A-20a	1	4	280	2.5	700	420	0	33486	33486
			486216.72	11.162	RS-10	1	4	280	2.5	700	420	0	33486	33486
5	*assumed Neighborhood Business 40 Capita per acre	396016033	23513.688	0.5398	CV-10	-	22	1540	2.5	3850	770	2310	1619.4	6239.4
6		396016037	17267.184	0.3964	CV-10	-	16	1120	2.5	2800	560	1680	1189.2	4549.2
7		396016038	14300.748	0.3283	CV-10	-	13	910	2.5	2275	455	1365	984.9	3714.9
8		396016032	32665.644	0.7499	CV-10	-	30	2100	2.5	5250	1050	3150	2249.7	8549.7
9		396016003	30605.256	0.7026	CV-10	-	28	1960	2.5	4900	980	2940	2107.8	7987.8
10		396017006	10114.632	0.2322	CV-7.5	-	9	630	2.5	1575	315	945	696.6	2586.6
11		396017007	9809.712	0.2252	CV-7.5	-	9	630	2.5	1575	315	945	675.6	2565.6
12		396017008	9483.012	0.2177	CV-7.5	-	9	630	2.5	1575	315	945	653.1	2543.1
13		396017009	9705.168	0.2228	CV-7.5	-	9	630	2.5	1575	315	945	668.4	2558.4
14		396021032	8150.076	0.1871	ROAD	-	0	0	2.5	0	0	0	561.3	561.3
15									2.5	0	0	0	0	0
16	2.8capita/dwelling	396017036	14779.908	0.3393	RM-1.5	10	28	1960	2.5	4900	980	2940	1017.9	6897.9
17		396017037	62491.176	1.4346	RM-1.5	42	118	8260	2.5	20650	4130	12390	4303.8	29083.8
18		396023019	11338.668	0.2603	RS-10	1	4	280	2.5	700	140	420	780.9	1620.9
19		396023020	15272.136	0.3506	RS-10	1	4	280	2.5	700	140	420	1051.8	1891.8
20	*Obtain Ka'u Hospital Patient and Staff info	396023021	11377.872	0.2612	RS-10	1	4	280	2.5	700	140	420	783.6	1623.6
21	assume 25 beds, 212	396023043	250121.52	5.742	RS-10*	25	25	6000	2.5	15000	875	6875	17226	33101
22		396021009	11721.996	0.2691	RS-10	1	4	3180	2.5	7950	7420	10600	0	15370
23		396021011	16496.172	0.3787	RS-10	1	4	280	2.5	700	140	420	807.3	1647.3
24		396021022	11882.04	0.259	RS-10	1	4	280	2.5	700	140	420	1136.1	1976.1





Table with 17 columns: ID, Account, Amount, Units, Date, Units, Date, Units, Date, Units, Date, Units, Date, Units, Date, Units, Date. The table contains a dense grid of data points for various accounts and dates from 165 to 236.







368	0	396015009	27943.74	0.6415 RS-15	1	4	280	2.5	700	140	420	1924.5	2764.5
369	0	396015005	12066.12	0.277 RS-15	1	4	280	2.5	700	140	420	831	1671
370	0	396015006	15089.84	0.3464 RS-15	1	4	280	2.5	700	140	420	1039.2	1879.2
371	0	396015007	7239.672	0.1662 RS-15	1	4	280	2.5	700	140	420	498.6	1338.6
372	0	396015008	24685.452	0.5667 RS-15	1	4	280	2.5	700	140	420	1700.1	2540.1
373	0	396020058	14936.724	0.3429 RS-15	1	4	280	2.5	700	140	420	1028.7	1868.7
374	0	396015017	12802.284	0.2939 RS-15	1	4	280	2.5	700	140	420	881.7	1721.7
375	0	396020030	10419.552	0.2392 RS-15	1	4	280	2.5	700	140	420	717.6	1557.6
376	0	396015003	13068	0.3 RS-15	1	4	280	2.5	700	140	420	900	1740
377	0	396015004	11173.14	0.2565 RS-15	1	4	280	2.5	700	140	420	769.5	1609.5
378	0	396020056	12806.64	0.2944 RS-15	1	4	280	2.5	700	140	420	882	1722
379	0	396020057	10737.54	0.2465 RS-15	1	4	280	2.5	700	140	420	739.5	1579.5
380	0	396016023	14971.572	0.3437 RS-15	1	4	280	2.5	700	140	420	1031.1	1871.1
381	0	396016024	16565.868	0.3803 RS-15	1	4	280	2.5	700	140	420	1140.9	1980.9
382	0	396016025	15341.832	0.3522 RS-15	1	4	280	2.5	700	140	420	1056.6	1896.6
383	0	396016026	19946.124	0.4579 RS-15	1	4	280	2.5	700	140	420	1373.7	2213.7
384	0	396016027	16404.696	0.3766 RS-15	1	4	280	2.5	700	140	420	1129.8	1969.8
385	0	396020056	149018.76	3.421 RS-15	1	4	280	2.5	700	140	420	11103	20263
386	0	396020216	2906279.64	0	0	0	0	2.5	0	0	0	0	0
				66.719 Multiple	0	0	0	2.5	0	0	0	0	0
				1.667975 RS-10	1	4	280	2.5	700	140	420	5003.925	5843.925
				1.667975 RS-15	1	4	280	2.5	700	140	420	5003.925	5843.925
				30.02355 A-1a	30	0	0	2.5	0	0	0	90070.65	90070.65
				3.33595 A-20a	3	0	0	2.5	0	0	0	10007.85	10007.85
				30.02355 MG-1a	0	300	24018.84	2.5	60047.1	10500	34518.84	90070.65	160617.75
387	0	396015023	14143.932	0.3247 RS-15	1	4	280	2.5	700	140	420	974.1	1814.1
388	0	396015024	10641.708	0.2443 RS-15	1	4	280	2.5	700	140	420	732.9	1572.9
389	0	396015025	16679.124	0.3829 RS-15	1	4	280	2.5	700	140	420	1148.7	1988.7
390	0	396015026	15180.66	0.3485 RS-15	1	4	280	2.5	700	140	420	1045.5	1885.5
391	0	396015027	12802.284	0.2939 RS-15	1	4	280	2.5	700	140	420	881.7	1721.7
392	0	396015028	12283.92	0.282 RS-15	1	4	280	2.5	700	140	420	846	1686
393	0	396015029	13886.928	0.3188 RS-15	1	4	280	2.5	700	140	420	956.4	1796.4
394	0	396015030	11804.76	0.271 RS-15	1	4	280	2.5	700	140	420	813	1653
395	0	396015031	12236.004	0.2809 RS-15	1	4	280	2.5	700	140	420	862.7	1682.7
396	0	396014066	10497.96	0.241 RS-15	1	4	280	2.5	700	140	420	723	1563
397	0	396014067	12754.468	0.2928 RS-15	1	4	280	2.5	700	140	420	878.4	1718.4
398	0	396015001	10619.928	0.2438 RS-15	1	4	280	2.5	700	140	420	731.4	1571.4
399	0	396015002	9888.12	0.227 RS-15	1	4	280	2.5	700	140	420	681	1521
400	0	396015010	11800.404	0.2709 RS-15	1	4	280	2.5	700	140	420	812.7	1652.7
401	0	396014048	12462.516	0.2861 RS-15	1	4	280	2.5	700	140	420	858.3	1698.3
402	0	396014049	13128.984	0.3014 RS-15	1	4	280	2.5	700	140	420	904.2	1744.2
403	0	396014050	14440.14	0.3315 RS-15	1	4	280	2.5	700	140	420	994.5	1834.5
404	0	396014051	14440.14	0.3315 RS-15	1	4	280	2.5	700	140	420	994.5	1834.5
405	0	396014052	13385.988	0.3073 RS-15	1	4	280	2.5	700	140	420	921.9	1761.9
				0	0	0	0	2.5	0	0	0	0	0
				26.926 RS-15	1	579	14475	2.5	36187.5	20265	34740	80778	137230.5
406	0	396005008	1172896.56	6.442 RS-10	0	0	0	2.5	0	0	0	19326	19326
407	0	396005039	280613.52	0	0	0	0	2.5	0	0	0	0	0
408	0	396014020	6930.996	0.1591 RS-7.5	1	4	280	2.5	700	140	420	477.3	1317.3
409	0	396014021	7187.4	0.165 RS-7.5	1	4	280	2.5	700	140	420	495	1335
410	0	396014022	7204.824	0.1654 RS-7.5	1	4	280	2.5	700	140	420	496.2	1336.2
411	0	396014023	7196.112	0.1652 RS-7.5	1	4	280	2.5	700	140	420	495.6	1335.6
412	0	396014024	7082.856	0.1626 RS-7.5	1	4	280	2.5	700	140	420	487.8	1327.8
413	0	396014025	7287.588	0.1673 RS-7.5	1	4	280	2.5	700	140	420	501.9	1341.9
414	0	396014026	7169.976	0.1646 RS-7.5	1	4	280	2.5	700	140	420	493.8	1333.8
415	0	396014027	7540.236	0.1731 RS-7.5	1	4	280	2.5	700	140	420	519.3	1359.3
416	0	396014028	7758.036	0.1781 RS-7.5	1	4	280	2.5	700	140	420	534.3	1374.3
417	0	396014029	7832.088	0.1798 RS-7.5	1	4	280	2.5	700	140	420	539.4	1379.4
418	0	396014030	7683.984	0.1764 RS-7.5	1	4	280	2.5	700	140	420	529.2	1369.2
419	0	396014031	7727.544	0.1774 RS-7.5	1	4	280	2.5	700	140	420	532.2	1372.2
420	0	396018001	13303.224	0.3054 RS-7.5	1	4	280	2.5	700	140	420	916.2	1756.2
421	0	396018002	11356.092	0.2607 RS-7.5	1	4	280	2.5	700	140	420	782.1	1622.1
422	0	396018003	11996.424	0.2754 RS-7.5	1	4	280	2.5	700	140	420	826.2	1666.2
423	0	396018004	10785.456	0.2476 RS-7.5	1	4	280	2.5	700	140	420	742.8	1582.8

Full Flow WWTP flow

424	0	396018028	14244.12	0.327 RS-7.5	1	4	280	2.5	700	140	420	981	1821
425	0	396018029	12519.144	0.2874 RS-7.5	1	4	280	2.5	700	140	420	862.2	1702.2
426	0	396014001	7466.184	0.1714 RS-7.5	1	4	280	2.5	700	140	420	514.2	1354.2
427	0	396014027	7161.264	0.1644 RS-7.5	1	4	280	2.5	700	140	420	493.2	1333.2
428	0	396014028	7287.588	0.1673 RS-7.5	1	4	280	2.5	700	140	420	501.9	1341.9
429	0	396014029	7335.504	0.1684 RS-7.5	1	4	280	2.5	700	140	420	505.2	1345.2
430	0	396014030	7148.196	0.1641 RS-7.5	1	4	280	2.5	700	140	420	492.3	1332.3
431	0	396014031	7082.856	0.1626 RS-7.5	1	4	280	2.5	700	140	420	487.8	1327.8
432	0	396014032	7034.94	0.1615 RS-7.5	1	4	280	2.5	700	140	420	484.5	1324.5
433	0	396014033	6865.056	0.1576 RS-7.5	1	4	280	2.5	700	140	420	472.8	1312.8
434	0	396014034	6866.836	0.1581 RS-7.5	1	4	280	2.5	700	140	420	474.3	1314.3
435	0	396014035	7087.212	0.1627 RS-7.5	1	4	280	2.5	700	140	420	488.1	1328.1
436	0	396014036	7291.944	0.1674 RS-7.5	1	4	280	2.5	700	140	420	502.2	1342.2
437	0	396014037	7291.944	0.1674 RS-7.5	1	4	280	2.5	700	140	420	502.2	1342.2
438	0	396014038	7222.248	0.1658 RS-7.5	1	4	280	2.5	700	140	420	497.4	1337.4
439	0	396014039	7222.248	0.1658 RS-7.5	1	4	280	2.5	700	140	420	497.4	1337.4
440	0	396014040	7257.096	0.1666 RS-7.5	1	4	280	2.5	700	140	420	499.8	1339.8
441	0	396020014	8842.68	0.203 RS-7.5	1	4	280	2.5	700	140	420	609	1449
442	0	396020015	9740.016	0.2236 RS-7.5	1	4	280	2.5	700	140	420	670.8	1510.8
443	0	396020016	10794.168	0.2478 RS-7.5	1	4	280	2.5	700	140	420	743.4	1583.4
444	0	396020017	9618.048	0.2208 RS-7.5	1	4	280	2.5	700	140	420	662.4	1502.4
445	0	396020018	9648.54	0.2215 RS-7.5	1	4	280	2.5	700	140	420	664.5	1504.5
446	0	396020019	6747.444	0.1549 RS-7.5	1	4	280	2.5	700	140	420	464.7	1304.7
447	0	396020020	6512.22	0.1495 RS-7.5	1	4	280	2.5	700	140	420	448.5	1288.5
448	0	396020021	7008.804	0.1609 RS-7.5	1	4	280	2.5	700	140	420	482.7	1322.7
449	0	396020022	6529.644	0.1499 RS-7.5	1	4	280	2.5	700	140	420	449.7	1289.7
450	0	396020023	7230.96	0.166 RS-7.5	1	4	280	2.5	700	140	420	498	1338
451	0	396020010	7400.844	0.1699 RS-7.5	1	4	280	2.5	700	140	420	509.7	1349.7
452	0	396020011	7235.316	0.1661 RS-7.5	1	4	280	2.5	700	140	420	498.3	1338.3
453	0	396020012	7305.012	0.1677 RS-7.5	1	4	280	2.5	700	140	420	503.1	1343.1
454	0	396020013	7113.348	0.1633 RS-7.5	1	4	280	2.5	700	140	420	489.9	1329.9
455	0	396014007	7583.796	0.1741 RS-7.5	1	4	280	2.5	700	140	420	522.3	1362.3
456	0	396014008	7832.088	0.1798 RS-7.5	1	4	280	2.5	700	140	420	539.4	1379.4
457	0	396014009	7801.596	0.1791 RS-7.5	1	4	280	2.5	700	140	420	537.3	1377.3
458	0	396014010	7832.088	0.1798 RS-7.5	1	4	280	2.5	700	140	420	539.4	1379.4
459	0	396014011	7801.596	0.1791 RS-7.5	1	4	280	2.5	700	140	420	537.3	1377.3
460	0	396014012	7901.784	0.1814 RS-7.5	1	4	280	2.5	700	140	420	544.2	1384.2
461	0	396014013	10903.068	0.2503 RS-7.5	1	4	280	2.5	700	140	420	750.9	1590.9
462	0	396014014	9382.824	0.2154 RS-7.5	1	4	280	2.5	700	140	420	646.2	1486.2
463	0	396014015	9792.288	0.2248 RS-7.5	1	4	280	2.5	700	140	420	674.4	1514.4
464	0	396014016	8302.336	0.1906 RS-7.5	1	4	280	2.5	700	140	420	571.8	1411.8
465	0	396014017	13429.548	0.3083 RS-7.5	1	4	280	2.5	700	140	420	924.9	1764.9
466	0	396014018	7008.804	0.1609 RS-7.5	1	4	280	2.5	700	140	420	482.7	1322.7
467	0	396014019	6799.716	0.1561 RS-7.5	1	4	280	2.5	700	140	420	468.3	1308.3
468	0	396020024	6808.428	0.1563 RS-7.5	1	4	280	2.5	700	140	420	468.9	1308.9
469	0	396020025	6934.752	0.1592 RS-7.5	1	4	280	2.5	700	140	420	477.6	1317.6
470	0	396020026	8790.408	0.2018 RS-7.5	1	4	280	2.5	700	140	420	605.4	1445.4
471	0	396020027	8903.664	0.2044 RS-7.5	1	4	280	2.5	700	140	420	613.2	1453.2
472	0	396020028	9056.124	0.2079 RS-7.5	1	4	280	2.5	700	140	420	623.7	1463.7
473	0	396020001	8306.892	0.1907 RS-7.5	1	4	280	2.5	700	140	420	572.1	1412.1
474	0	396020004	7845.156	0.1801 RS-7.5	1	4	280	2.5	700	140	420	540.3	1380.3
475	0	396020005	7784.172	0.1787 RS-7.5	1	4	280	2.5	700	140	420	536.1	1376.1
476	0	396020006	7792.984	0.1789 RS-7.5	1	4	280	2.5	700	140	420	536.7	1376.7
477	0	396020003	8084.736	0.1856 RS-7.5	1	4	280	2.5	700	140	420	556.8	1396.8
478	0	396014043	7291.944	0.1674 RS-7.5	1	4	280	2.5	700	140	420	502.2	1342.2
479	0	396014044	7318.08	0.168 RS-7.5	1	4	280	2.5	700	140	420	504	1344
480	0	396014045	10798.524	0.2479 RS-7.5	1	4	280	2.5	700	140	420	743.7	1583.7
481	0	396014046	10606.86	0.2435 RS-7.5	1	4	280	2.5	700	140	420	730.5	1570.5
482	0	396014047	12763.08	0.293 RS-7.5	1	4	280	2.5	700	140	420	879	1719
483	0	396014041	7322.436	0.1681 RS-7.5	1	4	280	2.5	700	140	420	504.3	1344.3
484	0	396014042	7291.944	0.1674 RS-7.5	1	4	280	2.5	700	140	420	502.2	1342.2
485	0	396020002	8015.04	0.184 RS-7.5	1	4	280	2.5	700	140	420	552	1392
486	0	396020007	7701.408	0.1768 RS-7.5	1	4	280	2.5	700	140	420	530.4	1370.4
487	0	396020008	7487.964	0.1719 RS-7.5	1	4	280	2.5	700	140	420	515.7	1355.7
488	0	396020009	7548.948	0.1733 RS-7.5	1	4	280	2.5	700	140	420	519.9	1359.9

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**Appendix C**  
**August 2018 Biological Survey Report**

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**Biological survey for the Pāhala Community  
Large Capacity Cesspool Closure Project on lot  
TMK: 9-6-002:018, Ka'ū District, Hawai'i Island**

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Prepared by:

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August 16, 2018

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# Biological survey for the Pāhala Community Large Capacity Cesspool Closure Project on lot TMK: 9-6-002:018, Ka'ū District, Hawai'i Island

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August 16, 2018

*Draft*

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## Introduction

The Hawai'i County Department of Environmental Management, Wastewater Division is proposing to construct a wastewater treatment and disposal system ("Project") to treat sewage collected in Pāhala, Ka'ū District. The treatment and disposal system will be located on a property identified as TMK: 9-6-002:018, north of the intersection of Hawaii Belt Road (Māmalahoa Highway) and Maile Street. This report describes methods used and results of a biological survey conducted in the Project area in August 2018. The primary purpose of the survey was to determine whether any species currently proposed or listed as threatened or endangered under either federal or state endangered species statutes occur on, or could utilize resources within, the Project area.

## Project and Site Descriptions

The WWTP site encompasses the lower, approximately 15 ac (6 ha) of the subject parcel (TMK: 9-6-002:018). Presently the entire parcel is a macadamia nut (*Macadamia integrifolia*) orchard, but with the margins and two narrow windbreak tree lines dominated by other species of trees and herbaceous plants dividing the orchard into northwest-southeast trending units. In addition to the WWTP site, a proposed transmission pipe would be constructed to the northwest through the orchard up to Maile Street. From Maile Street a collection system is planned for many of the streets within Pāhala town (see Figure 1).



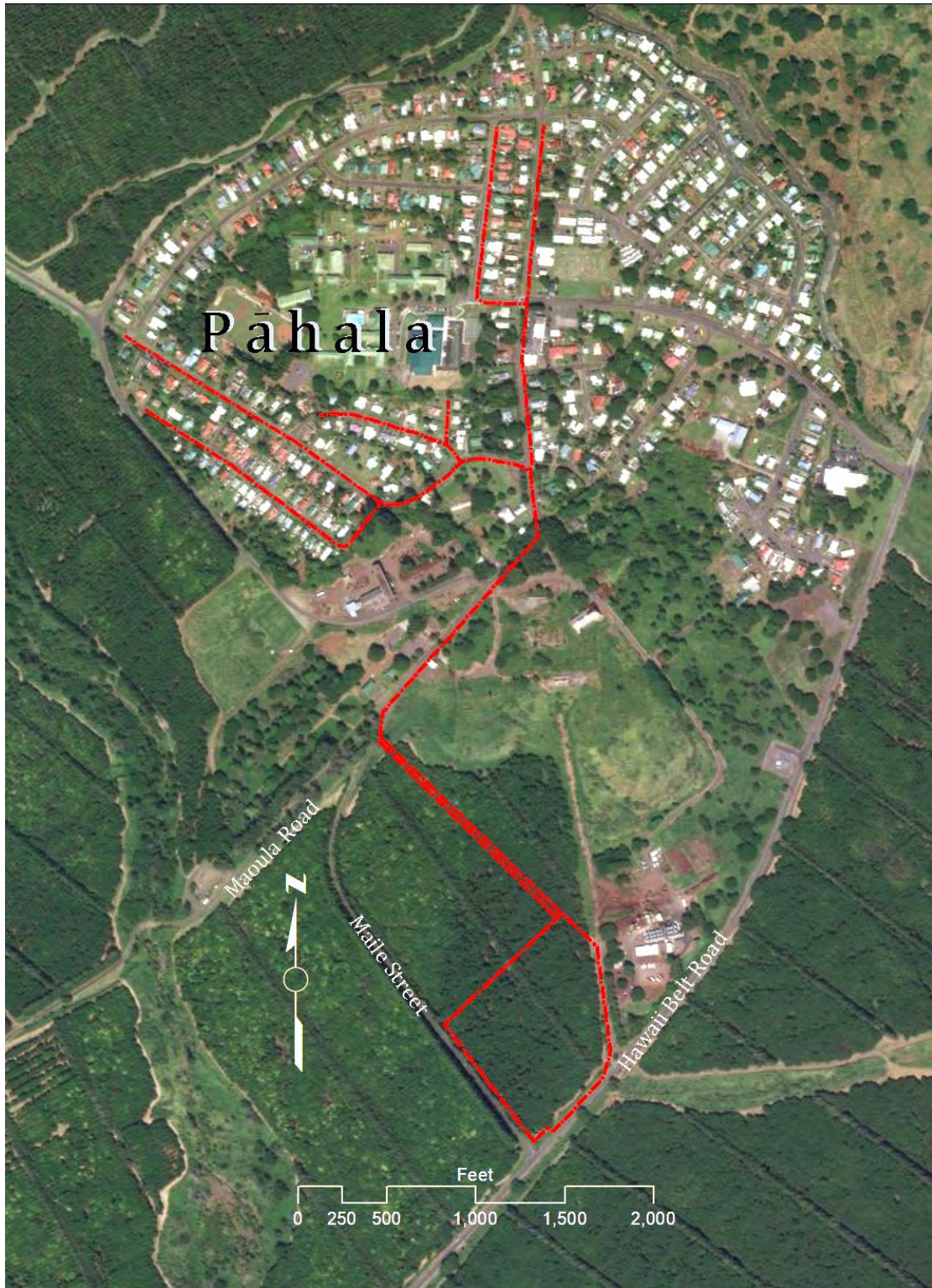


Figure 1. Project and survey areas marked in red, Pāhala.

Macadamia nut trees form a closed crown of dense leaf growth (see cover photo), creating deep shade within most parts of the grove. The dominant understory in these deeply shaded areas is germinating mac nut trees.

## Methods

### Botanical Survey

The botanical survey was undertaken on August 13, 2018 and entailed a wandering pedestrian transect that traversed the subject property, including the area extending north to Maile Road proposed for installation of a collector main. A “windshield” survey was conducted along all the streets proposed for the collection system beyond the surveyed parcel. Plant species were identified as they were encountered and notations made in a field notebook, which was used to develop qualitative abundance values for each species as the survey progressed. On a strictly area basis, only macadamia nut trees, Guinea grass (*Megathyrsus maximus*), and perhaps a couple of other species would have a ranking above uncommon. So, abundance values in this report are relative to areas that support species other than the macadamia nut trees, such as the road verges and other areas surrounding the orchard, unmaintained areas within the orchard, including narrow windbreak lanes that divide the orchard plots into units. The survey period encompassed the early dry season, but most of the vegetation was in a relatively healthy state (the orchard is irrigated as needed). However, early in the dry season found most trees and shrubs absent fruit or flower. This slight limitation did not compromise the discovery of native species of plants.

Plant names used herein follow *Manual of the Flowering Plants of Hawai‘i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, *Hawai‘i’s Ferns and Fern Allies* (Palmer, 2003) for ferns, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental and crop plants. More recent name changes for naturalized plant species follow Imada (2012).

### Avian Survey

Six avian count stations were sited roughly equidistant from each other, four within the WWTP area and two along the collection pipe route upslope to Maile Street. Stations were sited approximately 150 m (490 ft) apart from each other. A single eight-minute avian point count was made at each of the count stations. Field observations were made with the aid of Leica 8 X 42 binoculars and by

listening for vocalizations. The avian counts were conducted in the early morning hours. Time not spent counting at point-count stations was used to search the site for species and habitats not observed during the point counts. Weather conditions were excellent with winds of between 1 and 5 kph and no precipitation.

The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 59th supplements to the Check-List (American Ornithologists' Union, 1998, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chesser et al., 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018).

## Mammalian Survey

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) or 'ōpe'ape'a, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all terrestrial mammalian species detected within the project area.

## Results

### Vegetation

Vegetation within the areas surveyed comprises a macadamia nut orchard of mature trees, unmaintained areas dominated outside the orchard by Guinea grass, lanes of windbreak trees oriented between orchard units, and (mostly) mowed road verge areas. Within the orchard are scattered small plots of ruderal herbaceous plants, in most cases dominated by nodeweed (*Synedrella nodiflora*), but if generally only lightly shaded, a number of other herbaceous species. The windbreak lanes consist of two rows of trees: silk oak (*Grevelia robusta*) and paperbark (*Melaleuca quinquenervia*) and are used in orchard maintenance to stack cut branches and logs. These lanes support many of the herbaceous plants recorded from the orchard. The proposed sewerage collection system will be installed along already paved roadways within Pāhala. The survey in these areas revealed the vegetation to be entirely maintained yards of ornamental plants.

## Flora

A listing of the plant species recorded during the August 2018 survey is provided as Table 1. In all, the listing has 52 species of vascular plants: 2 ferns, one gymnosperm, and 49 species of angiosperms (flowering plants). Only two species (4%) are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Found in low numbers are the ubiquitous, ruderal 'uhaloa (*Waltheria indica*) and the common blue- or purple-flowered morning glory vine: koali 'awa (*Ipomoea indica*). Being widely distributed indigenous species, neither is listed as threatened or endangered or of any special concern.

Table 1. Plant species identified during the August 13, 2018 survey of TMK: 9-6-002:018, Pāhala, Ka'ū District, Hawai'i.

Species listed by family	Common name	Status	Abundance	Notes
FERNS				
NEPHROLEPIDACEAE				
<i>Nephrolepis multiflora</i> (Roxb.) F.M. Jarrett ex C.V. Morton	sword fern	Nat	R	
PTERIDACEAE				
<i>Pityrogramma calomelanos</i> (L.) Link	silver fern	Nat	R	<1>
GYMNOSPERMS				
ARAUCARIACEAE				
<i>Araucaria columnaris</i> (G. Forst.) J.D. Hook.	Cook pine	Nat	0	<1>
FLOWERING PLANTS DICOTYLEDONS				
AMERANTHACEAE				
<i>Amaranthus spinosus</i> L.	spiny amaranth	Nat	R	
APOCYNACEAE				
<i>Carissa macrocarpa</i> (Ecklon) A. de Cand.	natal plum	Orn	R	
<i>Nerium oleander</i> L.	oleander	Orn	R	
ARALIACEAE				
<i>Schefflera actinophylla</i> (Endl.) Harms	umbrella tree	Nat	U	
ASTERACEAE (COMPOSITAE)				
<i>Ageratum conyzoides</i> L.	maile hohono	Nat	R	<1>

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
<b>ASTERACEAE (cont.)</b>				
<i>Bidens pilosa</i> L.	ki; beggartick	Nat	U	<2>
<i>Calyptocarpus vialis</i> Less.	---	Nat	O	<1>
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	Nat	C	<2>
<i>Crassocephalum crepidioides</i> (Benth.) S. Moore	---	Nat	R	
<i>Cyanthillium cinereum</i> L.	little ironweed	Nat	U	<1>
<i>Lactuca serriola</i> L.	prickly lettuce	Nat	U	<1>
Indet.	ruderal weed	Nat	R	<3>
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	Nat	AA	<2>
<b>BASELLACEAE</b>				
<i>Anredera cordifolia</i> (Ten.) Steenis	Madeira vine	Nat	R	<3>
<b>BRASSICACEAE</b>				
<i>Lepidium virginicum</i> L.	---	Nat	R	<2>
<b>CAPPARACEAE</b>				
<i>Cleome gynandra</i> L.	wild spider flower	Nat	O	<1>
<b>CONVOLVULACEAE</b>				
<i>Ipomoea indica</i> (J. Burm.) Merr.	koali 'awa	<b>Ind</b>	R	
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	---	Nat	O	
<i>Merremia tuberosa</i> (L.) J. Rendle	wood rose	Nat	R	
<b>CUCURBITACEAE</b>				
<i>Momordica charantia</i> L.	wild bitter melon	Nat	O	
<b>EUPHORBIACEAE</b>				
<i>Euphorbia heterophylla</i> L.	kaliko	Nat	U	<1>
<i>Euphorbia hirta</i> L.	garden spurge	Nat	O	<2>
<i>Ricinus communis</i> L.	castor bean	Nat	C	<2>
<b>FABACEAE</b>				
<i>Acacia confusa</i> Merr.	Formosan koa	Nat	R	
<i>Leucaena leucocephala</i> (Lam.) deWit	koa haole	Nat	R	<2>
<i>Macroptilium atropurpureum</i> (DC.) Urb.	---	Nat	U	<1>
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine vine	Nat	AA	<2>
<b>LAMIACEAE</b>				
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's ear	Nat	O	<2>
<b>MALVACEAE</b>				
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	Nat	R	
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	Nat	O	<2>
<i>Sida rhombifolia</i> L.	Cuba jute	Nat	C	<2>

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
<b>MALVACEAE (cont.)</b>				
<i>Sida spinosa</i> L.	prickly sida	Nat	R	
<i>Waltheria indica</i> L.	'uhaloa	<b>Ind</b>	U	
<b>MORACEAE</b>				
<i>Ficus microcarpa</i> L. f.	Chinese banyan	Nat	R	<2>
<b>MYRTACEAE</b>				
<i>Melaleuca quinquenervia</i> (Cav.) S.T. Blake	paperbark	Nat	C	
<i>Syzygium cumini</i> (L.) Skeels	Java plum	Nat	U	<2>
<b>PHYTOLACCACEAE</b>				
<i>Rivina humilis</i> L.	coral berry	Nat	U	
<b>PROTEACEAE</b>				
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	silk oak	Nat	C	<2>
<i>Macadamia integrifolia</i> Maiden & Berche	macadamia nut	Nat	AA	
<b>RUBIACEAE</b>				
<i>Spermacoce assurgens</i> Ruiz & Pav.	buttonweed	Nat	C	<1>
<b>MONOCOTYLEDONS</b>				
<b>COMMELINACEAE</b>				
<i>Commelina benghalensis</i> L.	hairy honohono	Nat	R	<1>
<b>CYPERACEAE</b>				
<i>Cyperus gracilis</i> R. Br.	McCoy grass	Nat	U	
<b>POACEAE</b>				
<i>Axonopus compressus</i> (Swartz) P. Beauv.	brd.-lvd. carpet grass	Nat	C	<1>
<i>Cenchrus purpureus</i> (Schumach.) Morrone	elephant grass	Nat	U	
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	Nat	R	
<i>Digiteria</i> sp.	---	Nat	R	
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	Nat	A	<2>
<i>Megathyrsus maximus</i> Jacq.	Guinea grass	Nat	AA	<2>
<i>Setaria verticillata</i> (L.) P. Beauv.	bristly foxtail	Nat	R	

## Legend to Table 1:

Status = distributional status

**Ind** = indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.**Nat** = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778 and well-established outside of cultivation.**Orn** = ornamental; crop or landscape plant not established outside of cultivation.

Abundance = occurrence ratings for plants on property in July 2013.

R - Rare - only one or two plants seen.

Table 1 – Legend (continued).

- U - Uncommon - several to a dozen plants observed.  
 O - Occasional - found regularly, but not abundant anywhere.  
 C - Common - considered an important part of the vegetation and observed numerous times.  
 A - Abundant - found in large numbers; may be locally dominant.  
 AA - Abundant - very abundant and dominant; defining vegetation type.

## Notes:

- <1> Characteristic or found only in the road verge immediately adjacent to the site.  
 <2> Species also reported from close by in David & Guinther (2013).  
 <3> Plant lacking flowers or fruit at time of survey; identification uncertain.

## Avian Survey

A total of 175 individual birds of 13 species, representing nine separate families, was recorded during station counts (Table 2). Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. A closed canopy keeps areas beneath the trees in perpetual twilight. Four species, Northern Cardinal (*Cardinalis cardinalis*), Japanese White-eye (*Zosterops japonicus*), Yellow-fronted Canary (*Ceithagra mozambica*), and Red-billed Leiothrix (*Leiothrix lutea*), accounted for 52% of all birds recorded during station counts. The most frequently recorded species was Northern Cardinal, which accounted for 16% of the total number of individual birds recorded during station point counts. All of the species recorded during the course of this survey are established alien species.

Table 2. Avian species detected during point-counts for the Pāhala Community WWTP Project

Common Name	Scientific Name	ST	RA
	PHASIANIDAE - Pheasants & Partridges Meleagridinae -Turkeys		
Wild Turkey	<i>Meleagris gallopavo</i>	A	2.00
	COLUMBIFORMES COLUMBIDAE - Pigeons & Doves		
Spotted Dove	<i>Streptopelia chinensis</i>	A	3.17
Zebra Dove	<i>Geopelia striata</i>	A	2.00

Table 2 (continued).

Common Name	Scientific Name	ST	RA
	PASSERIFORMES		
	ZOSTEROPIIDAE - White-eyes		
Japanese White-eye	<i>Zosterops japonicus</i>	A	3.67
	TIMALIIDAE - Babblers		
Chinese Hwamei	<i>Garrulax canorus</i>	A	2.00
Red-billed Leiothrix	<i>Leiothrix lutea</i>	A	3.33
	STURNIDAE - Starlings		
Common Myna	<i>Acridotheres tristis</i>	A	0.17
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies		
	Carduelinae - Carduline Finches and Hawaiian		
	Honeycreepers		
House Finch	<i>Haemorhous mexicanus</i>	A	1.33
Yellow-fronted Canary	<i>Ceithagra mozambica</i>	A	1.50
	CARDINALIDAE - Cardinals & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	4.67
	THRAUPIDAE - Tanagers		
	Thraupinae - Core Tanagers		
Yellow-billed Cardinal	<i>Paroaria capitata</i>	A	1.50
Saffron Finch	<i>Sicalis flaveola</i>	A	1.67
	ESTRILDIDAE - Estrildid Finches		
Scaly-breasted Munia	<i>Lonchura punctulata</i>	A	0.17

## Key to Table 2

**ST** Status.

A Alien – Introduced to the Hawaiian Islands by humans.

**RA** Relative Abundance – Number of birds detected divided by the number of count stations (6).

## Mammalian Survey

Rather remarkably, we recorded no mammalian species within the survey area. Indeed, there was no indication that pigs (*Sus scrofa*) utilize the Project area.

## Discussion

### Botanical Resources

Although some unmaintained or infrequently maintained areas exist on the subject parcel, the entire Project is proposed for land that is highly modified and the flora present subject to alterations, including mowing. Thus, there is no expectation for the site to support remnants of a native forest flora and minimal



opportunity for native plants to become established, the *'uhaloa* and *koali 'awa* being exceptions due to their ability to grow in highly disturbed environments. A previous biological survey (David and Guinther, 2013) conducted on 5 ac (2 ha) of land close by to the east yielded only 25 species of plants, the most abundant being white shrimp plant (*Justicia betonica*), glycine vine, and Guinea grass. Because that area had been highly disturbed, then not disturbed for a long time, species such as the shrimp plant and particularly Guinea grass had become well-established to the exclusion of other species. Sixteen species (24% of the combined species list) were common to both surveys.

Obviously, the macadamia nut orchard is a valuable botanical resource, but a commercial one and not an environmentally sensitive one. The same can be said for the Cook pines (*Araucaria columnaris*) that line Maile Street along the southwestern side of the parcel. These old trees are an important community landscape element to be retained in place by the Project.

### Avian Resources

The findings of the avian survey are consistent with the location of the site, and the monoculture of macadamia nut trees present on it. No native avian species were recorded during the course of this survey.

Although not detected during this survey, endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) have been recorded over-flying the general Project area between April and the end of November each year. The petrel is listed as endangered, and the shearwater as threatened under both federal and State of Hawai'i endangered species statutes. The primary cause of mortality in both Hawaiian Petrel and Newell's Shearwater is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered to be second-most significant cause of mortality of these seabirds in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds can collide with man-made structures and, if not killed outright, dazed or injured birds become prey to feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003). Neither nesting colonies nor appropriate nesting habitat for either of these listed seabird species occur within or close to the current Project site.

## Mammalian Resources

No Hawaiian hoary bats were detected during the course of this survey. It is possible that bats use resources within orchard part of the Project. Although, no rodents were recorded during the course of this survey, it is likely that one or more of the four alien Muridae established on Hawai'i Island—European house mouse (*Mus musculus domesticus*), roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), and black rat (*Rattus exulans hawaiiensis*)—use various resources found within the general Project area on a seasonal basis, especially in the macadamia nut orchard. These human commensal species are drawn to areas of human habitation and activity and all are deleterious to native ecosystems and their dependent native fauna.

## Jurisdictional Waters

The subject parcel slopes down to the southwest corner. A street culvert at that location carries runoff in the area under Māmalahoa Highway (Hawaii Belt Road). The National Wetlands Inventory (NWI) Wetlands Mapper (USFW, nd (a)) shows no features occurring on the parcel and no streams are shown on USGS topographic maps (USGS, 1923). Streams in the Pāhala area of the Island do not flow all the way to the sea, but terminate on Keone'ele'ele Flat to the southwest.

## Critical Habitat

Federally delineated Critical Habitat is not present in Pāhala area (USFWS, 2012). Thus, the Project will not impinge on federally designated Critical Habitat. No equivalent designation exists under state law

## Potential Impacts to Protected Species

No species of plants or animals currently proposed for listing or listed under either the federal or State of Hawai'i endangered species statutes (DLNR 1998, 2015; USFWS, nd (b)) were recorded by this survey. Three faunal species not observed, may occur in the general vicinity and are discussed here.

## Seabirds

The principal potential impact that the construction of the project poses to protected seabirds is the increased threat that birds will be downed after becoming disoriented by lights associated with the proposed action during the

nesting season. The two activities that could pose a threat to these nocturnally flying seabirds are: a) if during construction, it is deemed expedient or necessary to conduct night-time construction activities during the seabird fledging season (which runs from September 15 through December 15); or b) exterior lighting is installed as part of the WWTP facilities. Impacts can be minimized if all external lighting is made dark sky compliant (HDLNR-DOFAW, 2016).

### Hawaiian hoary bat

The potential impact that Project construction poses to the endangered Hawaiian hoary bat would be from clearing and grubbing of the macadamia nut orchard. Trimming or removal of trees within the construction areas may temporarily displace bats using this vegetation for roosting. Hawaiian bats use multiple roosts within their home territories, so the disturbance resulting from removal of trees is likely to be minimal. However, during pupping season, female bats carrying pups may be less able to rapidly vacate a roost site when the tree is felled. Additionally, adult female bats sometimes leave their pups in the roost tree while they themselves forage, and very small pups may be unable to flee a tree that is being felled. Adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft), between June 1 and September 15, the bat pupping season.

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**Appendix C-1**  
**Endangered Species Act Section 7 Consultation**

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December 21, 2018

Eldridge Naboa, Fish and Wildlife Biologist  
U.S. Department of the Interior  
U.S. Fish and Wildlife Service  
300 Ala Moana Boulevard  
Room 3-122, Box 50088  
Honolulu, HI 96850

**Subject: Pāhala Large Capacity Cesspool (LCC) Replacement Project; Pāhala, Ka'ū District, Hawai'i (01EPIF00-2018-TA-0275) – Request for Concurrence**

Dear Mr. Naboa:

On behalf of the United States Environmental Protection Agency (EPA) and the County of Hawai'i (County), and as the designated non-Federal representative for consultations under Section 7 of the Endangered Species Act, we respectfully request concurrence from the U.S. Fish and Wildlife Service (FWS) that the above-referenced project is *not likely to adversely affect* federally-listed threatened and endangered species or critical habitat. This consultation addresses the project's potential impacts to the following eight species that were identified in correspondence with FWS dated April 23, 2018 as having the potential to occur in the vicinity of the project area: Hawaiian hoary bat (*Lasiurus cinereus semotus*), Hawaiian Hawk (*Buteo solitarius*), Nēnē (*Branta sandvicensis*), Hawaiian Petrel (*Pterodroma sandwichensis*), Band-rumped Storm-Petrel (*Oceanodroma castro*), Newell's Shearwater (*Puffinus newelli*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), and Hawaiian Coot (*Fulica alai*).

The proposed project is located in Pāhala, Ka'ū District, Hawai'i. Funding for this project is provided by a Special Appropriation Grant from EPA and a loan from the State of Hawai'i Clean Water State Revolving Fund (SRF). The project involves replacing two large-capacity cesspools (LCCs) with a new County-owned wastewater collection system to be constructed primarily within the existing public right-of-way (ROW); a treatment and disposal system that will occupy a 14.9-acre site that is currently a privately-owned macadamia nut plantation; and closure of the two LCCs. See enclosed map of project location for reference (Site 7 on the attached Figure 1).

#### **Project Description/Action Area**

The proposed project is located in the community of Pāhala, a former sugar farming and processing operation, in the Ka'ū District, Island of Hawai'i. In 1999, pursuant to the Safe Drinking Water Act, EPA promulgated regulations (40 CFR 144.14) requiring the elimination or closure of all LCCs by April 2005. In 2010, the C. Brewer company transferred the ownership and operation of the LCCs to the County, which is bringing these wastewater systems into compliance with the Safe Drinking Water Act.

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The proposed project will consist of constructing a new wastewater collection system primarily within the public ROW and a treatment and disposal system located on a 14.9-acre parcel that is currently privately owned (TMK: 9-6-002: 018), but will be acquired by the County (Figure 1). The wastewater collection system will consist of approximately 12,150 linear feet of 8 to 16-inch gravity-flow piping located within eight public streets. The treatment and disposal facility will be a land-based system consisting of a headworks with screens to remove debris and an odor control unit; a series of three 0.4-acre aerated lagoons and a fourth, 0.8-acre aerated lagoon; an operations building with adjacent disinfection system; a subsurface flow constructed wetland; and four slow-rate (SR) land treatment basins, which will be surrounded by berms on all sides (Figure 2). SR land treatment involves irrigation of land and vegetation with treated wastewater effluent. Significant additional treatment occurs as the water percolates through the soil. The facility's treatment capacity will be approximately 190,000 gallons per day. The property will be cleared of trees and will be enclosed by a 6-foot-high chain link security fence (Figure 2). No more than two Cook pines (*Araucaria columnaris*) along Maile Street will be removed to accommodate the new driveway to the treatment and disposal facility.

Once the new system is in place, the County will close and abandon the existing LCCs. This system includes some lines located in the backyards of residential lots and some within public streets; therefore, abandoning the lines in place will minimize impacts related to their excavation and removal. The cut ends of the abandoned laterals to the collection system will be plugged with concrete to prevent unauthorized use of the old system and to avoid the need to maintain an unused underground hydraulic conduit. The two LCCs will also be abandoned and closed; the specific closure methods have not yet been determined but will be consistent with the requirements set forth in Hawai'i Administrative Rules §11-23-19.

### **Consultation History with FWS**

Representatives of EPA and the County have conferred with FWS regarding this project. In the process of preparing the Draft Environmental Assessment (EA), the County's representative (Wilson Okamoto Corporation) submitted a written request for comments to FWS in a letter dated March 15, 2018. In a letter dated April 23, 2018, FWS identified the eight federally-listed species having the potential to occur in the vicinity of the project area, as well as FWS's recommended impact avoidance and minimization measures for each species. The project team subsequently provided a written summary of the botanical and biological field studies that were undertaken as part of the Draft EA in a letter to FWS dated August 20, 2018. Copies of the three corresponding letters are enclosed. The project team also held a conference call with FWS on October 17, 2018 and has incorporated feedback from the phone call into our assessment of potential impacts and planned avoidance and mitigation measures.

### **Summary of August 2018 Biological Field Survey**

Botanical and biological field surveys were conducted in August 2018 within the proposed project area, including the streets and adjacent areas of the proposed wastewater collection system and the 14.9-acre wastewater treatment and disposal facility site. The field surveys confirmed that the collection system will be installed along roadways within Pāhala that are already paved, and that vegetation that will be impacted consists of ornamental plants in private yards.

Surveys of the wastewater treatment and disposal facility site documented 52 species of vascular plants; however, only two species are considered native to the Hawaiian Islands and both are widely-distributed indigenous species that are not listed as threatened, endangered, or of special

concern. An avian survey of the project site recorded 13 bird species, all of which are established alien species. While not documented during the field survey of the project area, the field survey contractor noted in their survey report that the Hawaiian Petrel and Newell's Shearwater have been observed flying over the general project area between April and the end of November each year.

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 by the survey.

### **Federally-designated Critical Habitat**

ERG reviewed the FWS Environmental Conservation Online System (ECOS) and contacted FWS by email in November 2018 to determine whether any proposed or final critical habitat of federally listed threatened or endangered species has been designated in the vicinity of the project area. Per ECOS, critical habitat is designated at several locations throughout the County; however, no proposed or final critical habitat has been designated at or in the immediate vicinity of the project area. This finding was confirmed by FWS in email correspondence dated November 29, 2018. The project area is located approximately 3.1 miles northwest of the nearest critical habitat along the island's shoreline, which has been designated for the federally and state-endangered Hawaiian monk seal (*Monachus schauinslandi*). Based on the distance, the 600- to 900 foot elevation of the project area, and the nature of project activities, impacts to this or other critical habitats in the County are not anticipated.

### **Anticipated Impacts to Federally-listed Species and Proposed Avoidance Measures**

#### Hawaiian Hoary Bat

Potential impacts to Hawaiian hoary bat from construction and operation of the project include injury or mortality of young bats if woody vegetation is cleared during the pupping season and entanglement in barbed wire fencing.

All clearing activities of trees taller than 15 feet will be scheduled to take place outside the pupping season of the Hawaiian hoary bat, which lasts from June 1 to September 15. Additionally, to avoid adverse impacts to Hawaiian hoary bats no barbed wire will be used on the security fence or elsewhere on the project site.

#### Hawaiian Hawk

Potential impacts to Hawaiian Hawk from construction and operation of the project include destruction of a nest by cutting a tree in which a nest is located, either during or outside of the breeding season. Noise-related disturbance resulting from construction activities (including tree clearing and facility construction) in the vicinity of a nest during the breeding season is a second potential impact. Noise-related disturbance in close proximity to a nest has the potential to result in nest failure due to adult nest abandonment and increased exposure of chicks and juveniles to inclement weather or predators.

The 14.9-acre parcel proposed for the treatment and disposal facility is currently a monotypic macadamia nut plantation. The existing macadamia nut plantation likely does not provide suitable nesting habitat for Hawaiian Hawks; therefore, tree clearing within this area (whether during or outside the breeding season) is not expected to directly harm or destroy Hawaiian Hawk nests. Additionally, the Cook pines along Maile Street are not expected to provide suitable nesting habitat

for Hawaiian Hawks, due in part to their location alongside a road. Removal of the one or two Cook pines as necessary to accommodate the new driveway is not expected to directly harm or destroy Hawaiian Hawk nests. Regardless of the time of year, no trimming or cutting of trees that contain a Hawaiian Hawk nest will be performed.

If feasible, to avoid noise-related disturbance during the Hawaiian Hawk breeding season (which lasts from March 1 to September 30), all tree clearing activities will be scheduled to occur outside the breeding season. If, however, tree clearing will occur during the breeding season, the County will seek technical assistance from FWS regarding appropriate survey methods to determine whether nesting Hawaiian Hawks are present near the area to be cleared. Depending on the timing of the survey, methods may include visual nest searches and/or callback surveys by a qualified biological monitor. If surveys document the presence of an active Hawaiian Hawk nest during the breeding season within 1,600 feet of the area to be cleared, the County will postpone tree clearing activities until after the breeding season or until authorized in writing by FWS that activities may proceed.

Additionally, if site preparation, construction, or other substantial noise-generating activities (following the completion of tree clearing) will occur during the Hawaiian Hawk breeding season, the County will seek technical assistance from FWS regarding whether any surveys of the surrounding area are necessary. If surveys document the presence of an active Hawaiian Hawk nest during the breeding season within 1,600 feet of the footprint of site preparation and construction activities, the County will seek technical assistance from FWS to ensure that any noise-generating activities do not have the potential to result in nest abandonment.

#### Waterbirds

Potential impacts to Nēnē, Hawaiian Stilt, and Hawaiian Coot are primarily related to the creation of suboptimal habitat at the treatment and disposal facility. Specifically, the constructed lagoons may represent an attractive nuisance due to the potential for spread of botulism, and the presence of waterbirds and their nests at the facility may attract non-native mammalian predators to the area.

Several measures are proposed to discourage and monitor waterbird use of the facility and exclude predators from the area. Design elements of the proposed facility expected to discourage waterbird use of the area include the following: the total proposed acreage of new lagoon surface (approximately 2 acres) is relatively small, as compared to approximately 20 acres of lagoons at the Kealakehe Wastewater Treatment Plant in Kailua-Kona, Hawai'i; the subsurface-flow-constructed-wetland will not have areas of open water, which would attract waterbird prey; asphalt rather than gravel will be used to provide access around the lagoons; the lagoons will be lined with a high-density polyethylene (HDPE) liner, rather than with substrate that would support vegetation growth; shade balls will be used in the largest lagoon (Lagoon 4) to discourage algal growth, and are also expected to discourage use of the lagoon by waterbirds; and the lagoons will be bordered by groves rather than bare land. In addition, the security fence around the perimeter of the treatment and disposal facility is expected to exclude larger non-native mammalian predators including dogs and wild pigs.

For the first year following completion of construction, the County will provide for a biological monitor to assess waterbird use of the facility on a weekly basis. Weekly post-construction monitoring will include checking for predators, sick or dead waterbirds, and the presence of threatened and endangered species. Following the completion of construction, the County will coordinate with FWS to determine the specific approach for communicating the monitoring results.

## Seabirds

Potential impacts to Hawaiian Petrel, Band-rumped Storm-Petrel, and Newell's Shearwater from the construction and operation of the project include potential adverse effects resulting from nighttime lighting at the facility. Outdoor, nighttime lighting during construction and operation of the facility could result in seabird disorientation, fallout, and injury or mortality.


To avoid adverse impacts to seabirds during the construction period, the construction contract will include a blanket statement prohibiting construction activities after dark. To avoid impacts to seabirds during the operation of the facility, the proposed facility includes use of a down-shielded light exterior fixture mounted below the roof overhang. The light fixture near the headworks will also be down-shielded. The exterior lights will be used at night only in the event of an emergency that requires an immediate response. All fixtures will meet requirements for outdoor lighting as set forth in Hawai'i Code Chapter 14 (General Welfare).

## **Summary**

The FWS has identified eight federally-listed threatened and endangered species which have the potential to occur in the vicinity of the project area. The impact avoidance and minimization measures described above have been specifically developed for the project in consultation with FWS. EPA has reviewed and concurred with the analysis conducted and proposed measures. Therefore, on behalf of EPA and the County, we respectfully request concurrence from the FWS that the project is *not likely to adversely affect* the eight federally-listed threatened and endangered species which have the potential to occur in the vicinity of the project area.

We greatly appreciate your input during this consultation. If you have any questions, please feel free to contact me at (703) 615-4371 or by email at [patrick.goodwin@erg.com](mailto:patrick.goodwin@erg.com).

Sincerely,

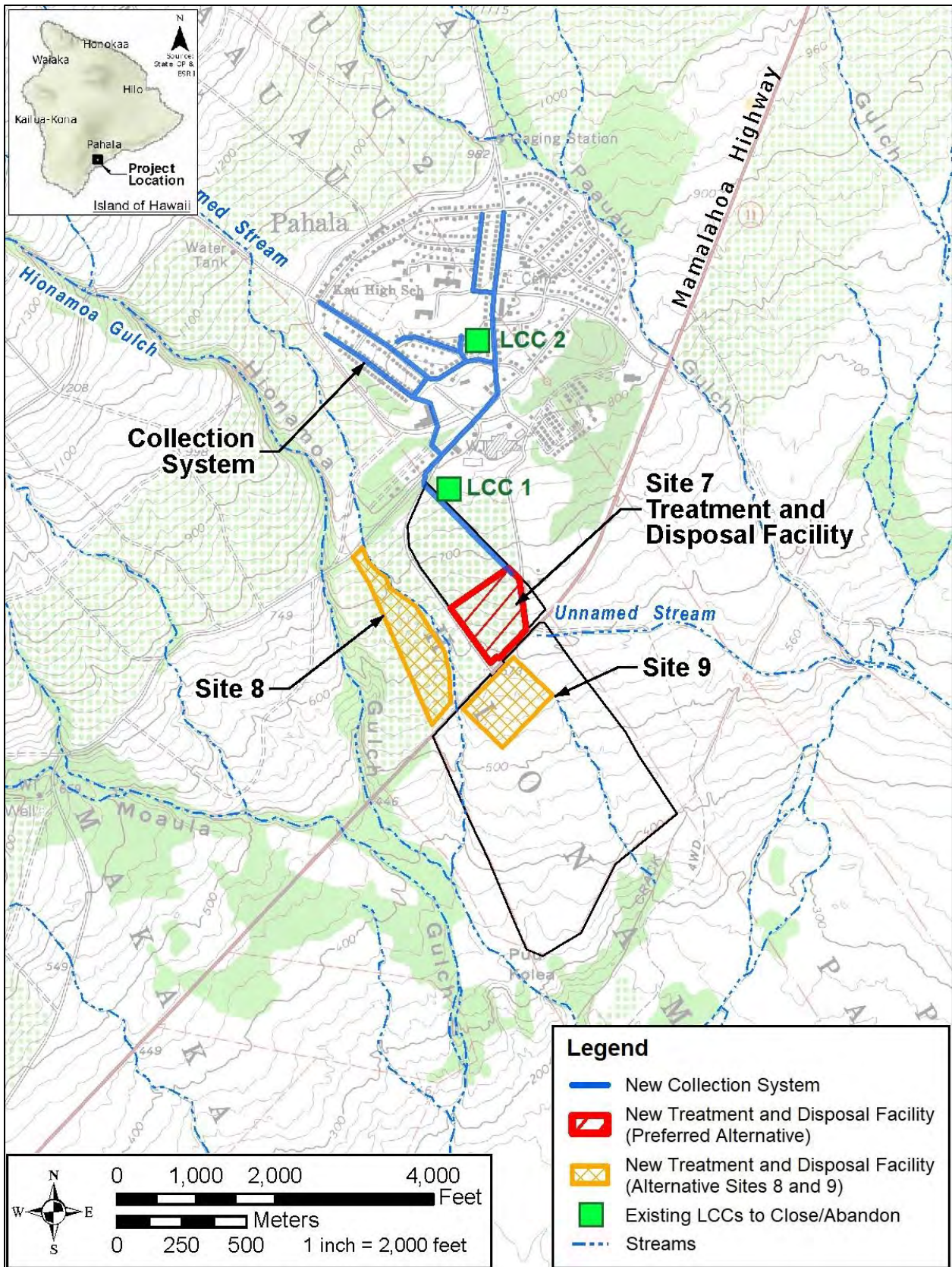


Patrick Goodwin  
Environmental Scientist

Enclosures

**Figure 1 – Project Location Map**





**Figure 1. Project Location Map (Site 7)**

**Figure 2. Preliminary Site Plan for New Wastewater Treatment and Disposal Facility at Site 7**

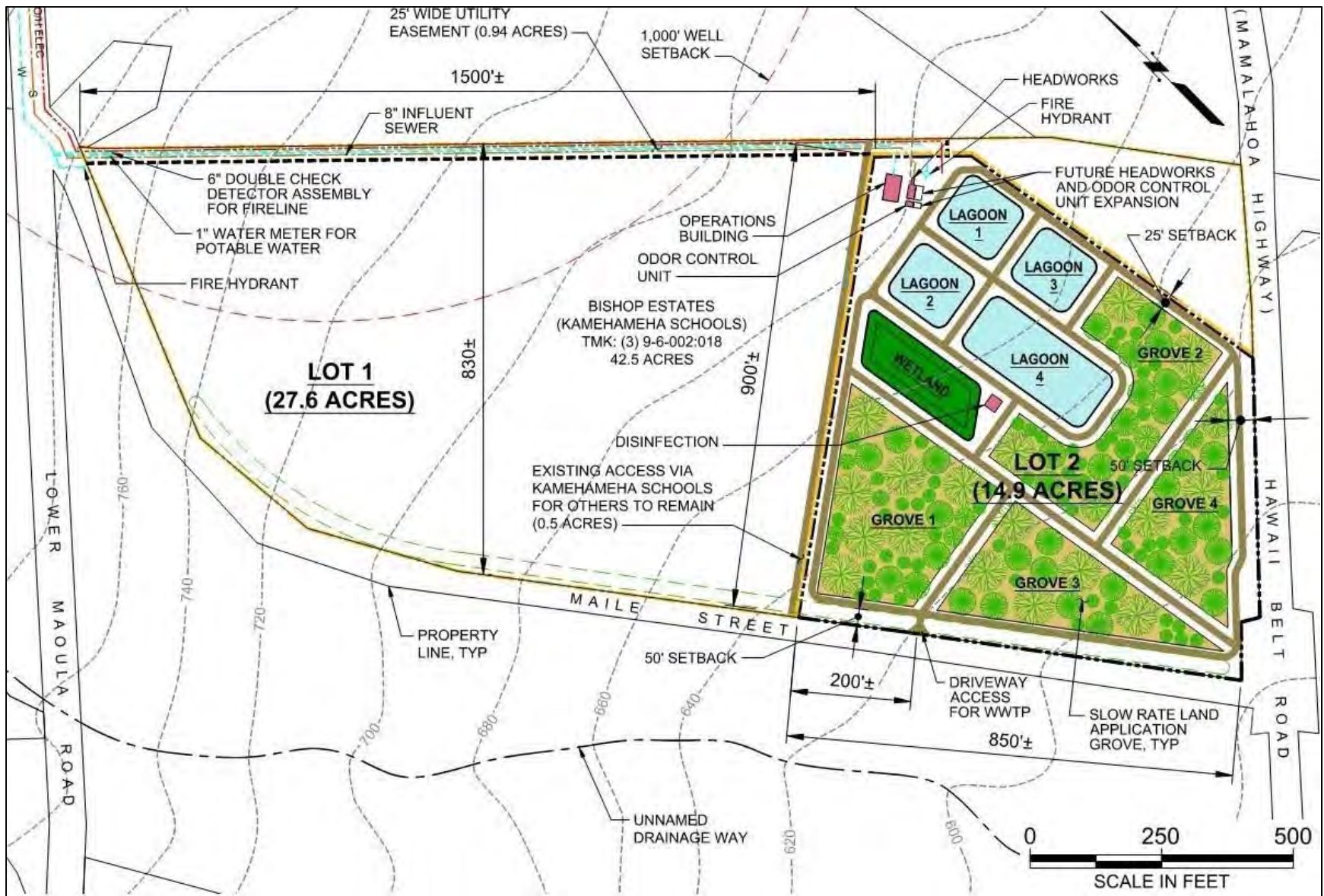
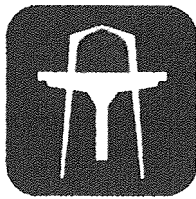


Figure 2. Preliminary Site Plan for New Wastewater Treatment and Disposal Facility at Site 7

**Pre-consultation Letter to FWS, March 15, 2018**



**WILSON OKAMOTO**  
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10349-01  
March 15, 2018

Ms. Mary Abrams, Field Supervisor  
U.S. Department of the Interior  
Fish and Wildlife Service  
300 Ala Moana Boulevard  
Room 3-122, Box 50088  
Honolulu, HI 96850

**Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Request for Comment**

Dear Ms. Abrams:

Wilson Okamoto Corporation is preparing a Draft Environmental Assessment (EA) for the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement, Pā'au'au, Ka'u, Hawai'i project. The Pāhala Community Large Capacity Cesspool Replacement project will be funded by a U.S. Environmental Protection Agency (EPA) Special Appropriation Grant and by the State of Hawaii Clean Water State Revolving Fund (SRF) loan program. A project summary sheet and location map are enclosed for your information.

As part of the Draft EA pre-assessment consultation process, we are soliciting comments you may have on the proposed Pāhala Community Large Capacity Cesspool Replacement project. Please submit your comments to:

Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826  
Attn: Earl Matsukawa, AICP

We would appreciate your comments by April 16, 2018. If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

**Enclosures**

cc: D. Beck, DEM (w/o encl.)  
K. Rao, EPA (w/o encl.)  
C. Lekven, PE, BC (w/o encl.)

**PROJECT SUMMARY**  
**Pāhala Community Large Capacity Cesspool Closure**  
**Pā'au'au, Ka'u, Island of Hawai'i**  
**Tax Map Key: 9-6-002:018**

## **1. Introduction**

The community of Pāhala is located about 52 miles southeast of Hilo, in the Ka'u District, Island of Hawai'i. Pāhala is located west (mauka) of Māmalahoa Highway (State Route 11) about 3.8 miles from the shoreline with most of the community lying between 980 feet mean sea level (msl) on the western end and approximately 800 feet msl on the eastern end. See Figure 1. The Pāhala community had its start in 1876 with establishment of the Hawaiian Agricultural Company to develop the sugar industry in Hawai'i. For the next 120 years or so, Pāhala was a major sugar producing area. However, by the early 1990s there was a major downturn in the sugar market. Thus, beginning in 1994, the sugar mill in the town was shut down and dismantled. By 1996, the Ka'u Sugar Company, the successor to the Hawaiian Agricultural Company, closed and, subsequently, the sugar cane fields were cleared and the lands now grow macadamia nut and coffee trees. The population in Pāhala was approximately 1,405 persons in 2016, the most current estimate.

Founded in 1826, C. Brewer was both the oldest company in Hawai'i and a major developer of the sugar industry in Pāhala. For about the last 60 years, approximately 50 percent of the residential units in Pāhala have been serviced by a wastewater collection and disposal system constructed, operated and maintained by C. Brewer. The collection system consisted of sewer lines, some of which were located in the streets and others routed in the backyards of private parcels. The disposal system consisted of two large capacity cesspools (LCCs) within the community.

In 1998, the US Environmental Protection Agency (EPA) issued regulations (40 CFR 144.14) requiring the elimination or closure of all large capacity cesspools used for wastewater disposal by April 5, 2005. In 2003, C. Brewer requested assistance from the County to close their LCCs. Subsequently, the County held a community meeting to present sewer system replacement alternatives. Voting took place by mail to choose the preferred sewer improvement alternative, resulting in 87 percent of returned ballots in favor of installing a new sewer collection, treatment and disposal system to be operated and maintained by the County.

In 2006, in anticipation of its dissolution, C. Brewer requested the County construct and maintain a new community sewer system. The County subsequently agreed by way of a County Council Resolution, to enter into a formal agreement to assume ownership of the C. Brewer constructed collection system and the two LCCs by April 30, 2010 and to construct and maintain a new community sewer system. As part of the County's agreement, C. Brewer agreed to install laterals to certain of the residential properties.

In 2007, the County proposed a new collection system and a wastewater treatment system, consisting of large capacity septic tanks and converting the existing LCCs into seepage pits for disposal of the treated effluent. In 2008, the combination of the LCCs being in poor and failing condition and the poor results from soil percolation tests influenced the County to consider acquiring a larger land area to construct a secondary treatment system. Such a system could allow a higher level of wastewater treatment and disposal, as well as accommodate existing Pāhala properties not currently served by the LCC system in addition to expanding the system to accommodate possible community growth.

## **2. Project Description**

The County of Hawai'i, Department of Environmental Management (DEM) is proposing to construct wastewater system improvements to replace the current system servicing Pāhala, now owned by the County. The wastewater system improvements would allow the County to comply with EPA

**PROJECT SUMMARY**  
**Pāhala Community Large Capacity Cesspool Closure**  
**Pā'au'au, Ka'u, Island of Hawai'i**  
**Tax Map Key: 9-6-002:018**

regulations requiring closure of the LCCs and to construct a system meeting current State of Hawai'i Department of Health (DOH) and DEM design guidelines for the collection, treatment and disposal of the treated effluent. The Pāhala Community Large Capacity Cesspool Closure project improvements would consist of a new wastewater collection system located within the public right-of-way and a treatment and disposal system located on a currently privately-owned parcel (TMK: 9-6-002: 018) which will be acquired by the County. The Pāhala Community Large Capacity Cesspool Closure project would be funded by an EPA Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (SRF) loan program.

The wastewater collection system would be located within 7 public streets; Maile Street; 'Ilima Street; Huapala Street; Hīnano Street; Hala Street; all located in the southern portion of the community and Puahala Street; and Pīkake Street located on the eastern end. These streets serve the residential areas and have two travel lanes with unpaved shoulders and no improved sidewalks. The collection system would consist of approximately 11,000 linear feet of gravity flow piping ranging from 8 to 12 inches in diameter. The collection system is not anticipated to include pump stations, nor will the system collect stormwater runoff. The number of manholes in the system will be determined during the detail design phase. The County's sewer standards show the trenches for sewer lines would require at least 4 feet of cover from the top of the pipe to grade and 12 inches of cushion material on both sides of the line and 6 inches below the line. Therefore, the typical sewer trenches will be 3 feet wide and at least 6 feet deep.

The treatment and disposal system would be a land-based system located southeast of the developed community and would be designed to treat flows of approximately 190,000 gallons per day. The EPA defines land treatment as "the application of appropriately pre-treated municipal and industrial wastewater to the land at a controlled rate in a designed and engineered setting. The purpose of the activity is to obtain beneficial use of these materials, to improve environmental quality, and to achieve treatment goals in a cost-effective and environmentally sound manner".

The proposed treatment and disposal system would occupy about 14 acres and consist of a headworks with screens to remove debris and an odor control unit, four lined aerated lagoons of about 0.3 acres each, an operations building with adjacent disinfection system to remove pathogens, a subsurface flow constructed polishing wetland to remove nitrogen and four slow rate (SR) land treatment basins which will be surrounded by berms on all four sides. SR land treatment involves irrigation of land and vegetation with the treated effluent. Significant additional treatment is provided as the water percolates through the soil. The vegetation uptakes the nutrients in the effluent as fertilizer, and transpires a portion of the applied water. A security fence will be constructed along the perimeter of the site.

### **3. Anticipated Impacts**

Project impacts would be primarily related to construction of the trenches for placement of the collection system lines and construction of the land-based treatment and disposal system. These activities would create dust and noise while work occurs in the streets and in the area of the land treatment and disposal system, which will include removal of existing macadamia nut trees within the 14 acre project site. As the collection system is constructed, the streets will be restored for vehicle travel. Upon completion of the treatment and disposal facilities, the project will operate without the need for DEM employees to be on-site. Weekly monitoring visits will be sufficient to insure routine proper operation, and a telemetry system will alert DEM employees of abnormal conditions to allow timely response when they occur.

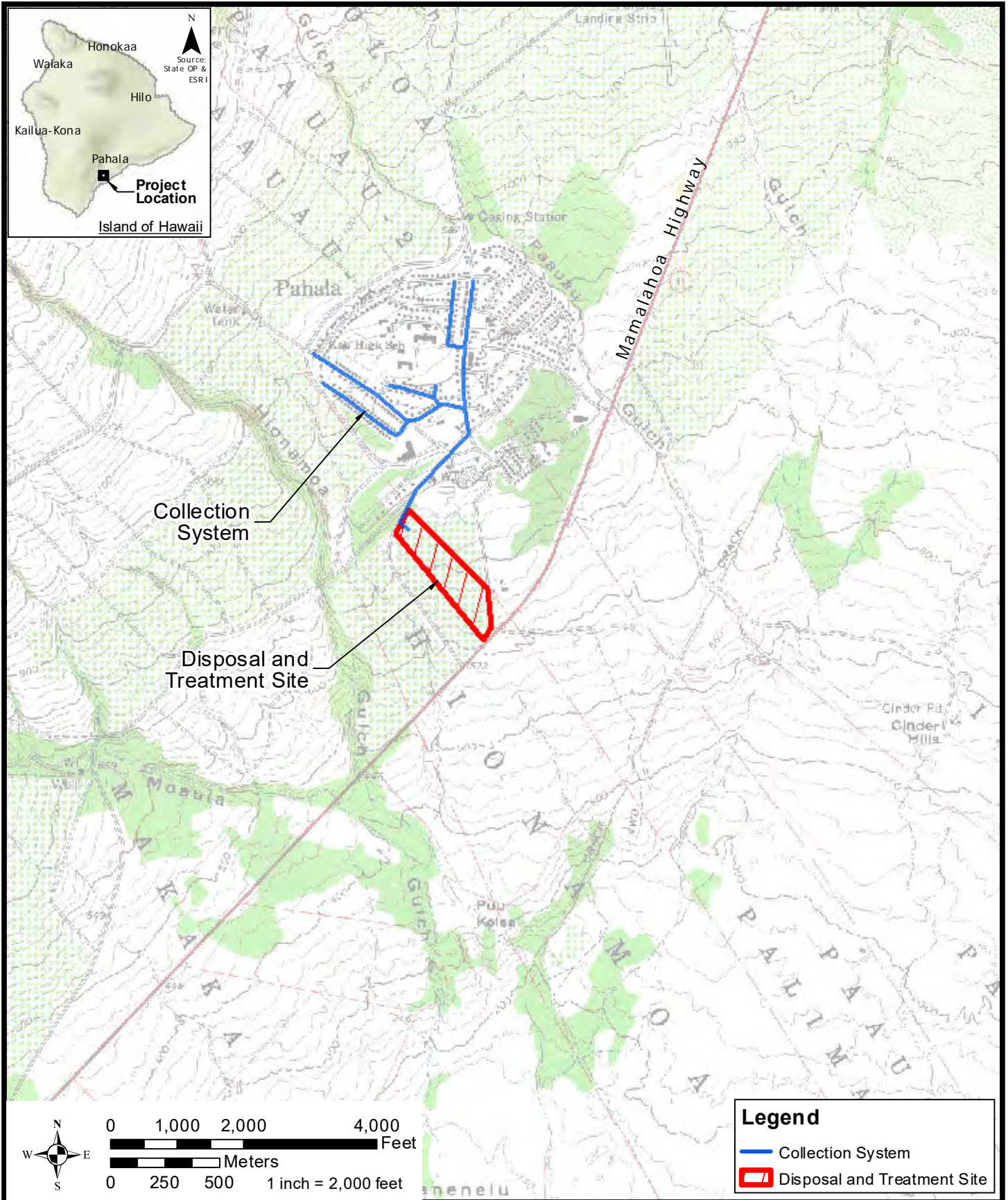


FIGURE 1  
PROJECT LOCATION MAP

PAHALA COMMUNITY LARGE CAPACITY CESSPOOL CLOSURE PROJECT  
COUNTY OF HAWAII DEPARTMENT OF ENVIRONMENTAL MANAGEMENT





**Pre-consultation Comments from FWS, April 23, 2018**



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850



In Reply Refer To:  
01EPIF00-2018-TA-0275

April 23, 2018

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826

Subject: Comments for the Draft Environmental Assessment for the County of Hawaii  
Department of Environmental Management Pahala Community Large Capacity  
Cesspool Replacement, Paauau, Kau, Island and County of Hawaii

Dear Mr. Matsukawa:

The U.S. Fish and Wildlife Service (Service) received your correspondence on April 9, 2018, requesting technical assistance in the preparation for the Draft Environmental Assessment for the County of Hawaii Department of Environmental Management Pahala Community Large Capacity Cesspool (LCC) Replacement in Paauau, Kau, (TMK: 9-6-002: 018). The Service offers the following comments to assist you in your planning process so that impacts to trust resources can be avoided through site preparation, construction, and operation. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C 1531 *et seq.*).

The County of Hawaii Department of Environmental Management (DEM) is proposing to construct wastewater system improvements to replace the current system servicing Pahala, now owned by the County. The wastewater system improvements would allow the County to comply with Environmental Protection Agency (EPA) regulations requiring closure of the LCC's and to construct a system meeting current State of Hawaii Department of Health and DEM design guidelines for the collection, treatment, and disposal of the treated effluent. The Pahala Community LCC closure project improvements would consist of a new wastewater collection system located within the public right-of-way and a treatment and disposal system located on a currently privately-owned parcel which would be acquired by the County. The Pahala LCC closure project would be funded by the EPA Special Appropriation Grant and by the State of Hawaii Clean Water State Revolving Fund loan program.

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Project, eight (8) listed species that have the potential to either be in or fly through the vicinity of the project area: The federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), Hawaiian hawk (*Buteo solitarius*), Nene

*Branta* (= *Nesochen*) *sandvicensis*), Hawaiian petrel (*Pterodroma sandwichensis*), Band-rumped storm-petrel (*Oceanodroma castro*), the threatened Newell's shearwater (*Puffinus auricularis newelli*), Hawaiian stilt (*Himantopus mexicanus knudseni*), and the Hawaiian coot, (*Fulica alai*).

## **Avoidance and Minimization Measures**

### **Hawaiian hoary bat**

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend incorporating the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

### **Hawaiian hawk**

The Hawaiian hawk is known to occur across a broad range of forest habitats throughout the Island of Hawaii. Loud, irregular and unpredictable activities, such as using heavy equipment or building a structure, near an endangered Hawaiian hawk nest may cause nest failure.

Harassment of Hawaiian hawk nesting sites can alter feeding and breeding patterns or result in nest or chick abandonment. Nest disturbance can also increase exposure of chicks and juveniles to inclement weather or predators.

To avoid and minimize impacts to Hawaiian hawks we recommend you consider incorporating the following applicable measures into your project description:

- If work must be conducted during the March 1 through September 30 Hawaiian hawk breeding season, have a biologist familiar with the species conduct a nest search of the project footprint and surrounding areas immediately prior to the start of construction activities.
  - Pre-disturbance surveys for Hawaiian hawks are only valid for 14 days. If disturbance for the specific location does not occur within 14 days of the survey, conduct another survey.
- No clearing of vegetation or construction activities within 1,600 feet of any active Hawaiian hawk nest during the breeding season until the young have fledged.
- Regardless of the time of year, no trimming or cutting trees containing a hawk nest, as nests may be re-used during consecutive breeding seasons.

### **Nene**

Nene are found on the islands of Hawaii, Maui, Molokai, and Kauai predominately, with a small population on Oahu. They are observed in a variety of habitats, but prefer open areas, such as

pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize potential project impacts to Nene we recommend incorporating the following applicable measures into your project description:

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

#### **Hawaiian petrel, Band-rumped storm-petrel, and Newell's shearwater**

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

#### **Hawaiian stilt and Hawaiian coot**

Listed Hawaiian waterbirds are found in fresh and brackish-water marshes and natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation.

Based on the project details provided, our information suggests that your project may result in standing water or the creation of open water, thus attracting Hawaiian waterbirds to the site. In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water),

if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

To avoid and minimize potential project impacts to Hawaiian waterbirds we recommend you incorporate the following applicable measures into your project description:

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- If water resources are located within or adjacent to the project site, incorporate applicable best management practices regarding work in aquatic environments into the project design.
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the proposed project site prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
  - Contact the Service within 48 hours for further guidance.
  - Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.

Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth moving activities until the chicks fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

### **Invasive Species**

To avoid and minimize the risk of the road construction introducing harmful invasive pests including coqui, ants, and weeds into the project sites, we recommend the following measures be implemented by project contractors:

- Vehicles, machinery, and equipment must be thoroughly pressure washed and visibly free of mud, dirt, plant debris, frogs and frog eggs, insects and other debris. A hot water wash is preferred. Areas of particular concern include bumpers, grills, hood compartments, areas under the battery, wheel wells, undercarriage, cabs, and truck beds.
- The interior and exterior of vehicles, machinery, and equipment must be free of rubbish and food. The interiors of vehicles and the cabs of machinery must be vacuumed clean. Floor mats will be sanitized with a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.
- All work vehicles, machinery, and equipment may be subject to inspection.
- Any vehicles, machinery, and equipment that do not pass inspection will be turned away.
- Staging areas must be kept free of invasive pests.

### **Minimize Spread of Rapid Ohia Death**

Rapid Ohia Death (ROD), a newly identified disease, has killed large numbers of mature ohia trees (*Metrosideros polymorpha*) in forests and residential areas of Hawaii Island. The disease is

caused by a vascular wilt fungus (*Ceratocystis fimbriata*). Crowns of an affected tree turn yellowish or brown within days to weeks and dead leaves typically remain on branches for some time. All ages of ohia trees can be affected and can have symptoms of browning of branches or leaves. As of early 2017 the disease has been confirmed in all districts except North and South Kohala. Additional information on ROD can be found at:

<http://www2.ctahr.hawaii.edu/forestry/downloads/ROD-trifold-03.2016.pdf> and  
[http://www2.ctahr.hawaii.edu/forestry/disease/ohia\\_wilt.html](http://www2.ctahr.hawaii.edu/forestry/disease/ohia_wilt.html).

The following avoidance and minimization measures should be followed for projects working in ohia forests or at sites with ohia trees on Hawaii Island:

- 1) A survey of the proposed project site should be conducted within two weeks prior to any tree cutting to determine if there are any infected ohia trees. If infected ohia are suspected at the site, the following agencies should be contacted for further guidance.
  - a. Service – please contact the name at the bottom of this letter.
  - b. Dr. J.B. Friday, University of Hawaii Cooperative Extension Service, 808-969-8254 or [jbfriday@hawaii.edu](mailto:jbfriday@hawaii.edu)
  - c. Dr. Flint Hughes, USDA Forest Service, 808-854-2617, [fhughes@fs.fed.us](mailto:fhughes@fs.fed.us)
  - d. Dr. Lisa Keith, USDA Agriculture Research Service, 808-959-4357, [Lisa.Keith@ars.usda.gov](mailto:Lisa.Keith@ars.usda.gov)
- 2) Both prior to cutting ohia and after the project is complete:
  - a. Tools used for cutting infected ohia trees should be cleaned with a 70 percent rubbing alcohol solution. A freshly prepared 10 percent solution of chlorine bleach and water can be used as long as tools are oiled afterwards, as chlorine bleach will corrode metal tools. Chainsaw blades should be brushed clean, sprayed with cleaning solution, and run briefly to lubricate the chain.
  - b. Vehicles used off-road in infected forest areas should be thoroughly cleaned. The tires and undercarriage of the vehicle should be cleaned with detergent if they have travelled from an area with ROD or travelled off-road. Use a pressure washer with soap to clean all soil off of the tires and vehicle undercarriage.
  - c. Shoes and clothing used in infected forests should also be cleaned. Shoes should be decontaminated by dipping the soles in 70 percent rubbing alcohol to kill the ROD fungus. Other gear can be sprayed with the same cleaning solutions. Clothing can be washed in hot water and detergent.
  - d. Wood of affected ohia trees should not be transported to other areas of Hawaii Island or interisland. All cut wood should be left on-site to avoid spreading the disease. The pathogen may remain viable for over a year in dead wood. The Hawaii Department of Agriculture has passed a quarantine rule that prohibits interisland movement, except by permit, of all ohia plant or plant parts.

If this project should receive federal funding, federal permit, or any federal authorization, it will require a Section 7 consultation with the Service. The Service only conducts Section 7 consultations with the federal action agency or their designated representative.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact Eldridge Naboa, Fish and Wildlife Biologist, 808-284-0037, e-mail: [eldridge\\_naboa@fws.gov](mailto:eldridge_naboa@fws.gov). When referring to this project, please include this reference number: ***01EPIF00-2018-TA-0275***.

Sincerely,

Jodi Charrier  
Acting Island Team Leader  
Maui Nui and Hawaii Island

**Non-Federal Representative Designation Letter to FWS, June 7, 2018**





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

JUN 07 2018

Jodi Charrier  
Acting Island Team Leader  
Maui Nui and Hawaii Island  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

**SUBJECT: Designation of Non-Federal Representative under Section 7 of the Endangered Species Act (Reference: 01EPIF00-2018-TA-0275)**

Dear Ms. Charrier:

The U.S. Environmental Protection Agency Region 9 (EPA) awarded a Special Appropriation Act Project (SAAP) grant to the County of Hawaii for the Pahala Community Large Capacity Cesspool (LCC) Replacement Project. This project triggers the application of the National Environmental Policy Act (NEPA) and numerous Federal cross-cutting authorities including the Endangered Species Act (ESA).

Pursuant to 50 C.F.R. §402.08, a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by giving notice to the Director of such designation. In accordance with 50 C.F.R. §402.08, EPA hereby designates Eastern Research Group, Inc. (ERG) to act on EPA's behalf when initiating the ESA consultation process and prepare a biological assessment if needed in connection with the Pahala Community LCC Replacement Project. Effective immediately, ERG may consult with the Fish and Wildlife Service (FWS) to initiate the informal consultation process under Section 7 of the ESA, with responsibilities described herein.

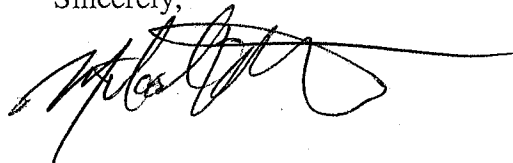
EPA requires, through grant provisions for federally-assisted SAAP projects, that grant recipients implement such measures as are ultimately determined necessary or appropriate during the ESA Section 7 consultation process to avoid adverse effects to listed species or adverse modification of designated or proposed critical habitat. However, EPA will continue to be ultimately responsible for compliance with the Section 7 requirements of the ESA and will remain responsible for participating in the consultation process if:

- there is disagreement between relevant parties regarding the scope of the area of potential effects, identification of endangered species or habitats, or evaluation of effects; or,

- there is an objection from consulting parties or the public regarding findings or determinations or the implementation of agreed provisions.

If you have any questions, please contact Kate Rao, Drinking Water Protection Section, at (415) 972-3533 or via email at [rao.kate@epa.gov](mailto:rao.kate@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Montgomery", with a long horizontal flourish extending to the right.

Mike Montgomery  
Assistant Director, Water Division

cc:

William Kurcharski, County of Hawaii  
Dora Beck, County of Hawaii

**Biological Survey Report, August 16, 2018**

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**Biological survey for the Pāhala Community  
Large Capacity Cesspool Closure Project on lot  
TMK: 9-6-002:018, Ka'ū District, Hawai'i Island**

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Prepared by:

*AECOS, Inc.*

45-939 Kamehameha Hwy, Suite 104

Kāne'ohe, Hawai'i 96744-3221

August 16, 2018

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# Biological survey for the Pāhala Community Large Capacity Cesspool Closure Project on lot TMK: 9-6-002:018, Ka'ū District, Hawai'i Island

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August 16, 2018

*Draft*

AECOS No. 1545

Eric Guinther and Reginald David  
AECOS, Inc.  
45-939 Kamehameha Hwy, Suite 104  
Kāne'ohe , Hawai'i 96744  
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: guinther@aecos.com

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## Introduction

The Hawai'i County Department of Environmental Management, Wastewater Division is proposing to construct a wastewater treatment and disposal system ("Project") to treat sewage collected in Pāhala, Ka'ū District. The treatment and disposal system will be located on a property identified as TMK: 9-6-002:018, north of the intersection of Hawaii Belt Road (Māmalahoa Highway) and Maile Street. This report describes methods used and results of a biological survey conducted in the Project area in August 2018. The primary purpose of the survey was to determine whether any species currently proposed or listed as threatened or endangered under either federal or state endangered species statutes occur on, or could utilize resources within, the Project area.

## Project and Site Descriptions

The WWTP site encompasses the lower, approximately 15 ac (6 ha) of the subject parcel (TMK: 9-6-002:018). Presently the entire parcel is a macadamia nut (*Macadamia integrifolia*) orchard, but with the margins and two narrow windbreak tree lines dominated by other species of trees and herbaceous plants dividing the orchard into northwest-southeast trending units. In addition to the WWTP site, a proposed transmission pipe would be constructed to the northwest through the orchard up to Maile Street. From Maile Street a collection system is planned for many of the streets within Pāhala town (see Figure 1).

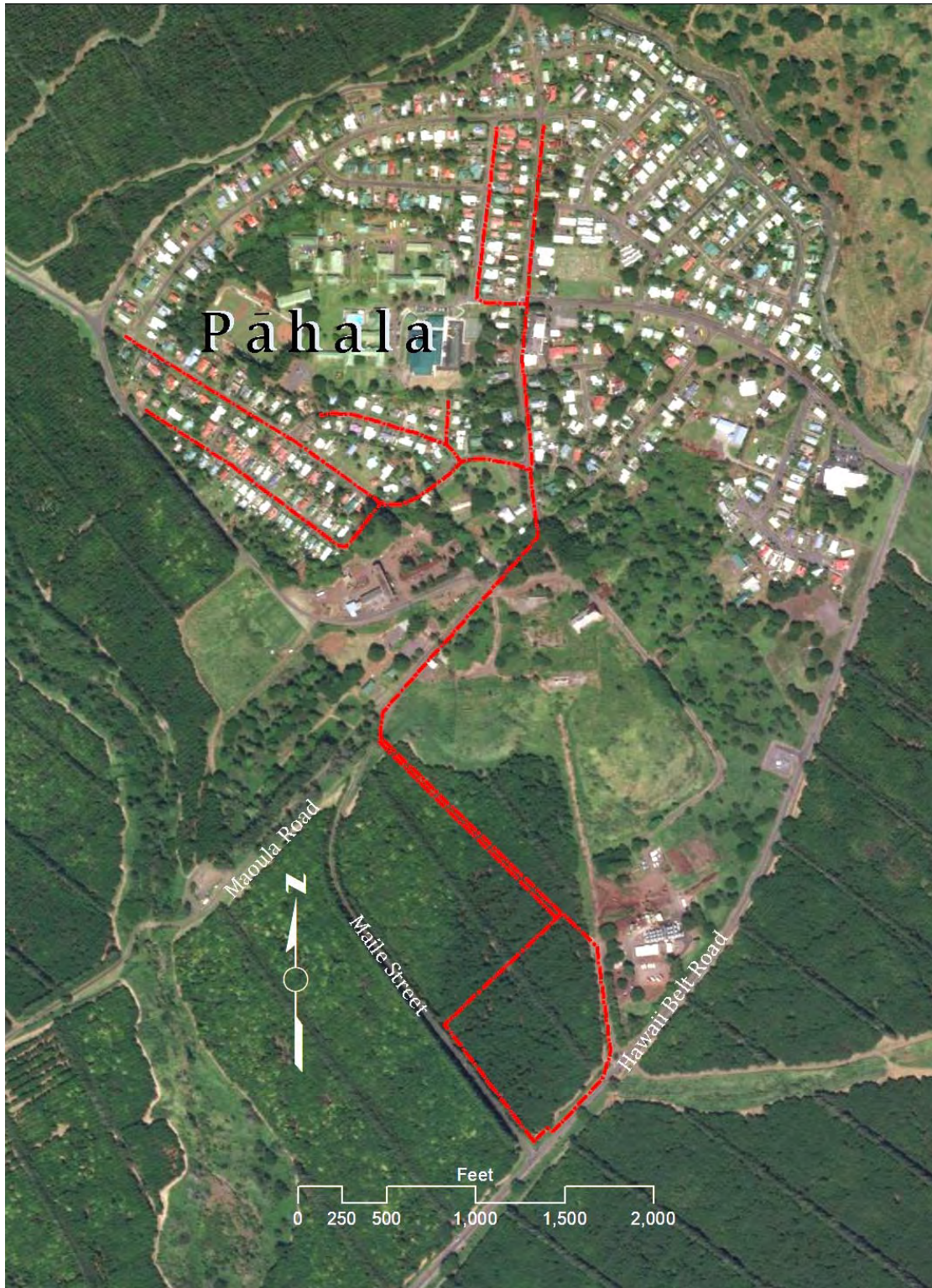


Figure 1. Project and survey areas marked in red, Pāhala.

Macadamia nut trees form a closed crown of dense leaf growth (see cover photo), creating deep shade within most parts of the grove. The dominant understory in these deeply shaded areas is germinating mac nut trees.

## Methods

### Botanical Survey

The botanical survey was undertaken on August 13, 2018 and entailed a wandering pedestrian transect that traversed the subject property, including the area extending north to Maile Road proposed for installation of a collector main. A “windshield” survey was conducted along all the streets proposed for the collection system beyond the surveyed parcel. Plant species were identified as they were encountered and notations made in a field notebook, which was used to develop qualitative abundance values for each species as the survey progressed. On a strictly area basis, only macadamia nut trees, Guinea grass (*Megathyrsus maximus*), and perhaps a couple of other species would have a ranking above uncommon. So, abundance values in this report are relative to areas that support species other than the macadamia nut trees, such as the road verges and other areas surrounding the orchard, unmaintained areas within the orchard, including narrow windbreak lanes that divide the orchard plots into units. The survey period encompassed the early dry season, but most of the vegetation was in a relatively healthy state (the orchard is irrigated as needed). However, early in the dry season found most trees and shrubs absent fruit or flower. This slight limitation did not compromise the discovery of native species of plants.

Plant names used herein follow *Manual of the Flowering Plants of Hawai‘i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, *Hawai‘i’s Ferns and Fern Allies* (Palmer, 2003) for ferns, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental and crop plants. More recent name changes for naturalized plant species follow Imada (2012).

### Avian Survey

Six avian count stations were sited roughly equidistant from each other, four within the WWTP area and two along the collection pipe route upslope to Maile Street. Stations were sited approximately 150 m (490 ft) apart from each other. A single eight-minute avian point count was made at each of the count stations. Field observations were made with the aid of Leica 8 X 42 binoculars and by

listening for vocalizations. The avian counts were conducted in the early morning hours. Time not spent counting at point-count stations was used to search the site for species and habitats not observed during the point counts. Weather conditions were excellent with winds of between 1 and 5 kph and no precipitation.

The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 59th supplements to the Check-List (American Ornithologists' Union, 1998, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chesser et al., 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018).

## Mammalian Survey

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) or 'ōpe'ape'a, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all terrestrial mammalian species detected within the project area.

## Results

### Vegetation

Vegetation within the areas surveyed comprises a macadamia nut orchard of mature trees, unmaintained areas dominated outside the orchard by Guinea grass, lanes of windbreak trees oriented between orchard units, and (mostly) mowed road verge areas. Within the orchard are scattered small plots of ruderal herbaceous plants, in most cases dominated by nodeweed (*Synedrella nodiflora*), but if generally only lightly shaded, a number of other herbaceous species. The windbreak lanes consist of two rows of trees: silk oak (*Grevelia robusta*) and paperbark (*Melaleuca quinquenervia*) and are used in orchard maintenance to stack cut branches and logs. These lanes support many of the herbaceous plants recorded from the orchard. The proposed sewerage collection system will be installed along already paved roadways within Pāhala. The survey in these areas revealed the vegetation to be entirely maintained yards of ornamental plants.



## Flora

A listing of the plant species recorded during the August 2018 survey is provided as Table 1. In all, the listing has 52 species of vascular plants: 2 ferns, one gymnosperm, and 49 species of angiosperms (flowering plants). Only two species (4%) are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Found in low numbers are the ubiquitous, ruderal 'uhaloa (*Waltheria indica*) and the common blue- or purple-flowered morning glory vine: koali 'awa (*Ipomoea indica*). Being widely distributed indigenous species, neither is listed as threatened or endangered or of any special concern.

Table 1. Plant species identified during the August 13, 2018 survey of TMK: 9-6-002:018, Pāhala, Ka'ū District, Hawai'i.

Species listed by family	Common name	Status	Abundance	Notes
FERNS				
NEPHROLEPIDACEAE				
<i>Nephrolepis multiflora</i> (Roxb.) F.M. Jarrett ex C.V. Morton	sword fern	Nat	R	
PTERIDACEAE				
<i>Pityrogramma calomelanos</i> (L.) Link	silver fern	Nat	R	<1>
GYMNOSPERMS				
ARAUCARIACEAE				
<i>Araucaria columnaris</i> (G. Forst.) J.D. Hook.	Cook pine	Nat	0	<1>
FLOWERING PLANTS DICOTYLEDONS				
AMERANTHACEAE				
<i>Amaranthus spinosus</i> L.	spiny amaranth	Nat	R	
APOCYNACEAE				
<i>Carissa macrocarpa</i> (Ecklon) A. de Cand.	natal plum	Orn	R	
<i>Nerium oleander</i> L.	olreander	Orn	R	
ARALIACEAE				
<i>Schefflera actinophylla</i> (Endl.) Harms	umbrella tree	Nat	U	
ASTERACEAE (COMPOSITAE)				
<i>Ageratum conyzoides</i> L.	maile hohono	Nat	R	<1>

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
<b>ASTERACEAE (cont.)</b>				
<i>Bidens pilosa</i> L.	ki; beggartick	Nat	U	<2>
<i>Calyptocarpus vialis</i> Less.	---	Nat	O	<1>
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	Nat	C	<2>
<i>Crassocephalum crepidioides</i> (Benth.) S. Moore	---	Nat	R	
<i>Cyanthillium cinereum</i> L.	little ironweed	Nat	U	<1>
<i>Lactuca serriola</i> L.	prickly lettuce	Nat	U	<1>
Indet.	ruderal weed	Nat	R	<3>
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	Nat	AA	<2>
<b>BASELLACEAE</b>				
<i>Anredera cordifolia</i> (Ten.) Steenis	Madeira vine	Nat	R	<3>
<b>BRASSICACEAE</b>				
<i>Lepidium virginicum</i> L.	---	Nat	R	<2>
<b>CAPPARACEAE</b>				
<i>Cleome gynandra</i> L.	wild spider flower	Nat	O	<1>
<b>CONVOLVULACEAE</b>				
<i>Ipomoea indica</i> (J. Burm.) Merr.	koali 'awa	<b>Ind</b>	R	
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	---	Nat	O	
<i>Merremia tuberosa</i> (L.) J. Rendle	wood rose	Nat	R	
<b>CUCURBITACEAE</b>				
<i>Momordica charantia</i> L.	wild bitter melon	Nat	O	
<b>EUPHORBIACEAE</b>				
<i>Euphorbia heterophylla</i> L.	kaliko	Nat	U	<1>
<i>Euphorbia hirta</i> L.	garden spurge	Nat	O	<2>
<i>Ricinus communis</i> L.	castor bean	Nat	C	<2>
<b>FABACEAE</b>				
<i>Acacia confusa</i> Merr.	Formosan koa	Nat	R	
<i>Leucaena leucocephala</i> (Lam.) deWit	koa haole	Nat	R	<2>
<i>Macroptilium atropurpureum</i> (DC.) Urb.	---	Nat	U	<1>
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine vine	Nat	AA	<2>
<b>LAMIACEAE</b>				
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's ear	Nat	O	<2>
<b>MALVACEAE</b>				
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	Nat	R	
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	Nat	O	<2>
<i>Sida rhombifolia</i> L.	Cuba jute	Nat	C	<2>

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
<b>MALVACEAE (cont.)</b>				
<i>Sida spinosa</i> L.	prickly sida	Nat	R	
<i>Waltheria indica</i> L.	'uhaloa	<b>Ind</b>	U	
<b>MORACEAE</b>				
<i>Ficus microcarpa</i> L. f.	Chinese banyan	Nat	R	<2>
<b>MYRTACEAE</b>				
<i>Melaleuca quinquenervia</i> (Cav.) S.T. Blake	paperbark	Nat	C	
<i>Syzygium cumini</i> (L.) Skeels	Java plum	Nat	U	<2>
<b>PHYTOLACCACEAE</b>				
<i>Rivina humilis</i> L.	coral berry	Nat	U	
<b>PROTEACEAE</b>				
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	silk oak	Nat	C	<2>
<i>Macadamia integrifolia</i> Maiden & Berche	macadamia nut	Nat	AA	
<b>RUBIACEAE</b>				
<i>Spermacoce assurgens</i> Ruiz & Pav.	buttonweed	Nat	C	<1>
<b>MONOCOTYLEDONS</b>				
<b>COMMELINACEAE</b>				
<i>Commelina benghalensis</i> L.	hairy honohono	Nat	R	<1>
<b>CYPERACEAE</b>				
<i>Cyperus gracilis</i> R. Br.	McCoy grass	Nat	U	
<b>POACEAE</b>				
<i>Axonopus compressus</i> (Swartz) P. Beauv.	brd.-lvd. carpet grass	Nat	C	<1>
<i>Cenchrus purpureus</i> (Schumach.) Morrone	elephant grass	Nat	U	
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	Nat	R	
<i>Digiteria</i> sp.	---	Nat	R	
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	Nat	A	<2>
<i>Megathyrsus maximus</i> Jacq.	Guinea grass	Nat	AA	<2>
<i>Setaria verticillata</i> (L.) P. Beauv.	bristly foxtail	Nat	R	

## Legend to Table 1:

Status = distributional status

**Ind** = indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.**Nat** = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778 and well-established outside of cultivation.**Orn** = ornamental; crop or landscape plant not established outside of cultivation.

Abundance = occurrence ratings for plants on property in July 2013.

R - Rare - only one or two plants seen.

Table 1 – Legend (continued).

- U - Uncommon - several to a dozen plants observed.  
 O - Occasional - found regularly, but not abundant anywhere.  
 C - Common - considered an important part of the vegetation and observed numerous times.  
 A - Abundant - found in large numbers; may be locally dominant.  
 AA - Abundant - very abundant and dominant; defining vegetation type.

## Notes:

- <1> Characteristic or found only in the road verge immediately adjacent to the site.  
 <2> Species also reported from close by in David & Guinther (2013).  
 <3> Plant lacking flowers or fruit at time of survey; identification uncertain.

## Avian Survey

A total of 175 individual birds of 13 species, representing nine separate families, was recorded during station counts (Table 2). Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. A closed canopy keeps areas beneath the trees in perpetual twilight. Four species, Northern Cardinal (*Cardinalis cardinalis*), Japanese White-eye (*Zosterops japonicus*), Yellow-fronted Canary (*Ceithagra mozambica*), and Red-billed Leiothrix (*Leiothrix lutea*), accounted for 52% of all birds recorded during station counts. The most frequently recorded species was Northern Cardinal, which accounted for 16% of the total number of individual birds recorded during station point counts. All of the species recorded during the course of this survey are established alien species.

Table 2. Avian species detected during point-counts for the Pāhala Community WWTP Project

Common Name	Scientific Name	ST	RA
PHASIANIDAE - Pheasants & Partridges Meleagridinae -Turkeys			
Wild Turkey	<i>Meleagris gallopavo</i>	A	2.00
COLUMBIFORMES COLUMBIDAE - Pigeons & Doves			
Spotted Dove	<i>Streptopelia chinensis</i>	A	3.17
Zebra Dove	<i>Geopelia striata</i>	A	2.00

Table 2 (continued).

Common Name	Scientific Name	ST	RA
	PASSERIFORMES		
	ZOSTEROPIIDAE - White-eyes		
Japanese White-eye	<i>Zosterops japonicus</i>	A	3.67
	TIMALIIDAE - Babblers		
Chinese Hwamei	<i>Garrulax canorus</i>	A	2.00
Red-billed Leiothrix	<i>Leiothrix lutea</i>	A	3.33
	STURNIDAE - Starlings		
Common Myna	<i>Acridotheres tristis</i>	A	0.17
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies		
	Carduelinae - Carduline Finches and Hawaiian		
	Honeycreepers		
House Finch	<i>Haemorhous mexicanus</i>	A	1.33
Yellow-fronted Canary	<i>Ceithagra mozambica</i>	A	1.50
	CARDINALIDAE - Cardinals & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	4.67
	THRAUPIDAE - Tanagers		
	Thraupinae - Core Tanagers		
Yellow-billed Cardinal	<i>Paroaria capitata</i>	A	1.50
Saffron Finch	<i>Sicalis flaveola</i>	A	1.67
	ESTRILDIDAE - Estrildid Finches		
Scaly-breasted Munia	<i>Lonchura punctulata</i>	A	0.17

## Key to Table 2

**ST** Status.

A Alien – Introduced to the Hawaiian Islands by humans.

**RA** Relative Abundance – Number of birds detected divided by the number of count stations (6).

## Mammalian Survey

Rather remarkably, we recorded no mammalian species within the survey area. Indeed, there was no indication that pigs (*Sus scrofa*) utilize the Project area.

## Discussion

### Botanical Resources

Although some unmaintained or infrequently maintained areas exist on the subject parcel, the entire Project is proposed for land that is highly modified and the flora present subject to alterations, including mowing. Thus, there is no expectation for the site to support remnants of a native forest flora and minimal

opportunity for native plants to become established, the *'uhaloa* and *koali 'awa* being exceptions due to their ability to grow in highly disturbed environments. A previous biological survey (David and Guinther, 2013) conducted on 5 ac (2 ha) of land close by to the east yielded only 25 species of plants, the most abundant being white shrimp plant (*Justicia betonica*), glycine vine, and Guinea grass. Because that area had been highly disturbed, then not disturbed for a long time, species such as the shrimp plant and particularly Guinea grass had become well-established to the exclusion of other species. Sixteen species (24% of the combined species list) were common to both surveys.

Obviously, the macadamia nut orchard is a valuable botanical resource, but a commercial one and not an environmentally sensitive one. The same can be said for the Cook pines (*Araucaria columnaris*) that line Maile Street along the southwestern side of the parcel. These old trees are an important community landscape element to be retained in place by the Project.

### Avian Resources

The findings of the avian survey are consistent with the location of the site, and the monoculture of macadamia nut trees present on it. No native avian species were recorded during the course of this survey.

Although not detected during this survey, endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) have been recorded over-flying the general Project area between April and the end of November each year. The petrel is listed as endangered, and the shearwater as threatened under both federal and State of Hawai'i endangered species statutes. The primary cause of mortality in both Hawaiian Petrel and Newell's Shearwater is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered to be second-most significant cause of mortality of these seabirds in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds can collide with man-made structures and, if not killed outright, dazed or injured birds become prey to feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003). Neither nesting colonies nor appropriate nesting habitat for either of these listed seabird species occur within or close to the current Project site.

## Mammalian Resources

No Hawaiian hoary bats were detected during the course of this survey. It is possible that bats use resources within orchard part of the Project. Although, no rodents were recorded during the course of this survey, it is likely that one or more of the four alien Muridae established on Hawai'i Island—European house mouse (*Mus musculus domesticus*), roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), and black rat (*Rattus exulans hawaiiensis*)—use various resources found within the general Project area on a seasonal basis, especially in the macadamia nut orchard. These human commensal species are drawn to areas of human habitation and activity and all are deleterious to native ecosystems and their dependent native fauna.

## Jurisdictional Waters

The subject parcel slopes down to the southwest corner. A street culvert at that location carries runoff in the area under Māmalahoa Highway (Hawaii Belt Road). The National Wetlands Inventory (NWI) Wetlands Mapper (USFW, nd (a)) shows no features occurring on the parcel and no streams are shown on USGS topographic maps (USGS, 1923). Streams in the Pāhala area of the Island do not flow all the way to the sea, but terminate on Keone'ele'ele Flat to the southwest.

## Critical Habitat

Federally delineated Critical Habitat is not present in Pāhala area (USFWS, 2012). Thus, the Project will not impinge on federally designated Critical Habitat. No equivalent designation exists under state law

## Potential Impacts to Protected Species

No species of plants or animals currently proposed for listing or listed under either the federal or State of Hawai'i endangered species statutes (DLNR 1998, 2015; USFWS, nd (b)) were recorded by this survey. Three faunal species not observed, may occur in the general vicinity and are discussed here.

## Seabirds

The principal potential impact that the construction of the project poses to protected seabirds is the increased threat that birds will be downed after becoming disoriented by lights associated with the proposed action during the

nesting season. The two activities that could pose a threat to these nocturnally flying seabirds are: a) if during construction, it is deemed expedient or necessary to conduct night-time construction activities during the seabird fledging season (which runs from September 15 through December 15); or b) exterior lighting is installed as part of the WWTP facilities. Impacts can be minimized if all external lighting is made dark sky compliant (HDLNR-DOFAW, 2016).

### Hawaiian hoary bat

The potential impact that Project construction poses to the endangered Hawaiian hoary bat would be from clearing and grubbing of the macadamia nut orchard. Trimming or removal of trees within the construction areas may temporarily displace bats using this vegetation for roosting. Hawaiian bats use multiple roosts within their home territories, so the disturbance resulting from removal of trees is likely to be minimal. However, during pupping season, female bats carrying pups may be less able to rapidly vacate a roost site when the tree is felled. Additionally, adult female bats sometimes leave their pups in the roost tree while they themselves forage, and very small pups may be unable to flee a tree that is being felled. Adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft), between June 1 and September 15, the bat pupping season.

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**Summary of Biological Survey Report, August 20, 2018**



**WILSON OKAMOTO**  
C O R P O R A T I O N  
INNOVATORS · PLANNERS · ENGINEERS

10349-01  
August 20, 2018

Ms. Jodi Charrier, Acting Team Leader  
Maui Nui and Hawaii Island  
Fish and Wildlife Service  
U.S. Department of the Interior  
300 Ala Moana Boulevard  
Room 3-122, Box 50088  
Honolulu, HI 96850

Attention: Eldridge Naboa, Fish and Wildlife Biologist

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;  
Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'ū Ka'u, Hawai'i  
Response to Comment (01EPIF00-2018-TA-0275)

Dear Ms. Charrier:

Thank you for your April 23, 2018 comment letter (01EPIF00-2018-TA-0275) and the April 10, 2018 e-mail message from Eldridge Naboa regarding the County of Hawai'i Department of Environmental Management Pāhala Community Large Capacity Cesspool Replacement project. As stated in the Project Summary, the Pāhala Community Large Capacity Cesspool Replacement project would be funded by an Environmental Protection Agency (EPA) Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (CSRF) loan program. As such, we understand consultation will need to be conducted by a federal agency or by a designated non-federal representative.

On June 7, 2018, EPA Region 9 Water Division, designated Eastern Research Group, Inc. (ERG) as the non-federal representative for undertaking the consultation for this project.

As part of the Draft EA, in August 2018, botanical and biological field studies were undertaken along the streets and adjacent areas of wastewater collection system and at the 14.9-acre wastewater treatment and disposal facility project site. The results of the field surveys showed the collection system will be installed along already paved roadways within Pāhala. They also revealed that vegetation is located entirely within yards and consist of ornamental plants.

10349-01

Letter to Ms. Jodi Charrier, Acting Team Leader

Page 2

August 20, 2018

The field survey showed 52 species of vascular plants: 2 ferns, one gymnosperm, and 49 species of angiosperms (flowering plants). Only two species (4%) are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Being widely distributed indigenous species, neither is listed as threatened or endangered or of any special concern.

The avian survey recorded a total of 175 individual birds of 13 species, representing nine separate families during station counts. Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. All of the species recorded during the course of the survey are established alien species. No native avian species were recorded during the course of this survey.

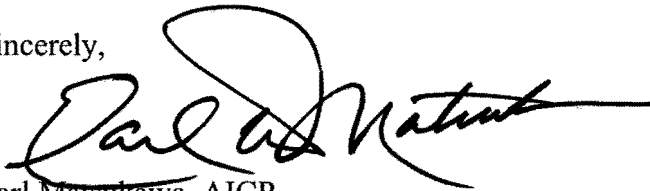
The field survey report indicated that, although not detected during the survey, the endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) have been recorded over-flying the general area between April and the end of November each year. The petrel is listed as endangered, and the shearwater as threatened under both federal and State of Hawai'i endangered species statutes.

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 by the survey.

The Draft EA, will include a discussion of the avoidance and minimization measures as set forth in your April 23, 2108 letter.

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read "Earl Matsukawa". The signature is fluid and cursive, with a large loop at the top.

Earl Matsukawa, AICP  
Vice President, Director – Planning

cc: D. Beck, DEM  
K. Rao, EPA  
B. Rosen, ERG  
C. Lekven, PE, BC





# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

In Reply Refer To:  
01EPIF00-2018-TA-0275  
01EPIF00-2019-I-0153

February 15, 2019

Mr. Patrick Goodwin  
Environmental Scientist  
14555 Avion Parkway, Suite 200  
Chantilly, Virginia 20151-1102

Subject: Informal Consultation for the Pahala Large Capacity Cesspool Replacement Project; Pahala, Kau District, Island and County of Hawaii

Dear Mr. Patrick Goodwin:

The U.S. Fish and Wildlife Service (Service) received your correspondence on December 28, 2018, requesting our concurrence with your determination that the proposed Pahala Large Capacity Cesspool Replacement Project, may affect but is not likely to adversely affect the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), Hawaiian Hawk (*Buteo solitarius*), Hawaiian goose (*Branta (=Nesochen) sandvicensis*), Hawaiian Petrel (*Pterodroma sandwichensis*), Band-rumped Storm-Petrel (*Oceanodroma castro*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), and Hawaiian Coot (*Fulica alai*), and the threatened Newell's Shearwater (*Puffinus newelli*). This response is in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531 *et seq.*).

## **Project Description**

The proposed project is located in Pahala, Kau District, Hawaii. Funding for this project is provided by a Special Appropriation Grant from Environmental Protection Agency (EPA) and a loan from the State of Hawaii Clean Water State Revolving Fund. The project involves replacing two large-capacity cesspools (LCCs) with a new County-owned wastewater collection system to be constructed primarily within the existing public right-of-way; a treatment and disposal system that will occupy a 14.9-acre site that is currently a privately-owned macadamia nut plantation; and closure of the two LCCs.

The proposed project is located in the community of Pahala, a former sugar farming and processing operation, in the Kau District, Island of Hawaii. In 1999, pursuant to the Safe Drinking Water Act, EPA promulgated regulations (40 CFR 144.14) requiring the elimination or closure of all LCCs by April 2005. In 2010, the C. Brewer Company transferred the ownership and operation of the LCCs to the County, which is bringing these wastewater systems into compliance with the Safe Drinking Water Act.

Once the new system is in place, the County will close and abandon the existing LCCs. This system includes some lines located in the backyards of residential lots and some within public streets; therefore, abandoning the lines in place will minimize impacts related to their excavation and removal. The cut ends of the abandoned laterals to the collection system will be plugged with concrete to prevent unauthorized use of the old system and to avoid the need to maintain an unused underground hydraulic conduit. The two LCCs will also be abandoned and closed; the specific closure methods have not yet been determined but will be consistent with the requirements set forth in Hawaii Administrative Rules §11-23-19.

## **Avoidance and Minimization Measures**

### **Hawaiian hoary bat**

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet (ft) or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 ft above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the Hawaiian hoary bat, the project:

- Will not disturb, remove, or trim woody plants greater than 15 ft tall during the bat birthing and pup rearing season (June 1 through September 15).
- Will not use barbed wire for fencing.

### **Hawaiian hawk**

The Hawaiian hawk is known to occur across a broad range of forest habitats throughout the Island of Hawaii. Loud, irregular and unpredictable activities, such as using heavy equipment or building a structure, near an endangered Hawaiian hawk nest may cause nest failure. Harassment of Hawaiian hawk nesting sites can alter feeding and breeding patterns or result in nest or chick abandonment. Nest disturbance can also increase exposure of chicks and juveniles to inclement weather or predators.

To avoid and minimize impacts to Hawaiian hawks, the project:

- If work must be conducted during the March 1 through September 30 Hawaiian hawk breeding season, a biologist familiar with the species will conduct a nest search of the project footprint and surrounding areas immediately prior to the start of construction activities.
  - Pre-disturbance surveys for Hawaiian hawks are only valid for 14 days. If disturbance for the specific location does not occur within 14 days of the survey, another survey will be conducted.
- Will not clear vegetation or conduct construction activities within 1,600 ft of any active Hawaiian hawk nest during the breeding season until the young have fledged.
- Regardless of the time of year, no trimming or cutting trees containing a hawk nest will occur, as nests may be re-used during consecutive breeding seasons.

**Hawaiian goose**

Hawaiian geese are found on the islands of Hawaii, Maui, Molokai, and Kauai predominately, with a small population on Oahu. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize impacts to the Hawaiian goose, the project:

- Will not approach, feed, or disturb Hawaiian geese.
- If Hawaiian geese are observed loafing or foraging within the project area during the breeding season (September through April), a biologist familiar with the nesting behavior will survey for nests in and around the project area prior to the resumption of any work. Surveys will be repeated after any subsequent delay of work of three or more days (during which the birds may attempt to nest).
  - All work will cease immediately and the Service will be contacted for further guidance if a nest is discovered within a radius of 150 ft of proposed work, or a previously undiscovered nest is found within said radius after work begins.
- In areas where Hawaiian geese are known to be present, the project will post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.

**Hawaiian petrel, Band-rumped storm-petrel, and Newell's shearwater**

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid and minimize potential project impacts to seabirds, the project:

- Will fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Will install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Will avoid nighttime construction during the seabird fledging period, September 15 through December 15.

**Hawaiian stilt and Hawaiian coot**

Listed Hawaiian waterbirds are found in fresh and brackish-water marshes and natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation.

Based on the project details provided, our information suggests that your project may result in standing water or the creation of open water, thus attracting Hawaiian waterbirds to the site. In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water), if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

To avoid and minimize potential impacts to waterbirds, the project:

- To discourage waterbird use of the facility, the subsurface-flow-constructed wetland will not have areas of open water; asphalt rather than gravel will be used to provide access around the lagoons; the lagoons will be lined with a high density polyethylene liner, rather than with substrate that would support vegetation growth; shade balls will be used in the largest lagoon to discourage algal growth; and the lagoons will be bordered by groves rather than bare land.
- The security fence around the perimeter of the treatment and disposal facility will exclude larger non-native mammalian predators.
- In areas where waterbirds are known to be present, the project will post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- If water resources are located within or adjacent to the project site, the project will incorporate applicable best management practices regarding work in aquatic environments into the project design.
- A biological monitor that is familiar with the species' biology will conduct waterbird nest surveys where appropriate habitat occurs within the vicinity of the proposed project site prior to project initiation. Surveys will be repeated again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
  - The Service will be contacted within 48 hours for further guidance.
  - Will establish and maintain a 100-ft buffer around all active nests and/or broods until the chicks/ducklings have fledged. Will not conduct potentially disruptive activities or habitat alteration within this buffer.
- A biological monitor that is familiar with the species' biology will be present on the project site during all construction or earth moving activities until the chicks/ducklings fledge to ensure that waterbirds and nests are not adversely impacted.

### **Minimize Spread of Rapid Ohia Death**

Rapid Ohia Death (ROD), a newly identified disease, has killed large numbers of mature ohia trees (*Metrosideros polymorpha*) in forests and residential areas of Hawaii Island. The disease is caused by a vascular wilt fungus (*Ceratocystis fimbriata*). Crowns of an affected tree turn yellowish or brown within days to weeks and dead leaves typically remain on branches for some time. All ages of ohia trees can be affected and can have symptoms of browning of branches or leaves. As of early 2017 the disease has been confirmed in all districts except North and South Kohala. Additional information on ROD can be found at:

<http://www2.ctahr.hawaii.edu/forestry/downloads/ROD-trifold-03.2016.pdf> and  
[http://www2.ctahr.hawaii.edu/forestry/disease/ohia\\_wilt.html](http://www2.ctahr.hawaii.edu/forestry/disease/ohia_wilt.html).

The following avoidance and minimization measures should be followed for projects working in ohia forests or at sites with ohia trees on Hawaii Island:

- 1) A survey of the proposed project site should be conducted within two weeks prior to any tree cutting to determine if there are any infected ohia trees. If infected ohia are suspected at the site, the following agencies should be contacted for further guidance.
  - a. Service – please contact the name at the bottom of this letter.
  - b. Dr. J.B. Friday, University of Hawaii Cooperative Extension Service, 808-969-8254 or [jbfriday@hawaii.edu](mailto:jbfriday@hawaii.edu)
  - c. Dr. Flint Hughes, USDA Forest Service, 808-854-2617, [fhughes@fs.fed.us](mailto:fhughes@fs.fed.us)
  - d. Dr. Lisa Keith, USDA Agriculture Research Service, 808-959-4357, [Lisa.Keith@ars.usda.gov](mailto:Lisa.Keith@ars.usda.gov)
  
- 2) Both prior to cutting ohia and after the project is complete:
  - a. Tools used for cutting infected ohia trees should be cleaned with a 70 percent rubbing alcohol solution. A freshly prepared 10 percent solution of chlorine bleach and water can be used as long as tools are oiled afterwards, as chlorine bleach will corrode metal tools. Chainsaw blades should be brushed clean, sprayed with cleaning solution, and run briefly to lubricate the chain.
  - b. Vehicles used off-road in infected forest areas should be thoroughly cleaned. The tires and undercarriage of the vehicle should be cleaned with detergent if they have travelled from an area with ROD or travelled off-road. Use a pressure washer with soap to clean all soil off of the tires and vehicle undercarriage.
  - c. Shoes and clothing used in infected forests should also be cleaned. Shoes should be decontaminated by dipping the soles in 70 percent rubbing alcohol to kill the ROD fungus. Other gear can be sprayed with the same cleaning solutions. Clothing can be washed in hot water and detergent.
  - d. Wood of affected ohia trees should not be transported to other areas of Hawaii Island or interisland. All cut wood should be left on-site to avoid spreading the disease. The pathogen may remain viable for over a year in dead wood. The Hawaii Department of Agriculture has passed a quarantine rule that prohibits interisland movement, except by permit, of all ohia plant or plant parts.

The Service has analyzed potential impacts to listed species due to the implementation of your project. Based on the inclusion of the avoidance and minimization measures listed above, the Service anticipates that any potential impacts will be discountable or insignificant and therefore we concur that the Pahala Large Capacity Cesspool Replacement Project may affect, but is not likely to adversely affect the endangered Hawaiian hoary bat, Hawaiian Hawk, Hawaiian goose, Hawaiian Petrel, Band-rumped Storm-Petrel, Hawaiian Stilt, and Hawaiian Coot, and the threatened Newell's Shearwater.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact Eldridge Naboa, Fish and Wildlife Biologist, 808-284-0037, e-mail: [eldridge\\_naboa@fws.gov](mailto:eldridge_naboa@fws.gov). When referring to this project, please include this reference number: **01EPIF00-2019-I-0153**.

Sincerely,

**JODI  
CHARRIER**  
Jodi Charrier  
Acting Island Team Leader  
Maui Nui and Hawaii Island

Digitally signed  
by JODI  
CHARRIER  
Date: 2019.02.15  
15:06:51 -10'00'

**BIOSECURITY PROTOCOLS – HAWAII ISLAND (JULY 2018)**

The following biosecurity protocol (based on National Park Service, State of Hawaii, U.S. Fish and Wildlife, U.S. Geological Survey, and the DOI Office of Native Hawaiian Relations guidance) should be followed when operating on Hawaii Island to prevent the introduction of harmful invasive species including frogs, ants, weeds, and fungi into local natural areas (e.g., Hawaii Volcanoes National Park, Hakalau Forest National Wildlife Refuge, State of Hawaii “Natural Areas”) and areas with native habitat (habitat that is primarily composed of native vegetation), other islands in Hawaiian archipelago, or the U.S. mainland. The protocol also includes suggestions for keeping field staff safe from certain invasive species.

**1. All work vehicles, machinery, and equipment should be cleaned, inspected by its user, and found free of mud, dirt, debris and invasive species prior to entry into the natural areas or native habitat.**

a. Vehicles, machinery, and equipment must be thoroughly pressure washed in a designated cleaning area and visibly free of mud, dirt, plant debris, insects, frogs (including frog eggs) and other vertebrate species such as rats, mice and non-vegetative debris. A hot water wash is preferred. Areas of particular concern include bumpers, grills, hood compartments, areas under the battery, wheel wells, undercarriage, cabs, and truck beds (truck beds with accumulated material (intentionally placed or fallen from trees) are prime sites for hitchhikers).

b. The interior and exterior of vehicles, machinery, and equipment must be free of rubbish and food. The interiors of vehicles and the cabs of machinery must be vacuumed clean. Floor mats shall be sanitized with a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.

c. Any machinery, vehicles, equipment, or other supplies found to be infested with ants (or other invasive species) must not enter natural areas or native habitat. Treatment is the responsibility of the equipment or vehicle owner and operator.

**2. Little Fire Ants – All work vehicles, machinery, and equipment should be inspected for invasive ants prior to entering the natural areas or native habitat.**

a. A visual inspection for little fire ants should be conducted prior to entry into natural areas or native habitat.

b. Hygiene is paramount but even the cleanest vehicle can pick up a little fire ant. Place MaxForce Complete Brand Granular Insect Bait (1.0% Hydramethylnon; <http://littlefireants.com/Maxforce%20Complete.pdf>) into refillable tamper resistant bait stations. An example of a commercially available refillable tamper resistant bait station is the [Ant Café Pro \(https://www.antcafe.com/\)](https://www.antcafe.com/). Place a bait station (or stations) in vehicle. Note larger vehicles, such as trucks, may require multiple stations. Monitor bait stations frequently (every week at a minimum) and replace bait as needed. If the station does not have a sticker to identify the contents, apply a sticker listing contents to the station.

c. Any machinery, vehicles, equipment, or other supplies found to be infested with ants (or other invasive species) must not enter natural areas or native habitat until it is sanitized and re-tested following a resting period. Infested vehicles must be sanitized following recommendations by the Hawaii Ant Lab (<http://www.littlefireants.com/>) or other ant control expert and in accordance

with all State and Federal laws. Treatment is the responsibility of the equipment or vehicle owner.

d. Gravel, building materials, or other equipment such as portable buildings should be baited using MaxForce Complete Brand Granular Insect Bait (1.0% Hydramethylnon; <http://littlefireants.com/Maxforce%20Complete.pdf>) or AmdroPro (0.73% Hydramethylnon; <http://littlefireants.com/Amdro%20Pro.pdf>) following label guidance.

e. Storage areas that hold field tools, especially tents, tarps, and clothing should be baited using MaxForce Complete Brand Granular Insect Bait (1.0% Hydramethylnon; <http://littlefireants.com/Maxforce%20Complete.pdf>) or AmdroPro (0.73% Hydramethylnon; <http://littlefireants.com/Amdro%20Pro.pdf>) following label guidance.

### **3. Base yards and staging areas inside and outside areas must be kept free of invasive species.**

a. Base yards and staging areas should be inspected at least weekly for invasive species and any found invasive removed immediately. Pay particular attention to where vehicles are parked overnight, keeping areas within 10-meters of vehicles free of debris. Parking on pavement and not under trees, while not always practical is best.

b. Project vehicles or equipment stored outside of a base yard or staging area, such as a private residence, should be kept in a pest free area.

### **4. All cutting tools must be sanitized to prevent the Rapid Ohia Death (ROD) fungus.**

a. Avoid wounding ohia trees and roots with mowers, chainsaws, weed eaters, and other tools. Cut only the minimum amount of trees and branches as approved for the project.

b. All cutting tools, including machetes, chainsaws, and loppers must be sanitized to remove visible dirt and other contaminants prior to entry into natural areas or areas with native habitat, and when moving to a new project area within the native habitat area. Tools may be sanitized using a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution. One minute after sanitizing, you may apply an oil based lubricant to chainsaw chains or other metallic parts to prevent corrosion.

c. Only dedicated tools and chainsaws should be used to sample known or suspected ROD infected trees.

d. Vehicles, machinery, and equipment must be cleaned as described in (1) above.

### **5. Imported firewood, logs, and ohia parts:**

a. Ohia firewood, ohia logs, and ohia parts should not be transported.

### **6. For individuals working in the field:**

a. **Before going into the field**, visually inspect and clean your clothes, boots, pack, radio harness, tools and other personal gear and equipment, for seeds, soil, plant parts, insects, and other debris. A small brush is handy for cleaning boots, equipment and gear. Soles of shoes should be sanitized using a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.



b. **Immediately before leaving the field**, visually inspect and clean your clothes, boots, pack, radio harness, tools, and other personnel gear and equipment, for seeds, soil, plant parts, insects, and other debris. Soles of shoes should be sanitized using a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.

c. **Little fire ants nest in trees.** If you are under a tree and that tree is bumped or somehow stressed, the threat response of the ants is to fall from the leaves and sting the person under the tree. If you are subject to an ant attack, do not panic. The ants are extremely small but their stings are painful so make sure you remove all ants from your body and clothing. The stings cause inch long welts that are itchy and painful, and can last for weeks. Treat stings as you would other insect stings. In some persons stings can produce life threatening reactions. Stocking antihistamine in the first aid kit is a reasonable precaution.

d. **Rat Lungworm disease** is caused by a parasite that can infect humans who consume raw or undercooked infected snails or slugs or consume raw produce that contains a small infected snail or slug. Infection is rare but can be serious. Symptoms can include severe headache, neck stiffness, low grade fever, nausea, and vomiting anywhere from 1-6 weeks after exposure. The disease is not spread person to person. Anyone who handles snails or slugs should wear gloves and/or wash hands. Eating unwashed produce is discouraged.

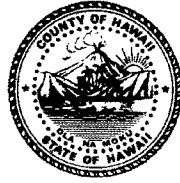
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**Appendix D**  
**Draft Archeological Inventory Survey (AIS) Report**

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Harry Kim  
Mayor

Wilfred M. Okabe  
Managing Director



William A. Kucharski  
Director

Diane A. Noda  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

345 Kekūanāo'a Street, Suite 41 · Hilo, Hawai'i 96720

Ph: (808) 961-8083 · Fax: (808) 961-8086

Email: cohdem@hawaiicounty.gov

March 11, 2019

Dr. Alan S. Downer, SHPD Administrator  
Department of Land and Natural Resources  
State Historic Preservation Division  
601 Kamōkila Boulevard, Suite 555  
Kapolei, Hawai'i 96707

**Re: Draft Archaeological Inventory Survey for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island  
TMKs: (3) 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County of Hawai'i Right-of-Ways (Bautista et al. 2019)  
Submitted for HRS 6E-8 Review**

Dear Dr. Downer:

The County of Hawai'i Department of Environmental Management is submitting the attached Draft Archaeological Inventory Survey (AIS) for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island, TMKs: (3) 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County of Hawai'i Right-of-Ways (Bautista et al. 2019) for SHPD review, along with a 6E submittal filing fee form and check. These materials are additional submittals associated with existing Log No. 2018.000722.

The County of Hawai'i contracted Brown and Caldwell and its sub-consultants, Wilson Okamoto Corporation and Cultural Surveys of Hawai'i Inc., to prepare the attached AIS and has authorized them to coordinate directly with SHPD for processing and review and to address associated SHPD comments for this submittal.

The project's point of contact at the County of Hawai'i Department of Environmental Management is:

Dr. Alan S. Downer, SHPD Administrator

March 11, 2019

Page 2

William A. Kucharski, Director  
345 Kekuanaoa Street, Suite 41  
Hilo, Hawai'i 96720  
Phone: (808) 961-8083  
Email: [william.kucharski@hawaiicounty.gov](mailto:william.kucharski@hawaiicounty.gov)

The project's point of contact at the County of Hawai'i Department of Environmental Management's Wastewater Division is:

Dora Beck, Wastewater Division Chief  
108 Railroad Avenue  
Hilo, Hawai'i 96720  
Phone: (808) 961-8513  
Email: [dora.beck@hawaiicounty.gov](mailto:dora.beck@hawaiicounty.gov)

If you have any questions or comments, please contact Craig Lekven with Brown and Caldwell at (808) 442-3301. You may also reach him by email at [CLekven@brwnald.com](mailto:CLekven@brwnald.com).

Sincerely,



William A. Kucharski  
Director

WK:mef

Encs: Submittal Form  
Draft AIS  
Check for Filing Fee

cc: Diane Noda, DEM Deputy Director  
Dora Beck, DEM-WWD Chief  
Craig Lekven, P.E., Brown and Caldwell  
John Sakaguchi, Wilson Okamoto Corporation



**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
March 11, 2019

Dr. Alan S. Downer, SHPD Administrator  
DLNR-State Historic Preservation Division  
Kākuhihewa Building, Suite 555  
601 Kamōkila Boulevard  
Kapolei, Hawai'i 96707

Attention: Dr. Susan Lebo, Archaeology Branch Chief

Subject: Draft *Archaeological Inventory Survey for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island, TMKs: [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County of Hawai'i Right-of-Ways* (Bautista et al. 2019) submitted for HRS 6E-8 review

Dear Dr. Downer:

We are submitting the following:

- 1) One (1) cardstock copy of the *Draft Archaeological Inventory Survey for the Pāhala Wastewater Treatment Plant and Sewer System Project*, prepared by Cultural Surveys Hawaii, March 2019;
- 2) Filing fee check of \$450.00 payable to: Hawaii Historic Preservation Special Fund; and
- 3) Two (2) copies of the 6E filing fee form.

An electronic document link and related information has been sent to [DLNR.Intake.SHPD@hawaii.gov](mailto:DLNR.Intake.SHPD@hawaii.gov). If you have any questions, please call me at 808-946-2277.

Sincerely,

Earl Matsukawa, AICP  
Vice President, Director of Planning

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Roa, EPA  
C. Levken; BC; W. Folk; CSH

Enclosures



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
KAKUHIHEWA BUILDING  
601 KAMOKILA BLVD, STE 555  
KAPOLEI, HAWAII 96707

**HRS 6E Submittal Filing Fees**

All submittals must have the appropriate filing fee in accordance with HAR §13-275-4 or HAR §13-284-4.  
All contact fields below must be complete and accurate.

Landowner: n/a  
(if privately-owned historic property on Hawaii Register, HRS §6E-10)

Agency: Department of Environmental Management, County of Hawai'i  
Contact Name: William A. Kucharski, Director  
Mailing Address: 345 Kekuanaoa Street Suite 41, Hilo Hawaii 96720  
Phone: (808) 961-8083 Email: william.kucharski@hawaiiicounty.gov

Title of Report/Plan: Draft Archaeological Inventory Survey for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoā, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District,  
Ahupua'a: Hionamoā, Pālima, and ... District: Ka'ū Island: Hawai'i  
TMK(s): [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County of Hawai'i Right-o

Contract Firm: Cultural Surveys Hawai'i  
(firm who completed the work on behalf of the agency)  
Contact Name: William Folk  
Phone: (808) 262-9972 Email: wfolk@culturalsurveys.com

Check if Report/Plan is a re-submittal (no fee)  
 Check if Field Inspection Report requested by SHPD (no fee)  
 Check if **Final Report** (no fee)

\$0 Archaeological Monitoring Report, no resources reported  
 \$25 Archaeological Monitoring Plan  
 \$25 Burial Disinterment Report  
 \$25 Request from Agency for Determination Letter per HAR §13-275  
 \$50 Archaeological Assessment (AIS with negative findings)  
 \$50 Osteological Analysis Report  
 \$100 Archaeological Monitoring Report, resources reported  
 \$150 Archaeological Inventory Survey Plan, Archaeological Data Recovery Plan, or Preservation Plan  
 \$250 Burial Treatment Plan (BTP)  
 \$450 Archaeological, Architectural, or Ethnographic Survey Report  
 \$450 Archaeological Data Recovery Report  
 Fee Total: Make check payable to "Hawaii Historic Preservation Special Fund"

For Office Use Only:

Date Received:	Payment Method:	
	Cash	Amount \$
Log No.:	Check No.	Amount \$
Receipt Issued:	Money Order	Amount \$



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**Draft**

**Archaeological Inventory Survey for the  
Pāhala Wastewater Treatment Plant and  
Sewer System Project,  
Hionamoa, Pālima, and Pā‘au‘au 1 and 2 Ahupua‘a,  
Ka‘ū District, Hawai‘i Island  
TMKs: [3] 9-6-002:016 por. and 018 por.,  
9-6-005:036 por. and 044, and  
County of Hawai‘i Right-of-Ways**

**Prepared for  
Wilson Okomoto Corporation  
and the  
County of Hawai‘i Department of Environmental Management,  
Wastewater Division**

**Prepared by  
Olivier M. Bautista, B.A.,  
Sarah Wilkinson, B.A.,  
and  
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.  
Kailua, Hawai‘i  
(Job Code: HIONAMOA 2)**

**March 2019**

---

**O‘ahu Office  
P.O. Box 1114  
Kailua, Hawai‘i 96734  
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## Management Summary

<b>Reference</b>	Archaeological Inventory Survey for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island, TMKs: [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County of Hawai'i Right-of-Ways (Bautista et al. 2019)
<b>Date</b>	March 2019
<b>Project Number(s)</b>	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: HIONAMOA 2
<b>Investigation Permit Number</b>	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological fieldwork permit numbers 18-15 and 19-07, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-282.
<b>Agencies</b>	United States Environmental Protection Agency (EPA); Hawai'i State Department of Health (DOH); SHPD; County of Hawai'i Department of Environmental Management (DEM), Wastewater Division
<b>Land Jurisdiction</b>	County; private (Kamehameha Schools, Olson Trust)
<b>Project Proponent</b>	County of Hawai'i DEM
<b>Project Funding</b>	EPA (EPA Grant XP-96942401-6); State Revolving Fund
<b>Project Location</b>	The project is located in the town of Pāhala, approximately 5 km (3.1 miles) back from the coast in the Ka'ū District, Hawai'i Island. The project area crosses portions of Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a. The proposed treatment plant is located adjacent to the Maile Street and Hawai'i Belt Road (Route 11) intersection. The project and is depicted on a portion of the 1995 Pahala U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
<b>Project Description</b>	The project includes closure of two Large Capacity Cesspools (LCCs) and development of a new collection system and treatment and disposal facility to service the Pāhala community. The collection system is located on county streets. The treatment disposal facility will occupy 14.9 acres and is located on a portion a 42.5-acre property (TMK: [3] 9-6-002:018) near the southern edge of Pāhala Town presently owned by Kamehameha Schools and under lease to Royal Hawaiian Orchards. Almost the entire parcel is planted in a commercial macadamia nut orchard, with a macadamia nut processing plant parking lot in the southeastern corner outside the limits of the current project area.
<b>Area of Potential Effect (APE) and AIS Project Area Acreage</b>	The project APE comprises 57.7 acres (23.4 hectares) in Pāhala Town, while the AIS project area is a 29.3-acre (11.8 hectares) area within the APE. The TMK parcels listed under "Reference" above are those associated with the project area; a full list of TMK parcels for the overall APE is given in Appendix A.

	<p>The APE includes the following:</p> <ol style="list-style-type: none"> <li>1. The 14.9-acre wastewater treatment plant (WWTP) site, within which all project-related staging, including for the collection system and the treatment and disposal facility, will be located;</li> <li>2. An approximately 1,500-foot (ft) long by 25-ft wide utility easement (about 0.94 acres) located entirely within TMK: [3] 9-6-002:018 to connect the collection system line and other utilities to the WWTP;</li> <li>3. The path of the new sewer collection lines, to be located within the 22- to 24-ft wide travel surface of select county streets;</li> <li>4. Sewer line easements of similar width (22-24 ft) through TMKs: [3] 9-6-005:036 and 044 connecting the collection lines to the proposed Pāhala WWTP site;</li> <li>5. The existing LCC 1 and 2 locales (located in TMKs: [3] 9-6-002:016 and 9-6-016:041, respectively), and an approximately 100-m (328-ft) long by 15-m (49-ft) wide corridor along the existing sewer line easement in TMK: [3] 9-6-002:016 between Maile Street and LCC 1; and</li> <li>6. Numerous single-family residential/other properties with existing sewer laterals, some of which may need to be replaced/repared/rehabilitated by the County.</li> </ol> <p>The AIS project area comprises Items 1–5 within the project APE, except for the LCC 2 location behind a private residence in TMK: [3] 9-6-016:041. It also does not include the numerous private properties located along the county streets selected for new sewer collection lines (Item 6).</p>
<p><b>Historic Preservation Regulatory Context</b></p>	<p>This AIS investigation was designed to comply with both federal and Hawai'i State environmental and historic preservation review legislation. Due to federal (EPA) funding, this project is a federal undertaking, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). As a county project within both private and county lands, the project is also subject to Hawai'i State environmental and historic preservation review legislation (Hawai'i Revised Statutes [HRS] §343 and HRS §6E-8/HAR §13-275, respectively).</p> <p>In consultation with the SHPD, this archaeological inventory survey (AIS) investigation fulfills the requirements of HAR §13-276 and the <i>Secretary of the Interior's Standards for Archaeology and Historic Preservation</i>. It was conducted to identify, document, and make National Register of Historic Places (National Register) and Hawai'i Register of Historic Places (Hawai'i Register) eligibility recommendations for any historic properties. This report is also intended to support any project-related historic preservation consultation with stakeholders such as state and county agencies and</p>

	<p>interested Native Hawaiian Organizations (NHOs) and community groups, if applicable.</p> <p>Pacific Legacy in 2016 conducted an archaeological field inspection of the entire 42.5-acre TMK: [3] 9-6-002:018 (Cleghorn 2016). The 11 November 2016 letter report was addressed to Dora Beck, P.E., Wastewater Division Chief for the County DEM Wastewater Division. The report noted extensive ground disturbance throughout the parcel conducted “prior to the planting of the present macadamia nut orchard. The area at the southeastern corner of the parcel that is not planted in macadamia nut trees has also been extensively disturbed and a portion of it serves as a graveled parking lot for the adjacent macadamia nut processing plant.” A sealed lava tube entrance is present in this corner of the parcel outside the current project area. No surface archaeological features were documented by Cleghorn (2016). A handful of surface artifacts, including a single discoidal hammerstone and fragmental bottle glass and ceramics, were documented within the northern portion of the parcel outside the current project area. Cleghorn (2016) recommended consultation with SHPD about project historic preservation requirements, noting that SHPD would likely require an AIS. Cleghorn (2016) also recommended limiting the project area footprint to avoid the lava tube located in the southeastern corner of TMK: [3] 9-6-002:018.</p> <p>On 17 October 2017 the project proponent provided a written request to the SHPD for a letter of determination in accordance with HAR §13-275-3 (Appendix B). The Cleghorn (2016) letter report was attached as supportive information.</p> <p>CSH on 22 February 2018 met with SHPD Archaeology Branch Chief Dr. Susan Lebo to follow up on a 17 October 2017 request for project determination. During this meeting Dr. Lebo indicated the following:</p> <ul style="list-style-type: none"> <li>• An AIS should be undertaken addressing the entire area of proposed ground disturbance, with subsurface testing;</li> <li>• The AIS should include a “good faith effort” to address possible lava tubes within the area of proposed ground disturbance;</li> <li>• Backhoe assisted excavations should be conducted within select proposed features at the plant site;</li> <li>• All areas of the project not included in TMK: [3] 9-6-002:018 should be addressed, in particular the lateral installations along the county roadways; these areas probably would not require subsurface testing but should be evaluated for any relation to a possible historic plantation village or historic property designation.</li> </ul>
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	<p>The items outlined above, and a more detailed summary of the subsurface testing schema, were supplied in a 22 March 2018 county DEM letter addressed to SHPD, which requested formal written concurrence with the AIS approach; additional materials were subsequently supplied to SHPD on request (see Appendix B). SHPD replied to this letter concurring with the AIS approach in a §6E-8 and NHPA Section 106 Review letter dated 20 August 2018 (Log No.: 2018.00722; Doc. No.: 1808JA02) (Appendix C).</p> <p>CSH on 6 December 2018 met with Dr. Susan Lebo and Dr. Jane Allen of SHPD to discuss the project APE and documentation requirements (Appendix D).</p>
<b>Fieldwork Effort</b>	<p>CSH archaeologists Olivier Bautista, B.A., and Sarah Wilkinson, B.A., conducted fieldwork on 18 September 2018, 1–4 October 2018, and 10 January 2019 under the general supervision of Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 8 person-days to complete.</p>
<b>Consultation</b>	<p>Consultation is being undertaken for the project to comply with Section 106 of the NHPA. Presently, Section 106 consultation with community, agency, and Native Hawaiian Organizations has been initiated and is ongoing by the project proponents. The results of the current investigation will be utilized in these ongoing efforts. To date, no historic properties have been assessed as having traditional cultural significance to an ethnic group (Criterion e) within the project area.</p>
<b>Historic Properties Identified</b>	<p>Two newly documented historic properties were identified through background research: State Inventory of Historic Places (SIHP) #s 50-10-69-31088 is the historic Wood Valley Road/Coastal Road corridor, and SIHP # 50-10-69-31089 is the historic Volcano Road corridor. They are both assessed as significant under Criterion d for yielding important information for research on former rights of way in Pāhala history. Constructed elements of the portions of these road alignments within the project area have been thoroughly impacted by the development of modern roadways, becoming Maile Street and Pikake Street in Pāhala town within the original corridors. Due to the impacts and changes to these roads in Pāhala over time these historic properties only maintain integrity of location of the old corridor.</p> <p>SIHP # s -31088 and -31089 are assessed as significant under Criterion d per HAR §13-275-6 for the information they have yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries.</p>
<b>Effect Recommendation</b>	<p>Following consultation among EPA, DOH, DEM, and SHPD regarding the project effect for the segments of the Wood Valley/Coastal Road (SIHP # 50-10-69-31088) and Volcano Road (SIHP # 50-10-69-31089)</p>

	<p>within the project area under HRS §6E-8, per HAR § 13-275-7(a)(1) the County of Hawai'i DEM's project effect determination is "no historic properties affected." In accordance with federal regulations (36 CFR 800.5), the AIS results support a determination of "no historic properties affected."</p>
<p><b>Mitigation Recommendations</b></p>	<p>No mitigation commitments are recommended for the portions of SIHP #s 50-10-69-31088 and -31089 within the project area. The portions of these historic properties within the project area only maintain integrity of location as all of the constructed elements of the original Wood Valley/Coastal road and Volcano road are no longer evident today.</p> <p>While this project will have no effect on historic properties, archaeological monitoring during construction for identification and/or cautionary measures is proposed. This is based on the location of the project being within the "Pahala Historic District" (SIHP # 50-10-69-07362), as well as the presence near the project area of three historic properties as follows:</p> <ul style="list-style-type: none"> <li>• a lava tube system (SIHP # 50-10-69-27570) with some cultural modifications beneath Pahala town;</li> <li>• Ka'ū High and Pāhala Elementary School (SIHP # 50-10-69-07522), a National Register-eligible historic property; and</li> <li>• the Hawai'i Belt Road, (SIHP # 50-10-47-30187), a National Register-eligible historic property south of the project area.</li> </ul>

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Wilson Okomoto Corporation and on behalf of the County of Hawai'i Department of Environmental Management, Wastewater Division, Cultural Surveys Hawai'i, Inc. (CSH) has prepared this archaeological inventory survey report (AISR) for the Pāhala Wastewater Treatment Plant and Sewer System project, Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island, TMKs: [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County of Hawai'i Right-of-Ways. The project area is located within a larger Area of Potential Effect (APE) in the town of Pāhala. The project area is depicted on a portion of the 1995 Pāhala U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax map plats (Figure 2 and Figure 3), and a 2013 aerial photograph (Figure 4).

The project includes closure of two Large Capacity Cesspools (LCCs) and development of a new collection system and treatment and disposal facility to service the Pāhala community. The collection system is located on county streets. The treatment disposal facility will occupy 14.9 acres and is located on a portion a 42.5-acre property (TMK: [3] 9-6-002:018) near the southern edge of Pāhala Town adjacent to the Maile Street and Hawai'i Belt Road (Route 11) intersection. This parcel is presently owned by Kamehameha Schools and under lease to Royal Hawaiian Orchards. Almost the entire parcel is planted in a commercial macadamia nut orchard, with a macadamia nut processing plant parking lot in the southeastern corner outside the limits of the current project APE.

The project APE comprises 57.7 acres (23.4 hectares) in Pāhala Town, while the AIS project area is a 29.3-acre (11.8 hectares) area within the APE (Figure 5). The TMK parcels listed above are those associated with the project area; a full list of TMK parcels for the overall APE is given in Appendix A. The APE includes the following:

1. The 14.9-acre wastewater treatment plant (WWTP) site, within which all project-related staging, including for the collection system and the treatment and disposal facility, will be located (Figure 6);
2. An approximately 1,500-foot (ft) long by 25-ft wide utility easement (about 0.94 acres) located entirely within TMK: [3] 9-6-002:018 to connect the collection system line and other utilities to the WWTP (see Figure 6);
3. The path of the new sewer collection lines, to be located within the 22- to 24-ft wide travel surface of select county streets;
4. Sewer line easements of similar width (22-24 ft) through TMKs: [3] 9-6-005:036 and 044 connecting the collection lines to the proposed Pāhala WWTP site;
5. The existing LCC 1 and 2 locales (located in TMKs: [3] 9-6-002:016 and 9-6-016:041, respectively), and an approximately 100-m (328-ft) long by 15-m (49-ft) wide corridor along the existing sewer line easement in TMK: [3] 9-6-002:016 between Maile Street and LCC 1; and
6. Numerous single-family residential/other properties with existing sewer laterals, some of which may need to be replaced/repaired/rehabilitated by the County.

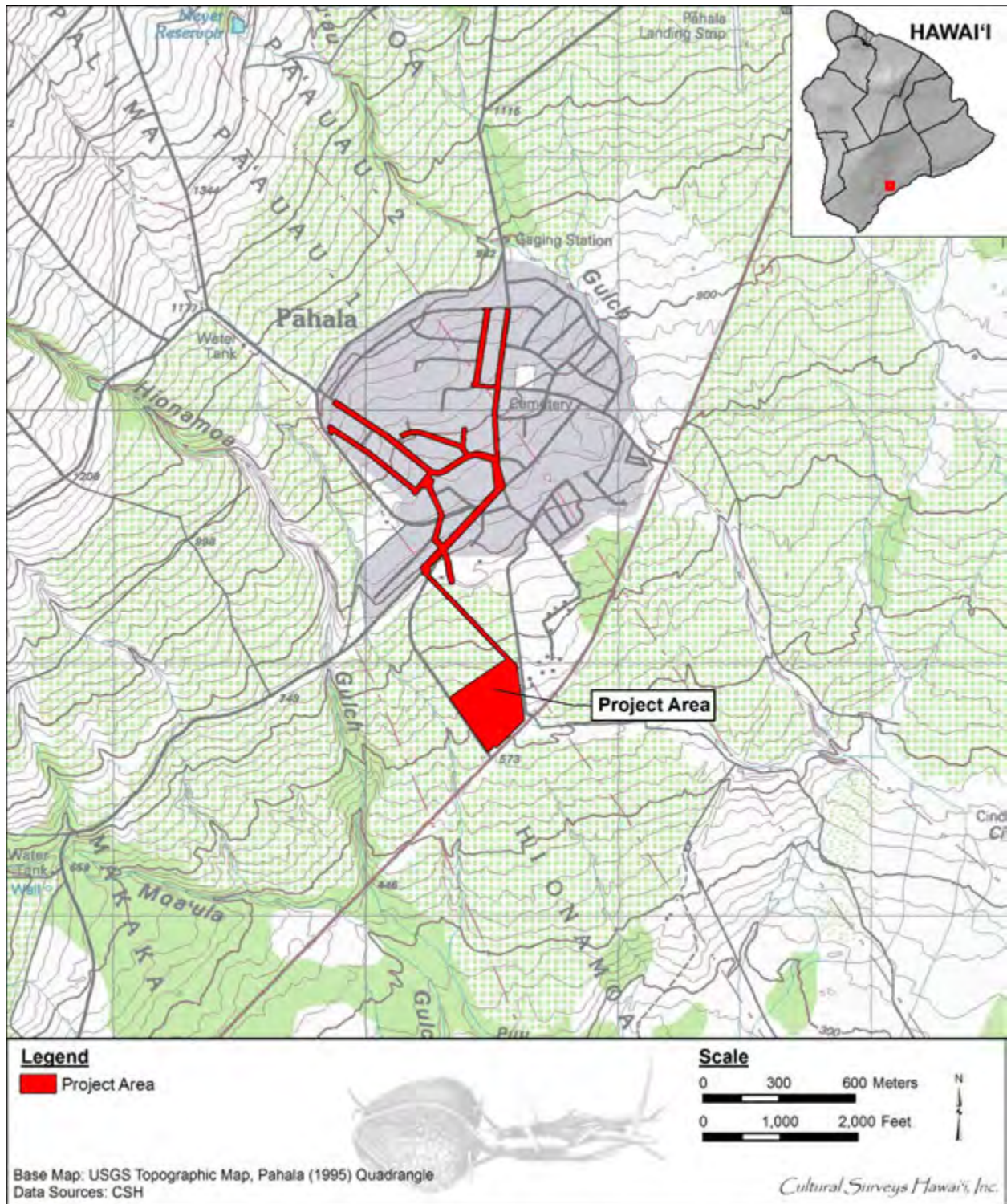


Figure 1. Portion of the 1995 Pahala USGS 7.5-minute topographic quadrangle showing the location of the project area

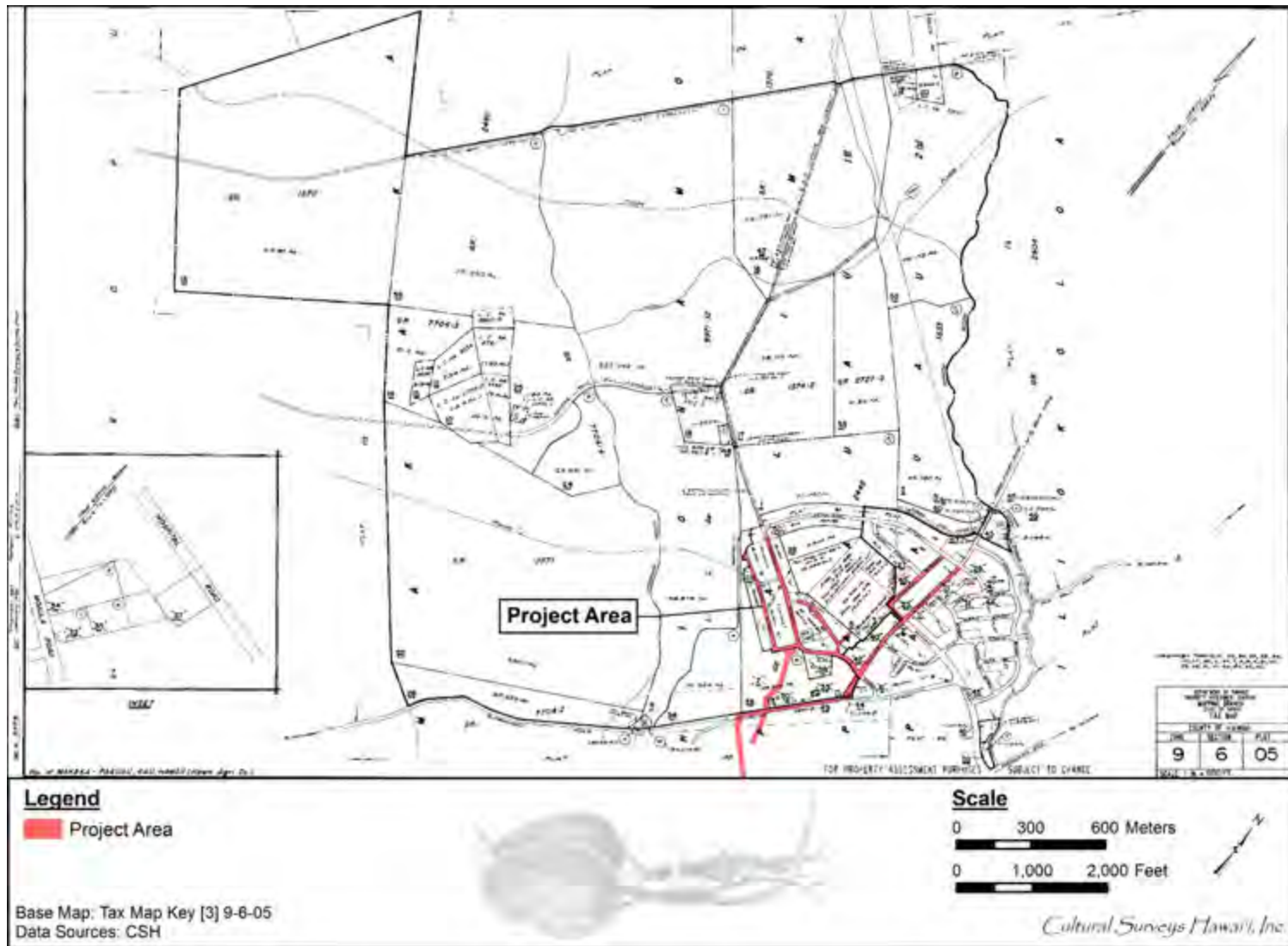


Figure 2. Tax Map Key (TMK) [3] 9-6-05 showing the northern portion of the project area (Hawai'i TMK Service 2018)

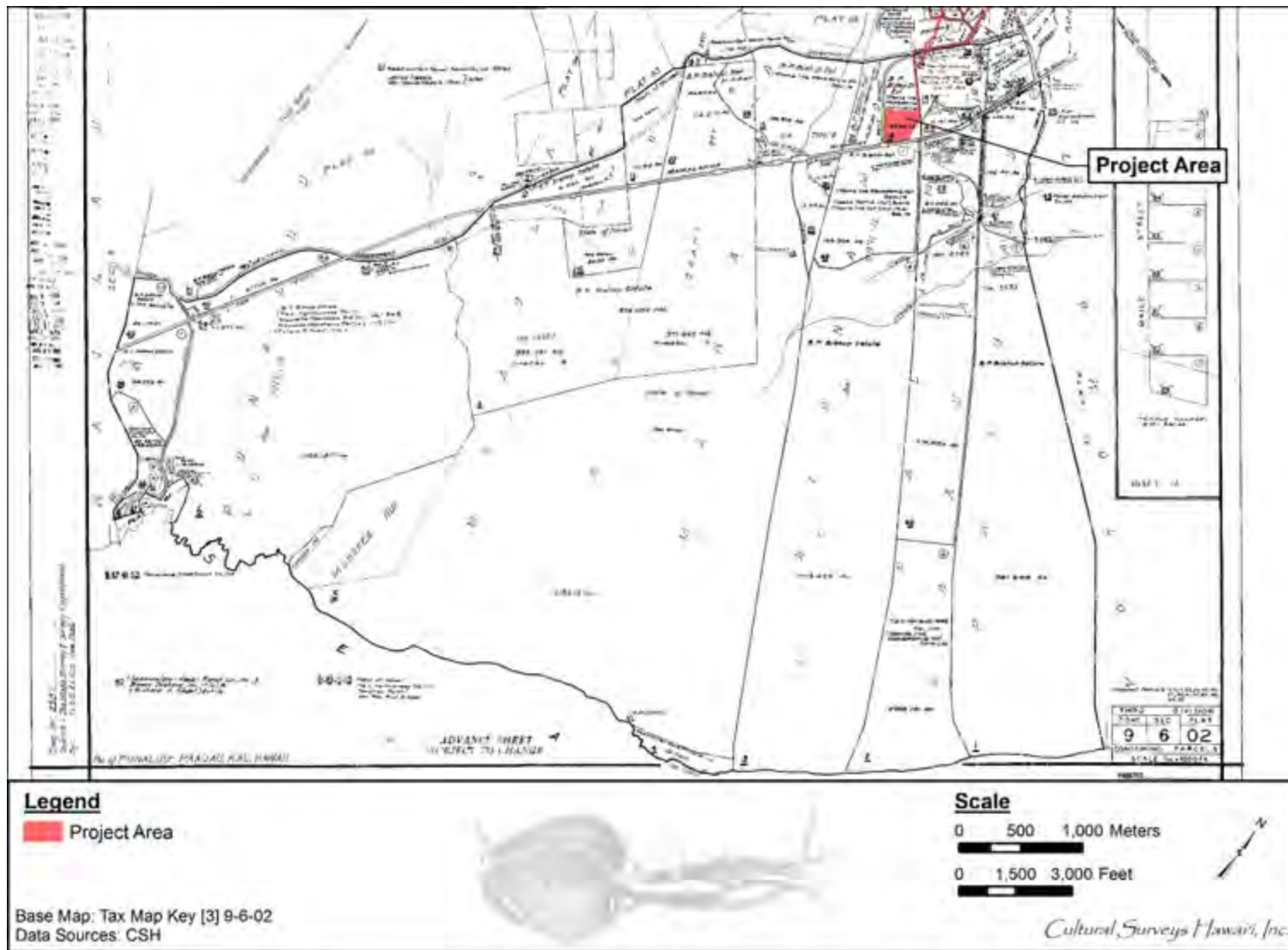


Figure 3. TMK: [3] 9-6-02 showing the southern portion of the project area (Hawai'i TMK Service 2018)



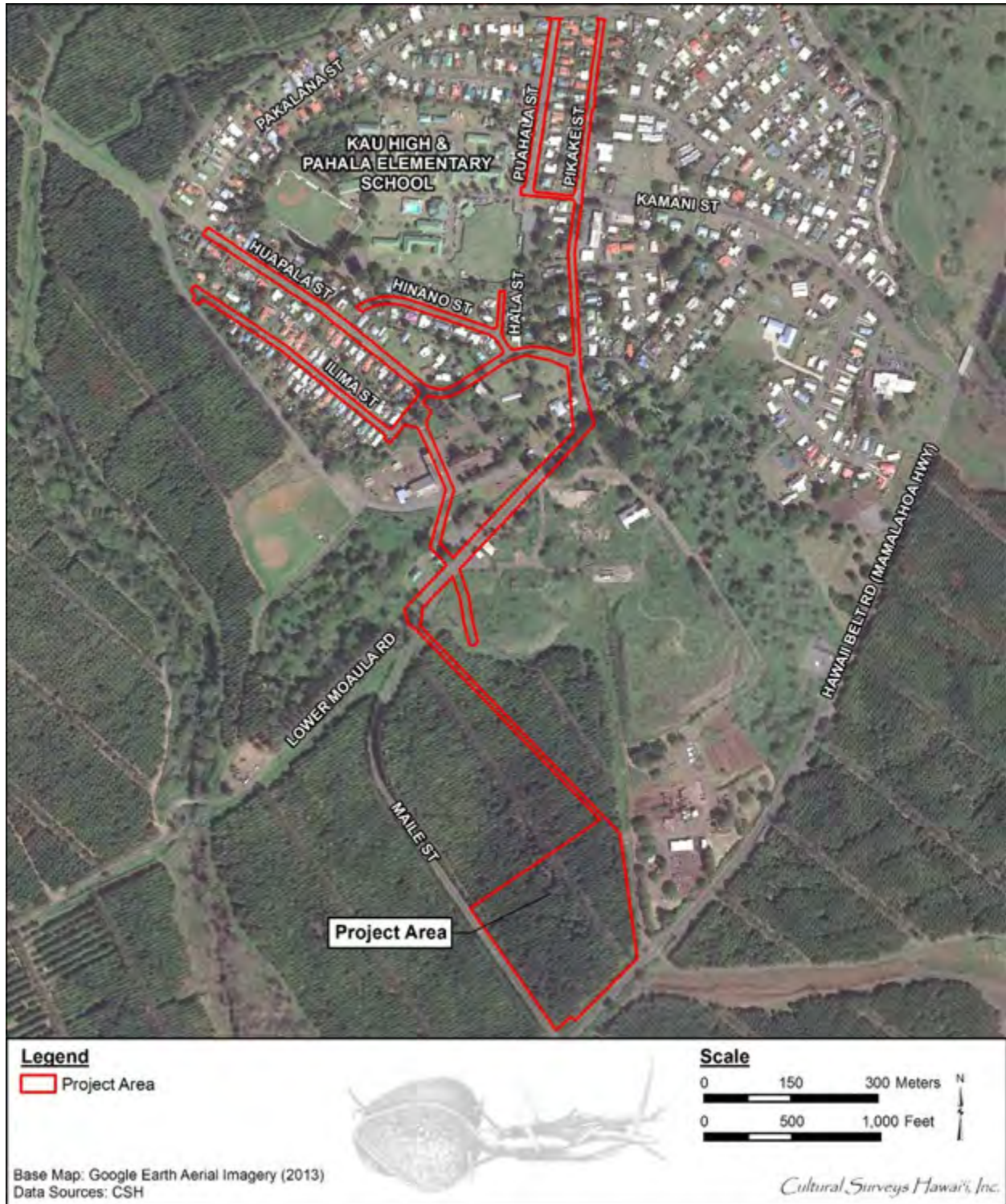


Figure 4. Aerial photograph of the project area (Google Earth 2013)

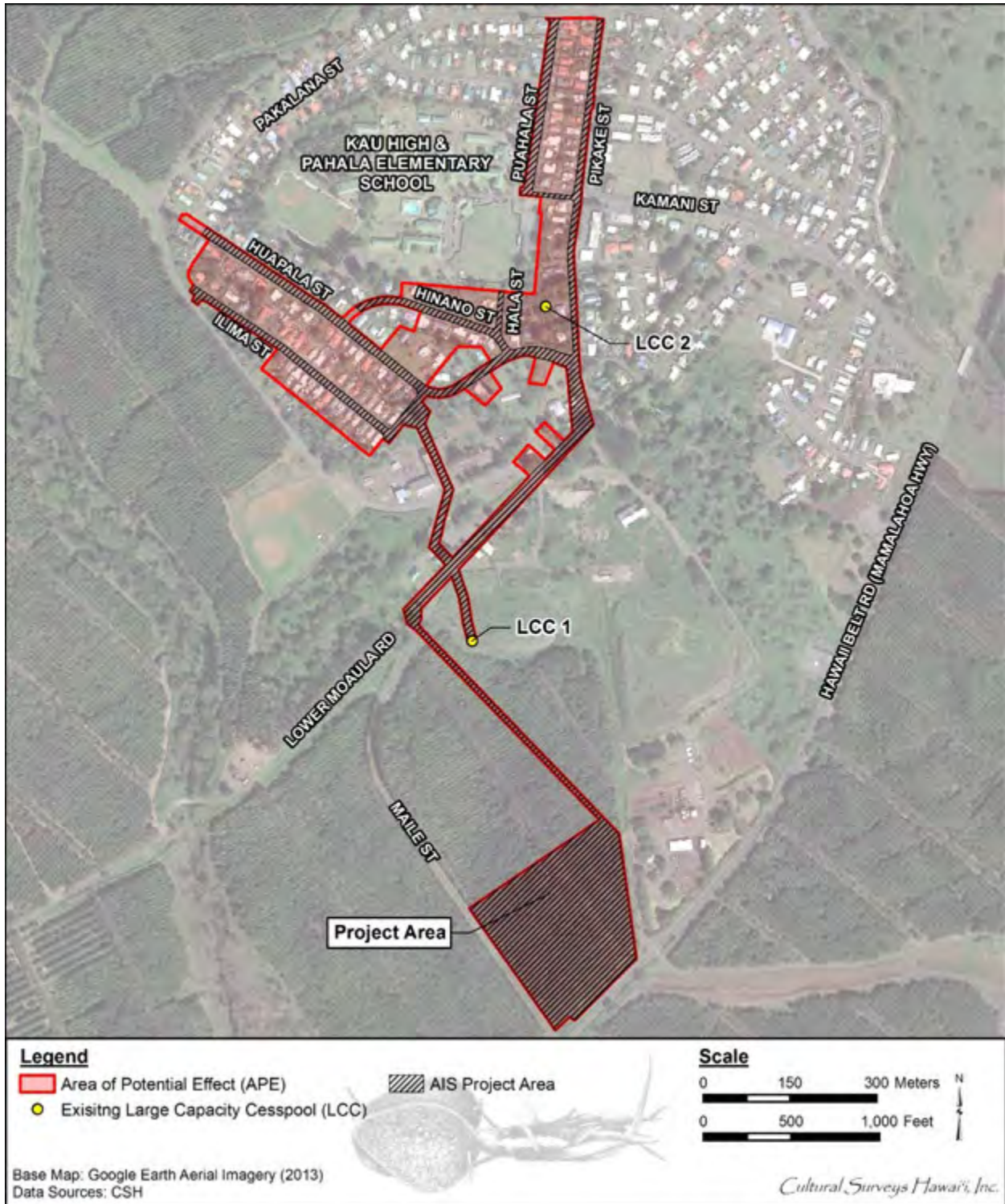


Figure 5. Aerial photograph of the project area, showing its configuration within the greater project APE and the locations of LCCs 1 and 2 (Google Earth 2013)

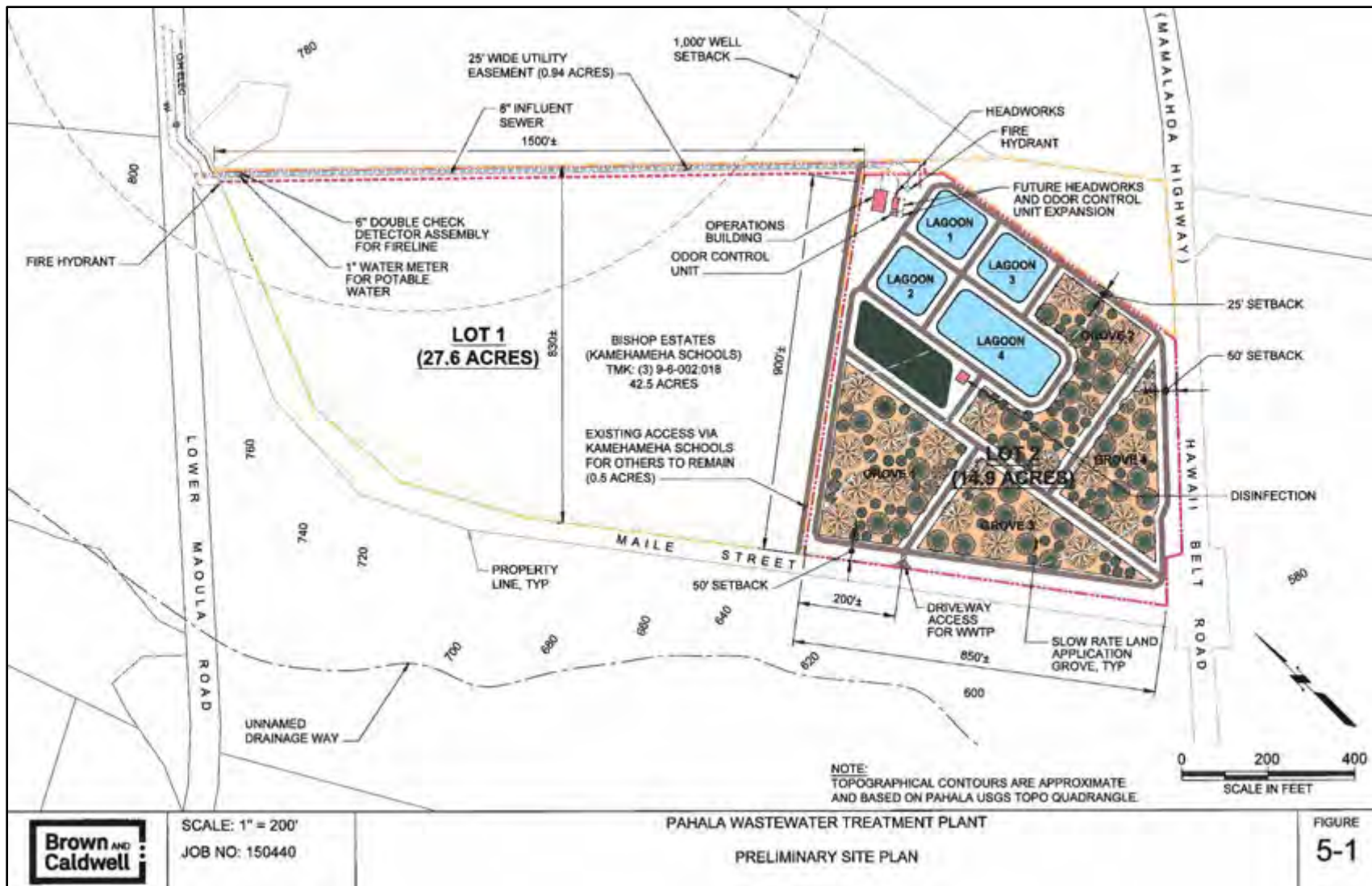


Figure 6. Preliminary site plan showing the 14.9-acre Pāhala WWTP and utility easement through TMK: [3] 9-6-002:018 (courtesy of client)

The AIS Project Area comprises Items 1–5 within the project APE, except for the LCC 2 location behind a private residence in TMK: [3] 9-6-016:041. It also does not include the numerous private properties located along the county streets selected for new sewer collection lines (Item 6).

The gravity sewer collection system lines will be mostly 8-inch diameter lines with the others from 12 to 16 inches, depending on their location, and will be placed in trenches located within the county streets. The trenches will be 3 to 4 ft wide and will be approximately 6 ft deep, or deeper depending on the location. For the former C. Brewer properties, the sewer laterals connecting the parcels to the collection system in the street have already been installed, although some of them may need to be replaced/repared/rehabilitated by the County. For other properties that may eventually connect, the owners will be responsible for the improvements on their private property to connect to the collection system at the property line.

## 1.2 Historic Preservation Regulatory Context and Document Purpose

This AIS investigation was designed to comply with both federal and Hawai'i State environmental and historic preservation review legislation. Due to federal (Environmental Protection Agency [EPA]) funding, this project is a federal undertaking, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). As a county project within both private and county lands, the project is also subject to Hawai'i State environmental and historic preservation review legislation (Hawai'i Revised Statutes [HRS] §343 and HRS §6E-8/Hawai'i Administrative Rules [HAR] §13-275, respectively).

In consultation with the State Historic Preservation Division (SHPD), this AIS investigation fulfills the requirements of HAR §13-276 and the *Secretary of the Interior's Standards for Archaeology and Historic Preservation*. It was conducted to identify, document, and make National Register of Historic Places (National Register) and Hawai'i Register of Historic Places (Hawai'i Register) eligibility recommendations for any cultural resources/historic properties. This report is also intended to support any project-related historic preservation consultation with stakeholders such as State and County agencies and interested Native Hawaiian Organizations (NHOs) and community groups, if applicable.

Pacific Legacy in 2016 conducted an archaeological field inspection of the entire 42.5-acre TMK: [3] 9-6-002:018 (Cleghorn 2016). The 11 November 2016 letter report was addressed to Dora Beck, P.E., Wastewater Division Chief for the County Department of Environmental Management (DEM) Wastewater Division. The report noted extensive ground disturbance throughout the parcel conducted “prior to the planting of the present macadamia nut orchard. The area at the southeastern corner of the parcel that is not planted in macadamia nut trees has also been extensively disturbed and a portion of it serves as a graveled parking lot for the adjacent macadamia nut processing plant.” A sealed lava tube entrance is present in this corner of the parcel outside the current project area. No surface archaeological features were documented by Cleghorn (2016). A handful of surface artifacts, including a single discoidal hammerstone and fragmental bottle glass and ceramics, were documented within the northern portion of the parcel outside the current project area. Cleghorn (2016) recommended consultation with SHPD about project historic preservation requirements, noting that SHPD would likely require an AIS. Cleghorn (2016) also recommended limiting the project area footprint to avoid the lava tube located in the southeastern corner of TMK: [3] 9-6-002:018.

On 17 October 2017 the project proponent provided a written request to the SHPD for a letter of determination in accordance with HAR §13-275-3 (Appendix A). The Cleghorn (2016) letter report was attached as supportive information.

CSH on 22 February 2018 met with SHPD Archaeology Branch Chief Dr. Susan Lebo to follow up on 17 October 2017 request for project determination. During this meeting Dr. Lebo indicated the following:

- An AIS should be undertaken addressing the entire area of proposed ground disturbance, with subsurface testing;
- The AIS should include a “good faith effort” to address possible lava tubes within the area of proposed ground disturbance;
- Backhoe assisted excavations should be conducted within select proposed features at the plant site;
- All areas of the project not included in TMK: [3] 9-6-002:018 should be addressed, in particular the lateral installations along the county roadways; these areas probably would not require subsurface testing but should be evaluated for any relation to a possible historic plantation village or historic property designation.

The items outlined above, and a more detailed summary of the subsurface testing schema, were supplied in a 22 March 2018 county DEM letter addressed to SHPD, which requested formal written concurrence with the AIS approach; additional materials were subsequently supplied to SHPD on request (see Appendix A). SHPD replied to this letter concurring with the AIS approach in a §6E-8 and NHPA Section 106 Review letter dated 20 August 2018 (Log No.: 2018.00722; Doc. No.: 1808JA02) (Appendix B).

CSH on 6 December 2018 met with Dr. Susan Lebo and Dr. Jane Allen of SHPD to discuss the project APE and documentation requirements (Appendix D).

## 1.3 Environmental Setting

### 1.3.1 Natural Environment

The project area is situated approximately 5 km (3.1 miles) back from the coast on the southeastern slope of Mauna Loa volcano, at an elevation of 170–305 m (590–1,000 ft) above mean sea level (amsl). The Pāhala Town vicinity receives an annual average rainfall of 52 inches (Giambelluca et al. 2013), which today supports commercial agricultural crops like coffee and macadamia nuts and historically supported sugarcane. The Ka‘ū Forest Reserve is located approximately 2.5 miles upslope. Gulches carrying flood waters from the forest reserve *makai* (seaward; downslope) bracket the town; no natural waterways are present within the project area. Vegetation within the proposed treatment plant consists of a macadamia (*Macadamia integrifolia*) orchard with Norfolk Island pines (*Araucaria heterophylla*) used for windbreaks. The terrain in this area is gently sloped to the southwest. The sewer line easement extends through the orchard and areas of grasses and weeds. Landscaped residential yards line the sides of the County roadways in Pāhala Town. The terrain along the roadways ranges from level to sloped.

The unique geology of its upper slopes, lined with a string of large *pu‘u* (hills, cinder cones) has protected broad portions of windward Mauna Loa from relatively recent lava flows. The region is known for its arable soils formed in volcanic ash, commonly referred to as “Pāhala Ash.”

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Sato et al. (1973), the project area's soils consist of soils from the Waiaha and Naalehu series (Figure 7). The northern half of the project area is Waiaha silt loam, 0 to 10% slopes (WAC), and the southeastern corner is Waiaha silt loam, 10 to 20% slopes (WKD). The remaining portions of the project area are Naalehu silty clay loam 0%-10% slopes (NaC) and Naalehu silty clay loam 10%-20% slopes (NaD) (see Figure 7).

Waiaha soils are described as

shallow, well-drained silt loams that formed in volcanic ash. These soils are nearly level to moderately steep and most areas are extremely stony . . . The natural vegetation consists of kiawe, koa haole, natal redtop, lantana, guineagrass, and bermudagrass. . .

Waiaha soils are used for pasture. [Sato et al. 1973:52]

The WAC type has a non-stony surface layer and "receives more rain during the winter than the extremely stony soil;" it is also used for orchards (Sato et al. 1973:53).

Naalehu soils are described as

well-drained silty clay loams that formed in volcanic ash. These soils are nearly level to steep. . . The natural vegetation consists of Christmas berry, bermudagrass, guava, and kaimi cover. . . Naalehu soils are used mostly for sugarcane. Small areas are used for pasture. [Sato et al. 1973:40]

### 1.3.2 Built Environment

The entire project area has been altered by agricultural, commercial, and residential development. The location of the proposed treatment plant is currently an active macadamia nut orchard operated by Royal Hawaiian Orchards. This portion of the project area is on the southern outskirts of Pāhala Town, bound to the west by Maile Street, to the south by the Hawai'i Belt Road or Māmalahoa Highway (State Inventory of Historic Places [SIHP] # 50-10-47-30187), to the north by additional macadamia orchard, and to the east by an unimproved jeep road separating the orchard from the Royal Hawaiian processing facilities. This road is bound to the east by a concrete flume extending *mauka-makai* (from mountains to sea), located outside the project area. An unnamed paved roadway forms the approximate northern boundary of the proposed plant area; this road provides access to and from the Royal Hawaiian Orchards processing facility via Maile Street. Just inside the western boundary of the parcel parallel to Maile Street is another unimproved road, used to access the orchard. An earthen ditch is situated between this road and Maile Street, designed to channel run-off downslope. The orchard itself is bisected by a large, linear dozer push pile containing a row of trees forming additional wind-breaks; unimproved access roads run along both sides of this push pile.

The proposed sewer collection line extends for the most part along existing, paved County roadways including Maile Street, Pikake Street, Ilima Street, Huapala Street, Hinano Street, Kamani Street, and Puahala Street (see Figure 4). These roadways extend through predominately residential areas of Pāhala Town. The portion of Maile Street in which the sewer line will be placed is located between the Pikake Street/Old Camp Mill Road intersection and the Lower Moa'ula

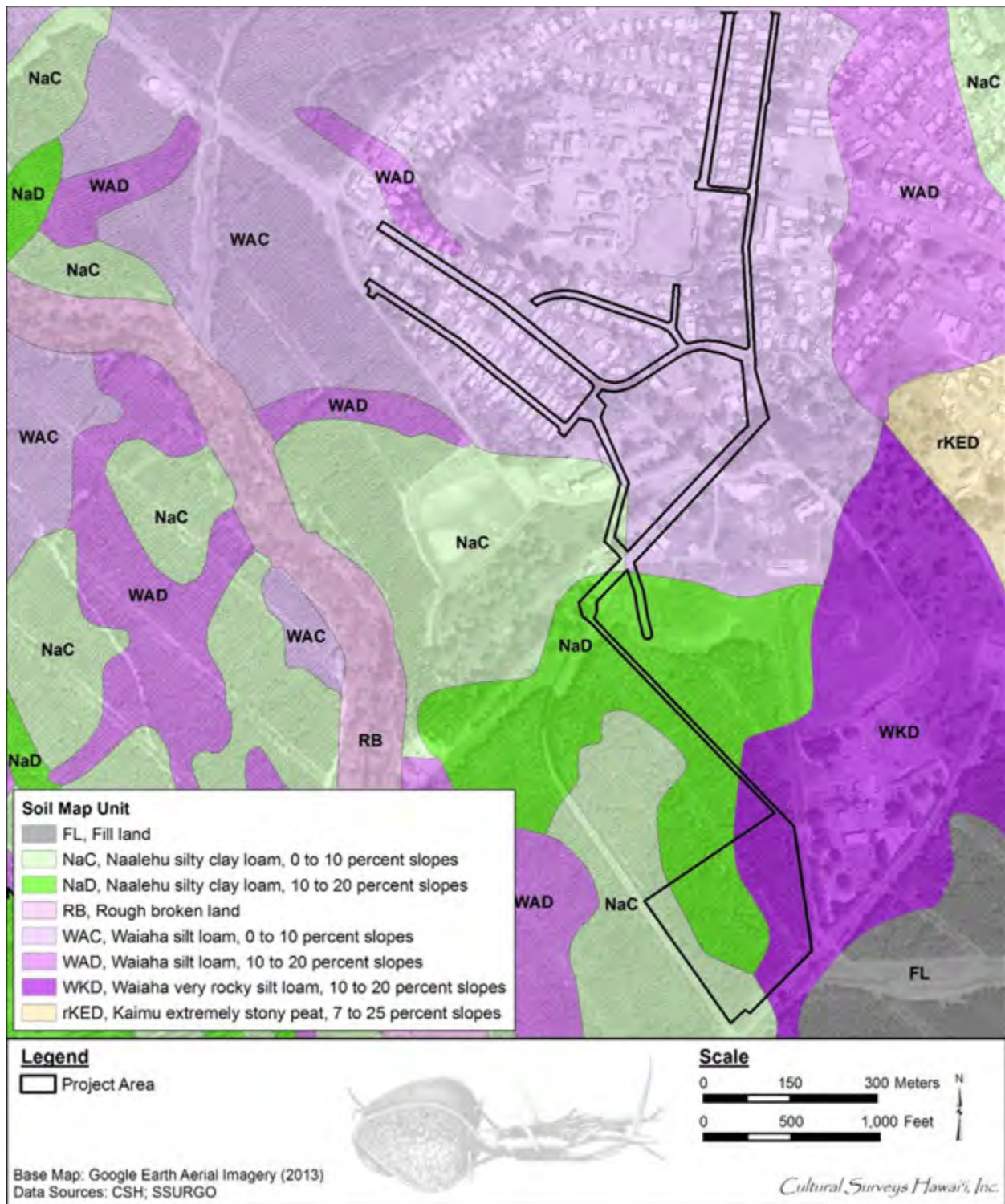


Figure 7. Overlay of *Soil Survey of the State of Hawaii* (Sato et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001)

Road fork. Remnants of the sugar mill and associated plantation structures are present on either side of Maile Street outside of the project area.

Three sewer line easements are proposed for portions of the sewer line not within county roadways. One of these easements would extend along the southernmost segment of Pikake Street, which crosses privately owned TMK: [3] 9-6-005:044. This sewer line easement would also be within the existing paved roadway. Another easement extends from the eastern section of 'Ilima Street through the old Pāhala Sugar Mill maintenance yard at TMK: [3] 9-6-005:036. The maintenance yard property has been completely altered with the development of the sugar plantation and town. The property has been graded and contains structures, driveways, parking areas, and a portion of a roadway used to access Ka'ala'iki Road/Pāhala Cane Haul Road. Though this overall parcel is within the project APE, no new sewer connections are proposed under the current project for any of its structures. The easement extends between and around the existing historic structures on this parcel and exits the property at Maile Street, where the line then extends southeast into TMK: [3] 9-6-002:018. The sewer line runs through the macadamia nut orchard, connecting to the northern corner of the proposed plant site.

The project involves the closure of the two existing LCCs (LCC 1 and LCC 2). LCC 1 is located in TMK [3] 9-6-002:016 south of Maile Street, at the terminus of a sewer easement maintained by the County. The portion of the parcel containing LCC 1 and its associated easement are fallow cane land. LCC 2 and its tie-ins to existing sewer lines are located behind a private residence at TMK [3] 9-6-016:041. This residential property comprises a main dwelling, outbuildings, driveway, and landscaped yard.

The sewer collection and transmission lines overlap with the known boundaries of the "Pāhala Historic District." In the 1970s the majority of Pāhala Town was designated SIHP # 50-10-69-07362, a historic district associated with the historic sugar plantation and village. This historic property is not listed on the National Register or Hawai'i Register, and to the best of our knowledge has never been evaluated for eligibility for listing on these registers. CSH was unable to locate any records on file at the SHPD offices in Hilo or Kapolei pertaining to SIHP # -07362.



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## Section 2 Methods

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### 2.1 Field Methods

CSH completed the fieldwork component of this archaeological inventory survey under archaeological fieldwork permit number 18-15, issued by the SHPD pursuant to HAR §13-282. Fieldwork was conducted on 18 September 2018 and 10 January 2019 by CSH Field Supervisor Olivier Bautista, B.A., and Project Director Sarah Wilkinson, B.A.; and on 1-4 October 2018 by Olivier Bautista B.A., under the general supervision of CSH Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 8 person-days to complete. In general, fieldwork included 100% pedestrian inspection of the project area, GPS data collection, and subsurface testing.

#### 2.1.1 Pedestrian Survey

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was accomplished through systematic sweeps spaced 2-5 m apart depending on ground visibility.

Where a new historic property was encountered, the determination of its boundary was based on factors including apparent age, architectural style, and the spatial and functional interrelationships of both natural and man-made features.

#### 2.1.2 Subsurface Testing

A program of subsurface testing was undertaken for the AIS to assess the potential for subsurface archaeological features, including but not limited to buried cultural deposits and/or culturally modified lava tubes. The number and locations of the test excavations were chosen based on consultation with SHPD (see Appendices A and B). The subsurface testing program consisted of backhoe assisted excavation of seven trenches within the proposed plant site: one each within proposed Lagoons 1 and 4, Groves 1–4, and the Wetland area. The test excavations were placed to avoid trees, roots, and irrigation lines. In general, the seven linear trenches measured approximately 5 m (20 ft) long and 1.0 m (3.2 ft), and all trenches were excavated to bedrock.

A stratigraphic profile of each test excavation was drawn and photographed. The observed sediments were described using standard USDA soil description observations/terminology. Sediment descriptions included Munsell color; texture; consistence; structure; plasticity; cementation; origin of sediments; descriptions of any inclusions, such as cultural material and/or roots; lower boundary distinctiveness and topography; and other general observations. Where stratigraphic anomalies or potential cultural deposits exposed, these were to be carefully represented on test excavation profile maps.

### 2.2 Laboratory Methods

No samples or cultural materials were collected during the AIS fieldwork; therefore, laboratory studies were unnecessary.

## 2.3 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina database (Waihona 'Aina 2000).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of cultural resources in the project area.

## 2.4 Consultation Methods

Consultation is being undertaken for the project to comply with Section 106 of the National Historic Preservation Act (NHPA). Presently, Section 106 consultation with community, agency, and Native Hawaiian Organizations has been initiated and is ongoing by the project proponents. The results of the current investigation will be utilized in these ongoing efforts. No historic properties have been assessed as having traditional cultural significance to an ethnic group (Criterion e) within the project area.

## Section 3 Background Research

### 3.1 Traditional and Historical Background

#### 3.1.1 Traditional Accounts

The district of Ka'ū is the southernmost and largest district of Hawai'i Island, encompassing over 600,000 acres and nearly 30 *ahupua'a* (land divisions usually extending from uplands to the sea). The current project area crosses the boundaries of four *ahupua'a*, including (from west to east) Hionamoa, Pālima and Pā'au'au 1 and 2. According to Pukui et al. (1976:173, 177), Pā'au'au translates as “bath enclosure,” and Pālima literally means “five-fold.” The meaning of “Hionamoa” was not found.

Traditional accounts concerning the area known as Pāhala are limited, likely due to scarcity of pre-Contact settlement in the vicinity. Pāhala is a historic-era settlement that formed around a sugar plantation in the late 1800s; the name “Pāhala” refers to a practice in the cane fields of “cultivation by burning mulch” (Pukui et al. 1976:174) made from the *hala* tree (*Pandanus tectorius*). That sugar became one of the first industries of Ka'ū is indicative of the suitability of this inland regions for agriculture: Handy and Handy (1972:558) note that the *kula* (plains) lands of Ka'ū are “perhaps the finest arable country in the Hawaiian Islands.”

Given its geological and climatic complexity, it is not surprising that Ka'ū came to be known as a land of fierce and independent people, a “fatal land to chiefs.” These characteristics are expressed in David Malo's (1951) delineation of the responsibilities of the *ali'i* (chiefly class), and of the treatment meted out to those *ali'i* who abused their power:

It was the king's duty to seek the welfare of the common people, because they constituted the body politic. Many kings have been put to death by the people because of their oppression of the *maka'āinana* [populace].

The following kings lost their lives on account of their cruel exactions on the commoners: Koihala was put to death in Kau, for which reason the district of Kau was called The Weir (Makaha) [*Mākaha*, “fierce Ka'ū”]. [Malo 1951:195]

Samuel Kamakau, in *Ruling Chiefs of Hawai'i*, mentions Ka'ū as he recounts the political unification of the island of Hawai'i under 'Umi-a-Līloa during the sixteenth century.

I-mai-ka-lani was the chief of Ka-u. He was blind, but noted for his strength and skill in battle. Many chiefs who had fought against him were destroyed. . . . 'Umi-a-Līloa feared I-mai-ka-lani. . . After I-mai-ka-lani became blind the fight between him and 'Umi continued . . . After I-mai-ka-lani's death Ka-u became 'Umi-a-Līloa's. [Kamakau 1961:18–19]

Kamakau also details the shifts of power within Ka'ū and other districts through generations on the island of Hawai'i. Power, apparently, did not necessarily transfer from a ruler to his descendants (Kamakau 1961:61–65).

At times, the contiguous districts Kohala, Kona, and Ka'ū formed a triumvirate under a single ruler. However, such unions were subject to change as, according to Kamakau, in later times rule over Ka'ū was consolidated with that of Puna:

Ka-lani-'opu'u and Keoua were the hereditary heirs to the land of Hawaii, for it had belonged to their father, Ka-lani-nui-'i-a-mamao, and [his brother] Ka-lani-ke'e-au-moku; but Alapa'i had seized it through force of arms and had slain the inheritors.

. . . a great battle was fought [between Ka-lani-'opu'u and Alapa'i] at Kualoa and Mokaulele all the way to Mahinaakaka, at which Ka-lani-'opu'u almost lost his life . . . Ka-lani-'opu'u's men were victorious that day, and the chief realized how powerful his following was in chiefs and fighting men and how strong he himself was to break men's bones with his hands.

After this battle Mahinaakaka, Ka-lani-'opu'u ruled over Ka-'u and Puna, for he was a native of Ka-'u. There were the birth sands of his ancestors. [Kamakau 1961:76–77]

Kamakau's account suggests the precariousness of the inter-district power combinations by the ruling *ali'i* during traditional Hawaiian times in Ka'ū and other districts.

The chief Ka-lani-'opu'u ruled Ka'ū during the eighteenth century just before the first European visitors began to record their early impressions of the land and its people.

### 3.1.2 Early Historic Period

Lt. James King, sailing off the island of Hawai'i during the 1779 voyage of Captain James Cook, described the Ka'ū first seen by Europeans:

The coast of Kaoo [Ka'ū] presents a prospect of the most horrid and dreary kind: the whole country appearing to have undergone a total change from the effects of some dreadful convulsion. The ground is every where covered with cinders and intersected in many places with black streaks, which seem to mark the course of a lava that has flowed, not many ages back, from the mountain Roa [Mauna Loa] to the shore. The southern promontory looks like the mere dregs of a volcano. The projecting headland is composed of broken and craggy rocks, piled irregularly on one another, and terminating in sharp points. [King 1784:104]

The only onshore exploration at Ka'ū involved a search for freshwater:

When [Mr. Bligh] landed, he found no stream or spring, but only rain-water, deposited in holes upon the rocks; and even that was brackish, from the spray of the sea; and that the surface of the country was entirely composed of flags and ashes, with a few plants here and there interspersed. [King 1784:545]

Archibald Menzies, a surgeon and naturalist on the 1794 voyage of Captain George Vancouver, describing an excursion from Kona across Ka'ū to the top of Mauna Loa, found a different scene in areas that received more rainfall. Menzies writes of

a fine fertile valley [where he] put up for the night at a village called Kioloku, on a rich plantation belonging to Keawe-a-heulu.

. . . This was by far the most populous village we had yet met with since we left Kealakekua. Towards the dusk of the evening, there fell some showers of rain which gave a gay and refreshing look to the most enchanting scenes of rural

industry with which we were surrounded. The economy with which these people laid out and managed their ground and the neatness with which they cultivated their little fields made the whole valley appear more like a rich garden than a plantation. A stream of water which fell from the mountain through the middle of it was ingeniously branched off on each side to flood and fertilize the most distant fields at pleasure. [Menzies 1920:184–185]

This abundance was not isolated; continuing on his way east through the *ahupua'a* of Honu'apo (approximately 9 miles southwest of Pālima), Menzies found

. . . the people everywhere busily employed in their little fields, many of which were here cropped with plantains and bananas that had a ragged appearance from having little or no shelter, yet they bore fruit tolerably well. [Menzies 1920:185]

In 1823, Rev. William Ellis, journeying like Menzies from Kona through Ka'ū, recorded his impressions of the land, demonstrating like Menzies a willingness to look and let the land speak for itself. He describes the valley of Wai'ōhinu (located approximately 12 miles southwest of the project area) as open toward the sea, and on both sides adorned with gardens and interspersed with cottages, even to the summits of the hills.

A fine stream of fresh water, the first we had seen on the island, ran along the centre of the valley, while several smaller ones issued from the rocks on the opposite side, and watered the plantations below.

Our road, for a considerable distance, lay through the cultivated parts of this beautiful valley: the mountain taro, bordered by sugar-cane and bananas, was planted in fields six or eight acres in extent, on the sides of the hills, and seemed to thrive luxuriantly. [Ellis 1963:133–134]

Ellis' account confirms the upland luxuriance that had made the *ahupua'a* of Wai'ōhinu a center for the *ali'i* of Ka'ū. As Ellis continued his journey he moved closer to the coast and his journal illumines areas where western eyes had previously perceived only a “prospect of the most horrid and dreary kind.” Travelling northeast toward Punalu'u (located approximately 4.5 miles southwest of the project area), Ellis found the countryside “more thickly inhabited [as his walk continued] . . . The villages along the sea shore, were near together, and some of them extensive” (Ellis 1963:136). Ellis also notes the intervening broad stretches of rough *'a'ā* between the habitation areas. These flows had been made traversable by waterworn boulder paths. Ellis thus reveals the desolate coastline described 44 years earlier by James King was in fact the site of a well-populated, active culture and economy where habitation centers, though isolated, were accessible to each other and to the resources of land and sea.

William Ellis in 1823 may have been the first missionary to visit Ka'ū. During the 1830s Protestant missionaries based in Kona and Hilo made occasional tours into Ka'ū, but a permanent missionary presence was not installed until the early 1840s when Catholic and Protestant missions were established in the district. In 1841, a Catholic priest, Father Marechal, arrived in Ka'ū and within a few months boasted of 900 converts. The following year, 1842, the Protestant minister John Paris reached Ka'alu'alu (located at Ka Lae, approximately 19 miles southwest of the project area) by schooner where he found,

The shore was lined with hundreds of natives as our little boat neared the shore. . . . Then came greetings from the multitude, some kissing my hands and some taking hold of my feet. A joyful 'Aloha ino!' with a low wail, rose from the aged ones. [Paris 1926:89]

Paris' account illustrates the abundant resources available in the district:

. . . two strong men, tattooed from head to foot, came in bearing a huge whole hog, baked entire minus hair and entrails. These bearers were followed by others, dressed in the same style bringing calabashes of various sizes filled with fish, poi, potatoes, then came melons, bananas, and sugar cane, and little gourds filled with goat's milk. All was spread out in royal Hawaiian style, a dozen kukuis [nuts from the Candlenut tree, *Aleuris moluccana*] burning and kahilis [feather standards] waving to and fro. [Paris 1926:90]

Paris settled in Wai'ōhinu where he founded a church and school. Later, in 1843, a stone church was also built at Punalu'u to the northeast. Cordy (1986:21) postulates that around this time a settlement shift was occurring from coastal to inland regions, the result of depopulation and of efforts to gain access to the government road and to populate the economic center of Wai'ōhinu.

Mission station reports, censuses, and accounts by visitors to Ka'ū during the mid-nineteenth century document changes to the district brought about by natural forces and the pressures of an increasing western presence. A visitor to Wai'ōhinu and its environs in 1849 anonymously published an account describing the devastating effects of a drought and fire that had occurred three years earlier:

[W]e noticed many a tall, stately trunk, branchless and lifeless standing monument-like, all over the country. On enquiry we ascertained that they were the remains of a noble forest, which, with the whole surrounding country, were burnt in 1846. In that year a severe drought visited the Island, the streams dried up, the grass withered, and fire swept over the whole district. [Sailor in Kelly 1980:89]

The author also describes an area above the settlement at Wai'ōhinu that, apparently undamaged by the 1846 fire, probably represents the idyllic setting that had drawn the Ka'ū *ali'i* to the *ahupua'a*:

[W]e ascended the hills back of the mission, and when we had reached an elevation of about 5,000 feet were repaid with one of the richest scenes it was our privilege to look upon. Below us lay, fashioned by the hand of nature, within a range of ten miles, six lovely terraces, on which one thousand dwellings might be placed, each of which should have a prospect of the sea, the rocky shore, the lava and the verdant upland. . . . On this land we saw some noble upland kalo, and a number of very large banana trees. Several crystal springs take their rise on the summit, and might send, if rightly directed, a portion of their treasures through every man's fields. Behind this noble series of hills, timber abounds. So that there is to be found every thing desirable to make a rich farming country, and in a circuit of some fifteen miles, might be abundantly grown the best products of the temperate, with the rich and varied fruits of the tropic zones. But alas the farmers are wanting, the land lies in all the wild luxuriance of nature desolate, there are no passable roads, except foot

paths, to it, and no harbor at which vessels could lie in safety, is found within many miles. [Sailor in Kelly 1980:89]

Noticeably missing from this account is mention of any Hawaiians occupying and utilizing this verdant land “now lying utterly waste.” An 1831-1832 census of Ka‘ū, the first taken within the district, records a total population of 5,800. In 1835 the total population is counted as 4,766. The first official government census, taken in 1847, records the population as having dropped to 3,010. Reverend John Paris would write in an 1848 mission station report (Paris 1848:3), “Since the year 1845 the work of depopulation of Kau has gone on with fearful rapidity.” He notes, during the years 1845 and 1846 (Paris 1848:3), a “distressing famine and fire which overran the country,” the same disasters the anonymous visitor of 1849 mentioned. By the time of the 1853 government census only 2,210 people are recorded in Ka‘ū.

### 3.1.3 The Māhele and the Kuleana Act

In the mid-nineteenth century, during the time of Kamehameha III, a series of legal and legislative changes were brought about in the name of land reform (see the works of Jon Chinen 1958, 1971 for a thorough and well-written explanation). Previous to the Māhele, all land belonged to the *akua* (gods), held in trust for them by the paramount chief, and managed by subordinate chiefs.

Following the enactment of a series of new laws from the mid-1840s to mid-1850s, Kamehameha III divided the land into four categories: Crown Lands reserved for himself and the royal house; Government Lands for the government; Konohiki Lands claimed by *ali‘i* and their *konohiki* (supervisors); and *kuleana*, small plots claimed by the *maka‘āinana* (commoners) (Chinen 1958:8–15). These claims are described in Land Commission Award (LCA) testimony from the claimant and witnesses. A Royal Patent (RP), which quit-claimed the government’s interest in the land, was issued on most Land Commission Awards (LCA) (Chinen 1958:14). In some cases, more than one RP number was issued for an LCA, especially in cases where there were several widely separated *‘āpana* (lots), such as an award with agricultural land in one *ahupua‘a* and a house lot in another.

*Ali‘i* were required to pay a commutation fee to the government for their confirmed Konohiki Land titles; this payment could be in cash or in the return of land to the government or crown. Many *ali‘i* elected to return substantial portions of their awarded lands to avoid the one-third commutation cash fee. The Kuleana Act of 1850 allowed *maka‘āinana*, in principle, to own land parcels where they were currently and actively cultivating and/or residing. In 1851, certain Government Lands became available for purchase in lots of 1 to 50 acres in fee simple; this new category of land ownership became known as Royal Patent Grants or Land Grants. Unfortunately, Land Grant records tend to offer far less insight into specific land use than LCA records.

According to Soehren (2010), Hionamoa, Pālima, and Pā‘au‘au were not named in the Māhele Book. However, a 1914 map (Figure 8) shows 1,950 acres in Hionamoa awarded to the *ali‘i* William Pitt Leleiohoku as LCA 9971:12.

Waihona ‘Aina (2000) indicates Moses Keawe claimed five *‘āpana* in the vicinity of the project area as part of LCA 7312. Two of the five lots were awarded. LCA 7312:1 comprised 1.5 acres located in Pā‘au‘au 2, approximately 750 m north of the project area along the “Kau-Volcano Road” (present Ka‘ala‘iki Road). LCA 7312:2 comprised 11.7 acres in Hionamoa, located

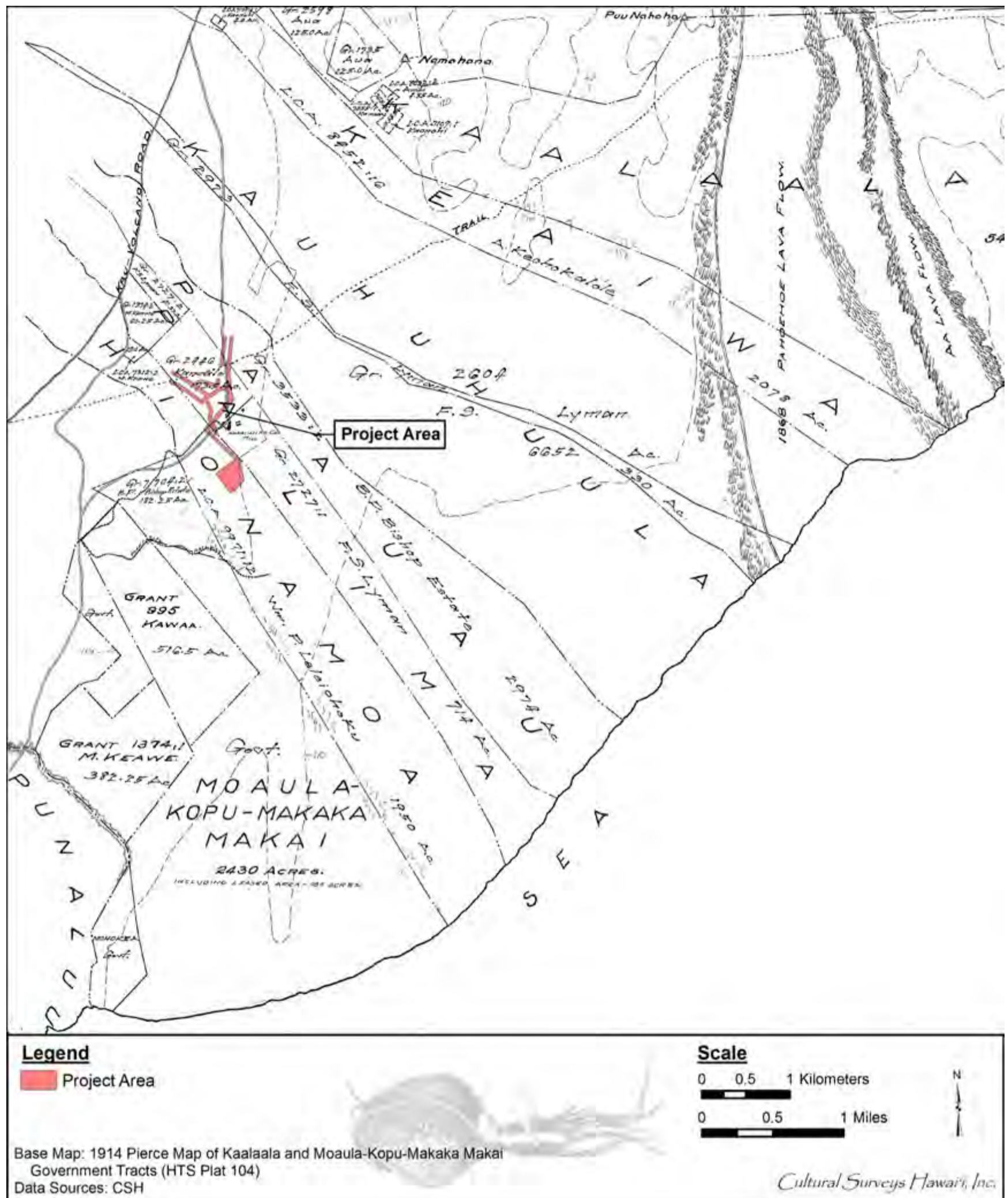


Figure 8. Portion of R.F. Pierce’s 1914 map of Kalaala and Moaula-Kopu-Makaka Makai Government Tracts, showing the project area in relation to roads, trails, and the plantation railroad



approximately 350 m northwest of the project area along the “Kau-Volcano Road”/Ka‘ala‘iki Road. Both of the awarded ‘*apana* were house lots. The three ‘*apana* not awarded comprised taro fields.

LCA 10248 to Mahi was also awarded in Pā‘au‘au 2. This award comprised 13 acres straddling the “Kau-Volcano Road”/Ka‘ala‘iki Road adjacent to LCA 7312:1, approximately 750 m north of the project area. Unfortunately, the testimony for this award does not provide information about land use. No *kuleana* are indicated within Pā‘au‘au 1 or Pālima.

Waihona ‘Aina (2000) lists four land grants in Pālima-Pā‘au‘au: Land Grant 01370 to Nahala, 02446 to Kamalo (overlapped by the project area), 02655 to Nahala, and 02727 to F.S. Lyman. In addition to these, Pā‘au‘au also contained Land Grant 03533 made to the trustees of the Bernice Pauahi Bishop Estate; this grant is also overlapped by the project area. Soehren (2010) notes that Grant 03533, which also included lands at Kaunakakai on Moloka‘i and Honolulu and Ka‘akaukukau on O‘ahu, was made “in exchange for quitclaim deed to certain lands in Hilo.” Grants 01370 and 02655 are located *mauka* (inland) of the “Kau-Volcano Road”/Ka‘ala‘iki Road. Grants 02446, 02727, and 03533 are depicted on the 1914 map (see Figure 8) in relation to the project area. Figure 8 also indicates a fifth grant in upland Pālima: Land Grant 01374 to Keawe. This grant, comprising two separate ‘*apana*, is listed on Waihona ‘Aina (2000) as being located in Kopu-Moaula a short distance east of Pālima. Figure 8 indicates the portion of Land Grant 01374 north of the project area is ‘Apana 2. No Land Grants are indicated within Hionamoa.

### 3.1.4 Mid- to Late 1800s

By the middle of the nineteenth century, imported livestock roaming freely throughout pasturelands of Ka‘ū were creating new aggravations. Ka‘alu‘alu had become a focus of activity as the export of agriculture and livestock began to dominate the Ka‘ū economy; at the same time, about 1852, an improved, 7-mile-long cart road was constructed between the bay and Wai‘ōhinu. In the 1850s, Rev. Henry Kinney (cited in Kelly 1980) commented on the “hundreds of goats salted and dried” as well as “upland taro, potatoes and onions” which previously had to be hauled “on the backs of men” overland to Hilo and which could now be taken to the harbor and shipped.

Ranching activity in Ka‘ū commenced sometime after the middle of the century when Princess Ruth Ke‘elikolani started Ka‘alu‘alu Ranch with cattle brought from Waimea. Cattle continued to be shipped out of Ka‘alu‘alu at least until the 1920s. Organized cattle ranching was focused at Ka‘alu‘alu, Kahuku, and Kapāpala (located northeast of present Pāhala Town).

While cattle and other livestock were significant elements of the new western economic focus imposed upon Ka‘ū during the nineteenth century, it was agriculture that had the most extensive impact on the land and people. Among new agricultural pursuits attempted in Ka‘ū was wheat growing:

But it proved difficult to co-ordinate the size of the wheat crop with the requirements of the flour mills; difficult also to coordinate the output of the mills with the demands of the market, domestic and foreign. The business did not become a permanent one. [Kuykendall 1966:150]

Contributing to the failure of wheat production was the harvesting of *pulu*, a soft, flossy, yellow wool on the base of tree-fern leaf stalks (*Cibotium* spp.) used for stuffing mattresses and pillows. During the 1860s *pulu* constituted the major export crop from Ka‘ū. A mission station report

written in 1860 by W.C. Shipman relates the ruinous effect upon the native population of participation in the *pulu* trade:

The effect—on them is not good; not that the *pulu* is not a source from which they might secure comfort to themselves and families, but the actual result is the reverse. They are offered goods to almost any amount, to be paid for in *pulu*; this to a native is a strong temptation to go into debt. Consequently many of them are deeply in debt and almost all to some extent. The policy of the traders is to get them in debt and to keep them there so long as possible . . . [T]hey are almost entirely under the control of their creditors, and are compelled to live in the *pulu* regions, at the peril of losing their houses and lots, and whatever other property they may possess. Thus their homes are almost in reality deserted, ground uncultivated. [Shipman 1860:4]

Life in Ka'ū during the 1860s was further disrupted and devastated by the forces of nature. A sequence of major earthquakes and eruptions of Mauna Loa beginning in March 1868 resulted in many deaths and losses of property and livestock. Then an earthquake in early April precipitated a tidal wave that destroyed coastal villages, dislodged a cliff side at Kapāpala blanketing the land below and burying a village, and opened the Great Crack at Kīlauea (located approximately 2.5 miles east of Pāhala), emptying the crater's lava lake into Punalu'u and Keauhou. A subsequent lava flow, this time in western Ka'ū, buried all of Wai'ahukini Valley west of the great *pali*.

Apparently great natural disasters could not hinder the pace of foreign business interests in Ka'ū. In 1868, the same year as the great earthquake, Alexander Hutchinson established the Naalehu Sugar Company and built a mill at Nā'ālehu just east of Wai'ōhinu. More enduring commercially than either wheat or *pulu*, sugar cultivation became the major industry within Ka'ū, appropriating the focus of life in the district.

During the mid-1870s Waiohinu Plantation was established by John Nott and Company. This operation was bought out in 1877 by Alexander Hutchinson who at the same time founded Hilea Plantation. By the end of the 1870s, sugar mills were operating at Nā'ālehu, Hilea, and Honu'apo. Though Hutchinson died in 1879, his name survived in the Hutchinson Sugar Company which during the remainder of the nineteenth century continued to expand and consolidate existing plantation operations in Ka'ū.

Another plantation operation, the Hawaiian Agricultural Company, was established in Pāhala in 1876 by a consortium of Honolulu businessmen. An 1877 map of the Hawaiian Agricultural Company sugarcane lands (Figure 9) shows the Pāhala Mill located just east of the project area, overlapping lands indicated as already planted in cane, as well as unplanted areas labeled as "Good, Stony land." No roads or trails are indicated. An 1886 map (Figure 10) also depicts the location of the mill at the "Pahala Plantation," as well as the Hutchinson Sugar Company mills at Hilea, Honu'apo, and Nā'ālehu to the southwest and the associated wharves at Honu'apo and Punalu'u. Dorrance and Morgan (2000:110) note that Pāhala's "steam driven mill was the most modern and largest in the islands." Figure 10 curiously depicts the project area overlapping land divisions called "Nakumu" and "Makaka;" no information about these places names was found. Figure 10 also illustrates three travel routes extending through the Pāhala vicinity: two routes extend from Nā'ālehu northeast, one along the coast and one *mauka*, joining and continuing northeast above Pāhala Mill. Another route is shown extending northeast from Nīnole/Punalu'u through Pāhala, parallel and *makai* of the Nā'ālehu route.

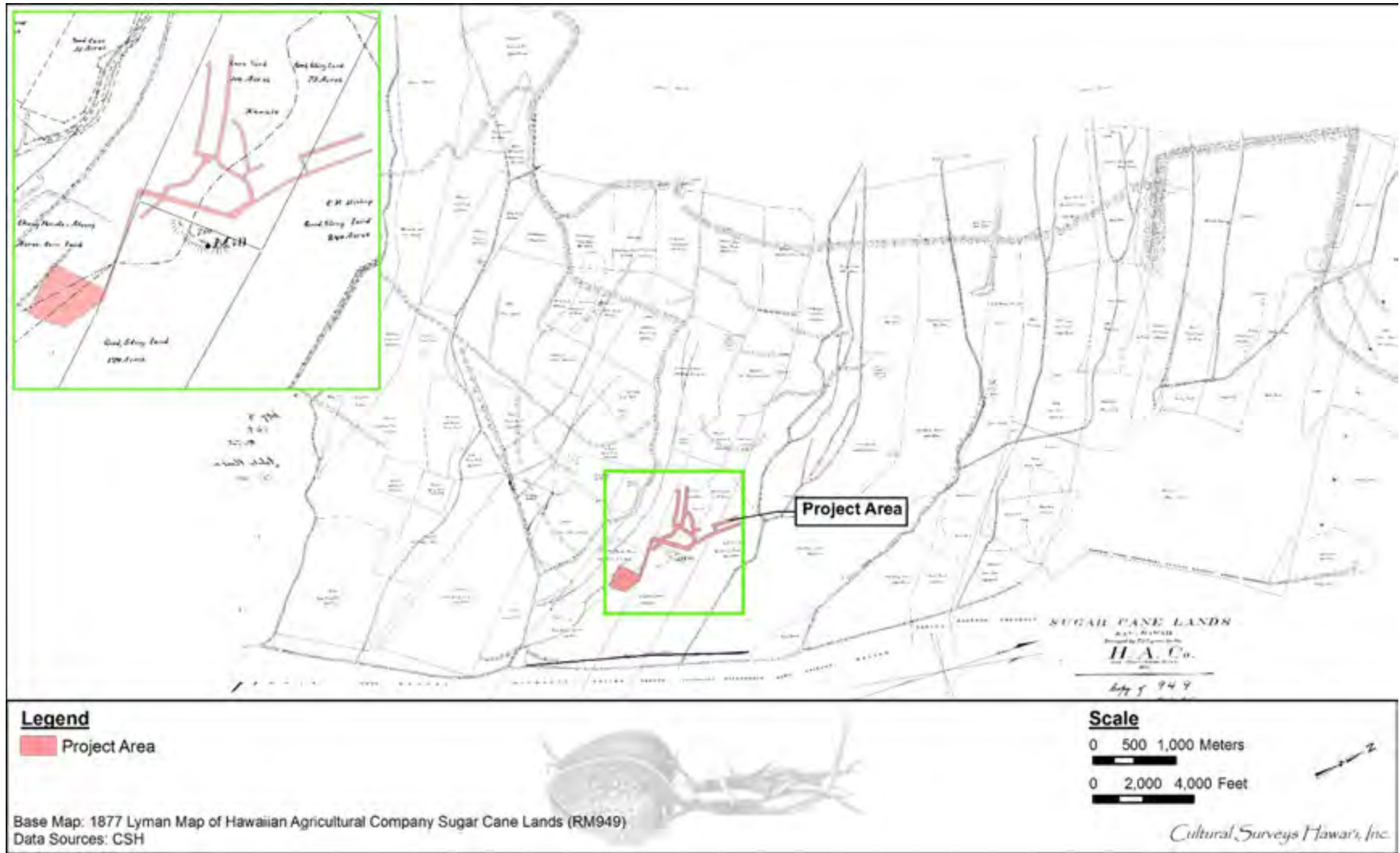


Figure 9. F.S. Lyman 1877 map of Hawaiian Agricultural Company sugarcane lands, showing the project area in relation to the Pāhala Mill and developed cane lots

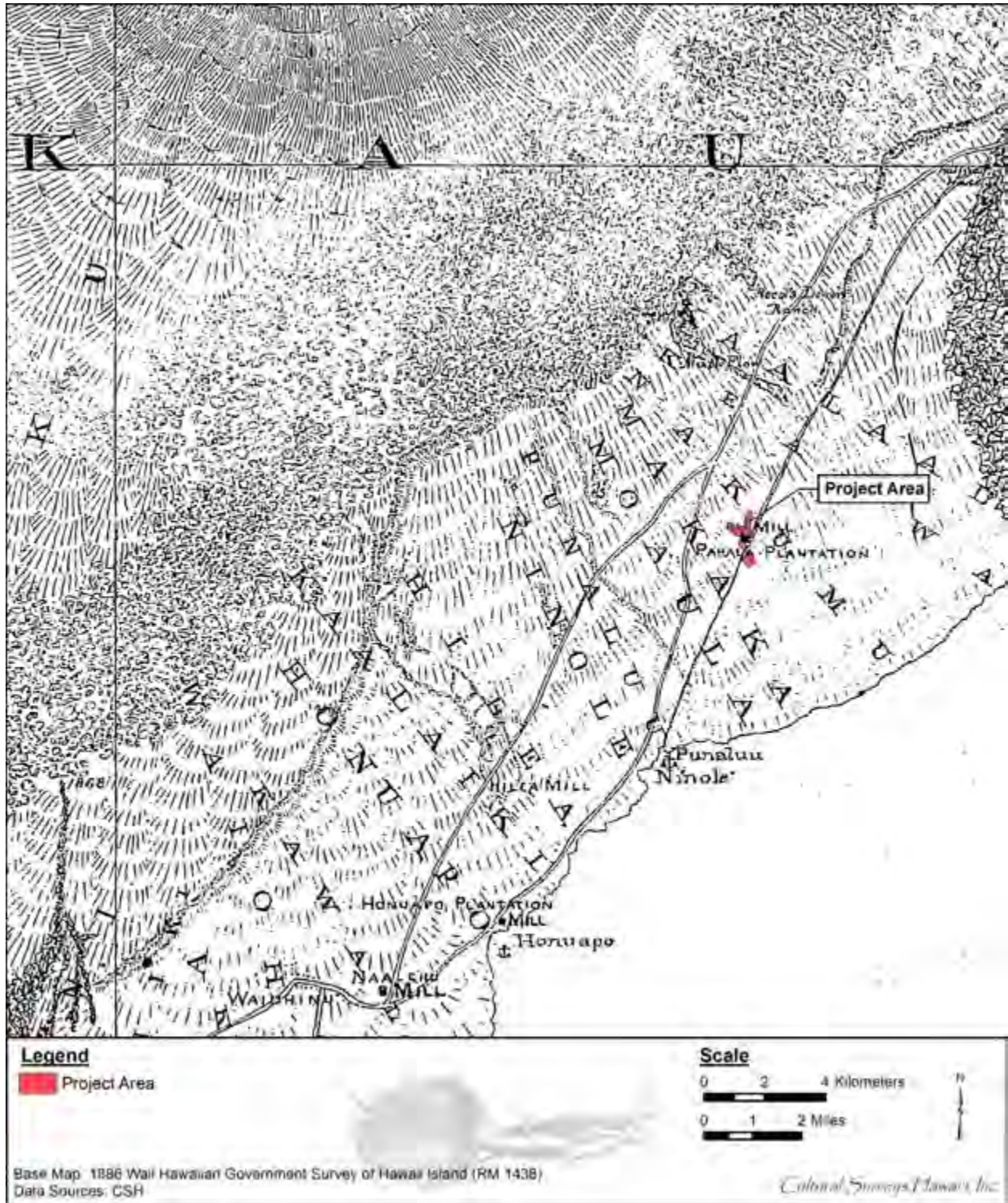


Figure 10. Portion of W.A. Wall’s 1886 map of Hawai‘i Island, showing the project area in relation to sugar mills and harbors in windward Ka‘ū

By the end of the nineteenth century the Hawaiian Agricultural Company controlled almost 10,000 acres of cane land and constituted the largest plantation in the Hawaiian Islands. The extensive agricultural endeavors taking place in Ka'ū at this time were also altering the social landscape. During the 1870s, Chinese laborers were brought in by Alexander Hutchinson. By the time of the 1884 government census there were 568 Chinese in the district. Japanese laborers were imported beginning in the latter 1880s and Filipinos began arriving during the first decade of the twentieth century. Ethnic workers' camps surrounded the mill at Pāhala. As the town around the mill developed, a school was established at Pāhala in 1881 to serve the children of the plantation workers.

### 3.1.5 1900s

Life in the early twentieth century continued to center around the activities of the two sugar operations, Hutchinson Sugar Plantation and the Hawaiian Agricultural Company. Pāhala continued to develop as a town. A 1906 map (Figure 11) depicts the location of a school approximately 0.5 miles north of the current Ka'ū High and Pāhala Elementary School (KHPES) campus location, and a post office in the vicinity of the project area. Figure 11 also illustrates the approximated boundaries of sugar plantation lands (in red) in relation to the forest lands *mauka* (in blue) and grazing lands east associated with Kapapala Ranch. The continued development of roadways in the vicinity of Pāhala Town is also depicted, with the addition of *mauka-makai* and lateral routes between the mills at Honu'apo and Pāhala (see Figure 11). The portions of these roadways in closest proximity to Pāhala are shown in more detail on the 1914 map (see Figure 8); the uppermost road shown is labeled "Kau-Volcano Road." The lower roadway extending through Pāhala plantation is not named.

The 1914 map (see Figure 8) includes some additional details about the Pāhala vicinity. A trail is depicted with a dashed line, crossing the northern portion of the current project area and continuing off the map to the east and west. It is unlikely that any portion of this trail remains within the town vicinity, which has been completely altered by agricultural and residential development. Furthermore, a meandering "Plantation Railroad" is shown, extending southwest roughly parallel to the unnamed roadway and then curving back to the east where it stops abruptly. Presumably this limited railroad was used to carry cut cane to the mill from some of the nearby fields. More remarkable upon the physical landscape at this time must have been the systems of flumes for transporting cane from fields to mills; this was the main method of transporting cane at the time.

Railway development continued, with the establishment of lines running from Nā'ālehu and Hīlea to Honu'apo and from Punalu'u to Pāhala. A 1929 map of Hawaiian Agricultural Co. cane fields (Figure 12) depicts the route of the rail line extending from the mill across through the narrow central portion of the project area and to the west; also shown are the major roadways of the time merging along the present Maile Street corridor. The 1930 USGS topographic map (Figure 13) shows the Pāhala area in better detail, including the narrow-gauge rail line running to Pāhala parallel the coastal road from Punalu'u. The expansion of the town is evident on this map, which includes additional rows of structures along roadways and around the mill, as well as the locations of the school (still north of the present campus), a church, a pipeline, and a large stone wall to the southeast of the town. The route of the major roadway crossing through Pāhala Town, labeled

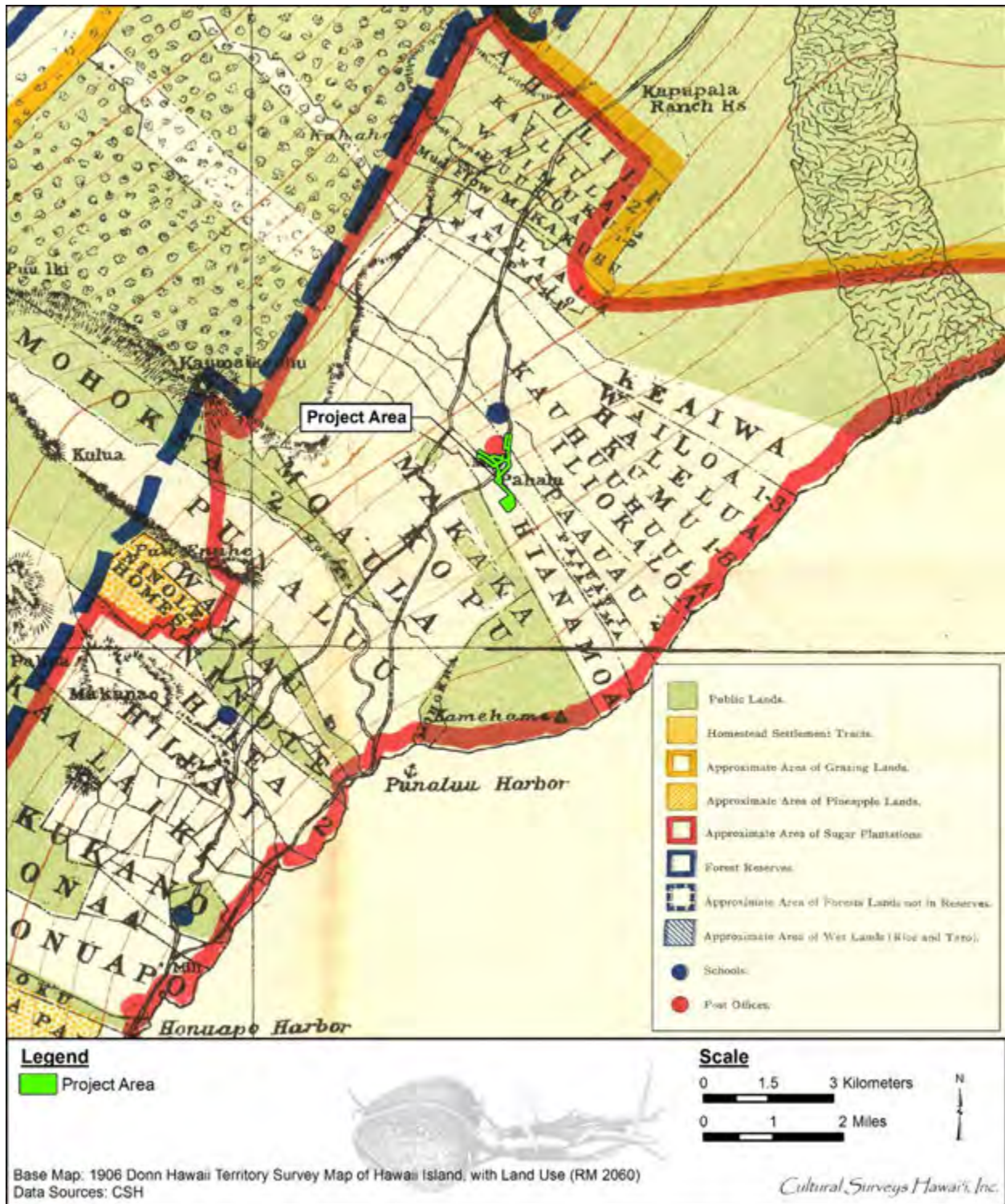


Figure 11. Portion of J.M. Donn's 1906 map of Hawai'i Island, showing the project area in relation to Pāhala Mill, school, post office, and areas of different land use

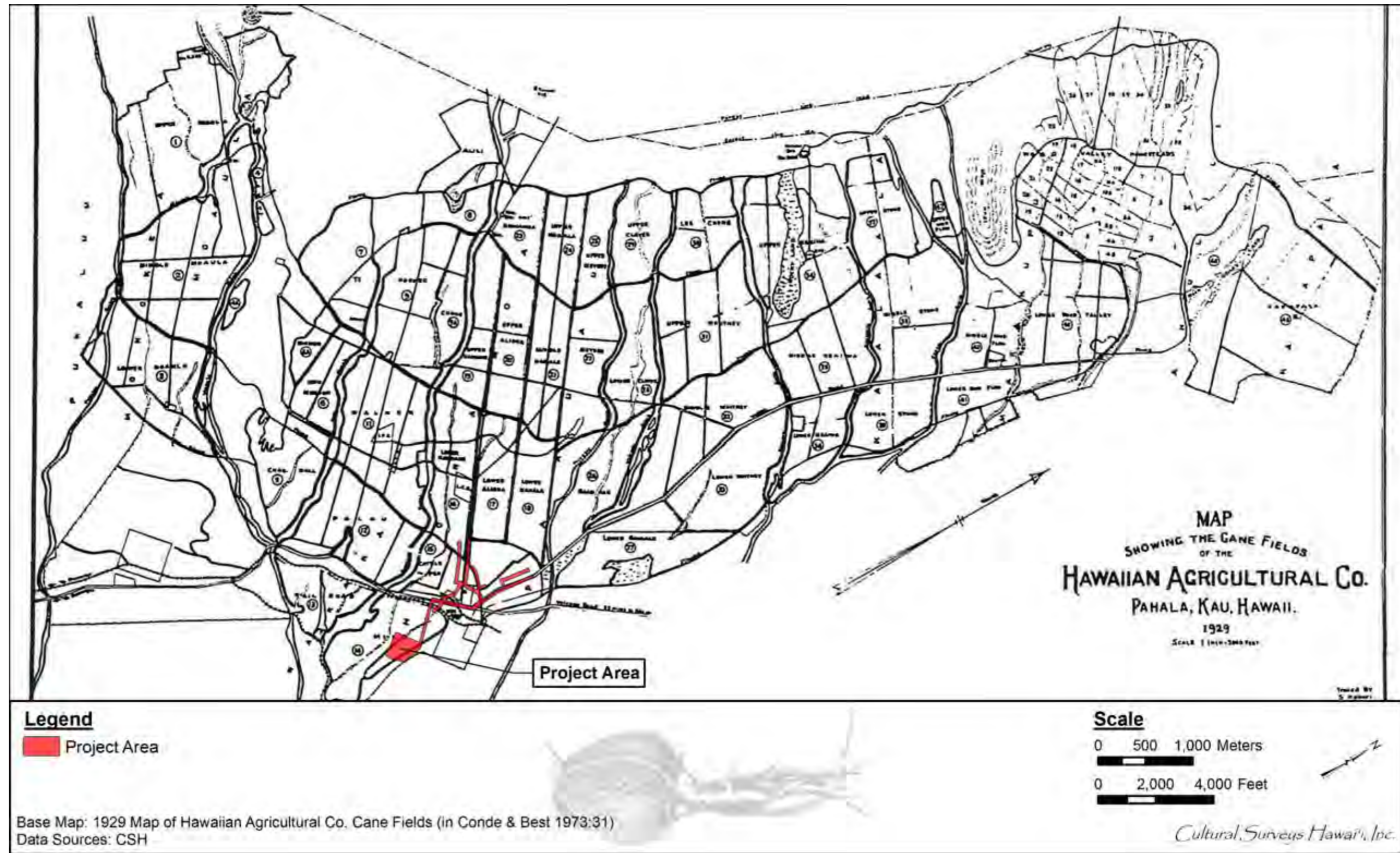


Figure 12. 1929 map of Hawaiian Agricultural Co. cane fields, showing the location of the project area

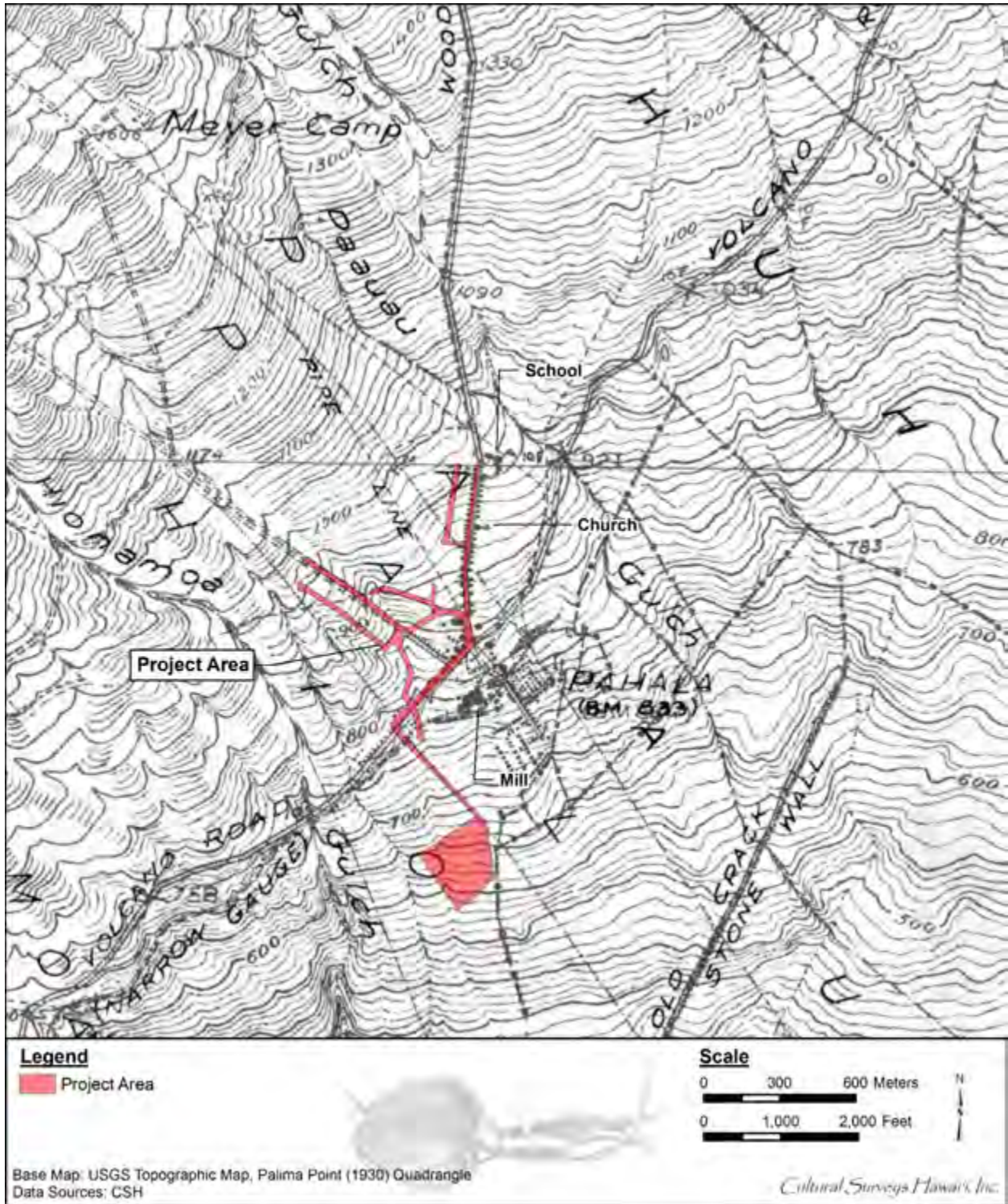


Figure 13. Portion of the 1930 Palima Point USGS 7.5-minute topographic quadrangle showing the project area in relation to the mill, school, church, roads, and railroad in the Pāhala vicinity



“Volcano Road,” utilizes a new eastward extension, with the portion of the older alignment that extended north from the town is now labeled “Wood Valley Road.”

The flumes and railroads in Ka‘ū were abandoned by the 1940s with the advent of trucking. In the 1940s the Belt Road or Māmalahoa Highway (Route 11) was constructed through Ka‘ū, running just *makai* of Pāhala Town. A 1967 USGS map (Figure 14) shows this new route and the continued development of the town. By this time the school had moved southwest into the heart of the town, and a landing strip had been constructed to the northeast. All of the older road alignments are still depicted, but not as major roadways, with the exception of a Route 15 looping off the Belt Road along present Maile Street and Kamani Street. During this latter half of the twentieth century the residential side-streets within Pāhala were also improved with paving and installation of the culvert at the Huapala and Ilima Streets intersection.

The 1940s Belt Road alignment appears on an undated Olson Trust map (Figure 15) reprinted in Cleghorn (2016:13). Hand drawn annotations indicate some land uses in the area dating to the 1960s and 1970s. This map indicates the WWTP site and adjacent areas were under pasture; the easement extending to Maile Street also crosses through a rectangular area labeled “Cane Area Planted Aug. 1966” and a fence line “Plotted Oct. 1961.” Also significant are the locations of a “Cesspool” (LCC 1), and a concrete flume and lava tube located east of the proposed WWTP site. This map appears to depict a portion of the former narrow-gauge railroad following a “1.8 %” grade west of the easement extending south from Maile Street; this illustration may indicate disturbance to or dismantling of the former railroad route by the mid-twentieth century in the area crossed by the easement. The Olson Trust drawing also depicts numerous structures along Maile Street, many of which are no longer present.

A 1977 aerial photo (Figure 16) indicates further expansion of the town to the east amidst large agricultural plots. Note that the proposed WWTP plant site portion of the project area is not cultivated in sugarcane at this time; instead, these former cane fields were being readied for planting of the macadamia orchard that is now fully matured.

The Hawaii Agricultural Company operated until 1972 when it merged with the Hutchinson Sugar Company to form the Kau Sugar Company, which was renamed as the Kau Agribusiness Company in 1986 (Dorrance and Morgan 2000:112). Following the demise of the sugar industry in other parts of the island, Kau Agribusiness Company ceased its sugar operations in 1996 (Dorrance and Morgan 2000:112).

### 3.1.6 Contemporary Land Use

Pāhala continues to serve a small rural population supported by predominately agricultural and livestock economies. The town is also used as a stop-over for tourists visiting Punalu‘u Beach located 5 miles southwest and/or travelling between Hilo and Kailua-Kona.

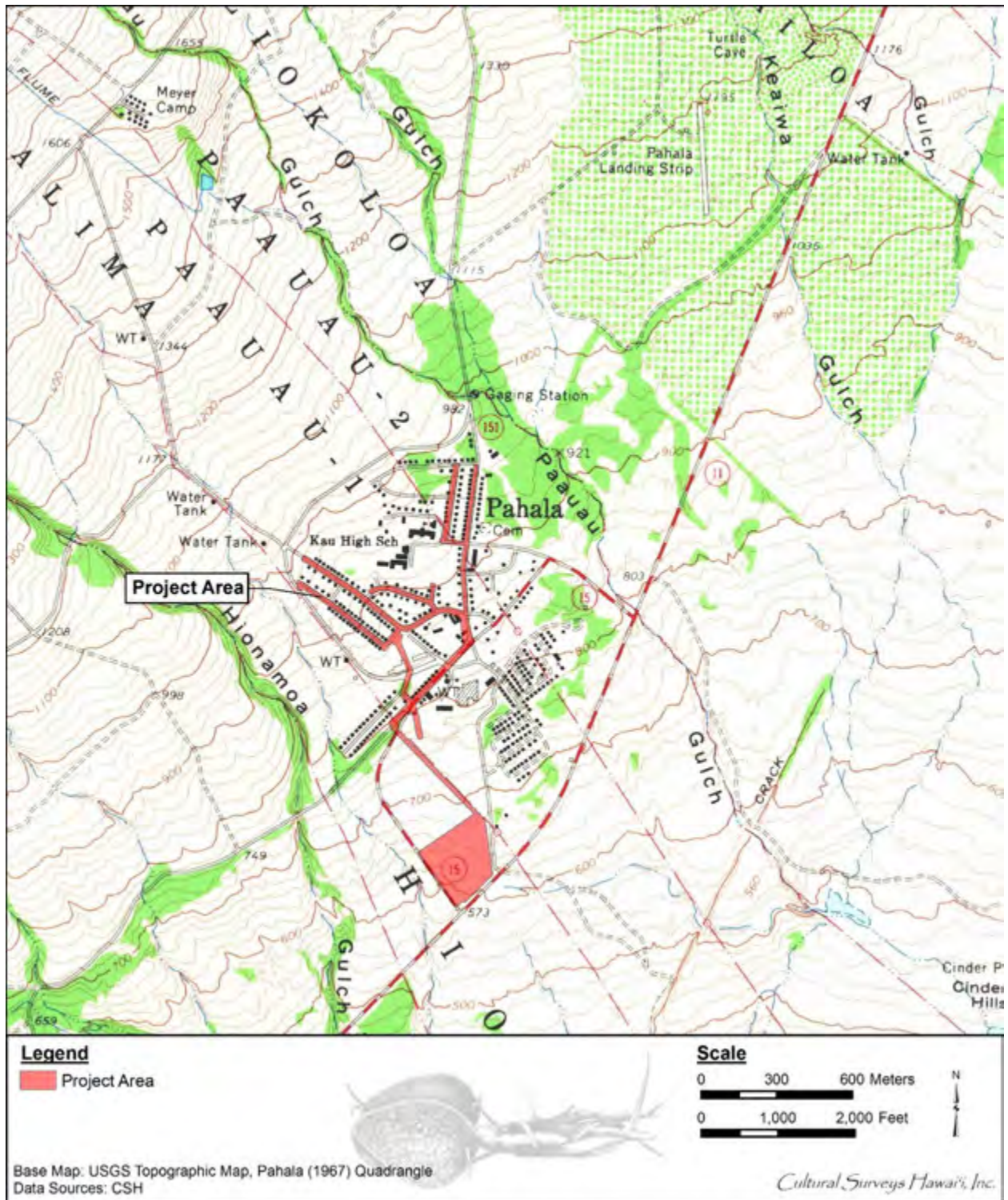


Figure 14. Portion of the 1967 Pahala USGS 7.5-minute topographic quadrangle showing the project area and development within Pāhala Town

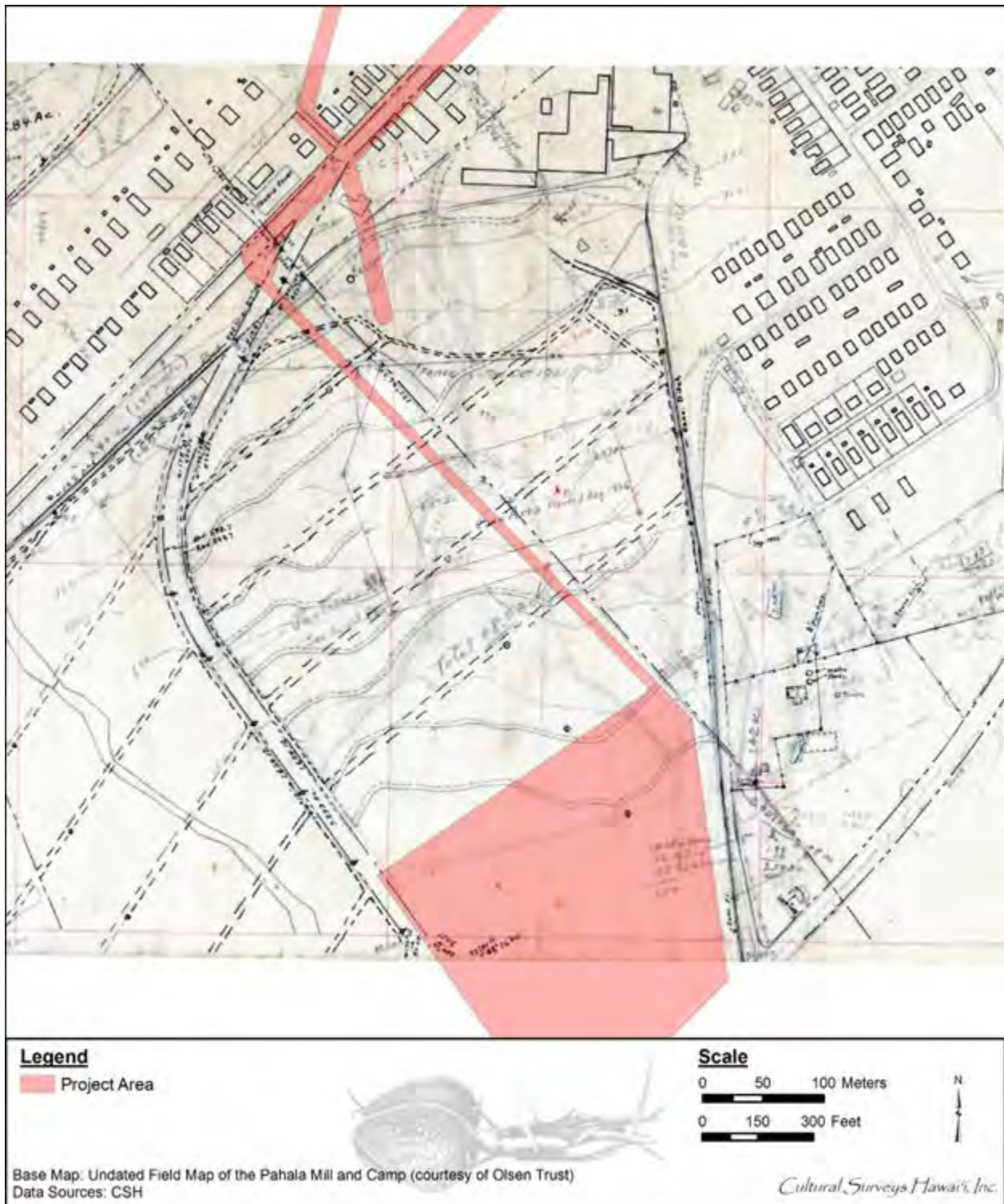


Figure 15. Portion of an undated field map of the Pahala Mill and Camp reprinted in Cleghorn (2016:13) showing the project area in relation to plantation features

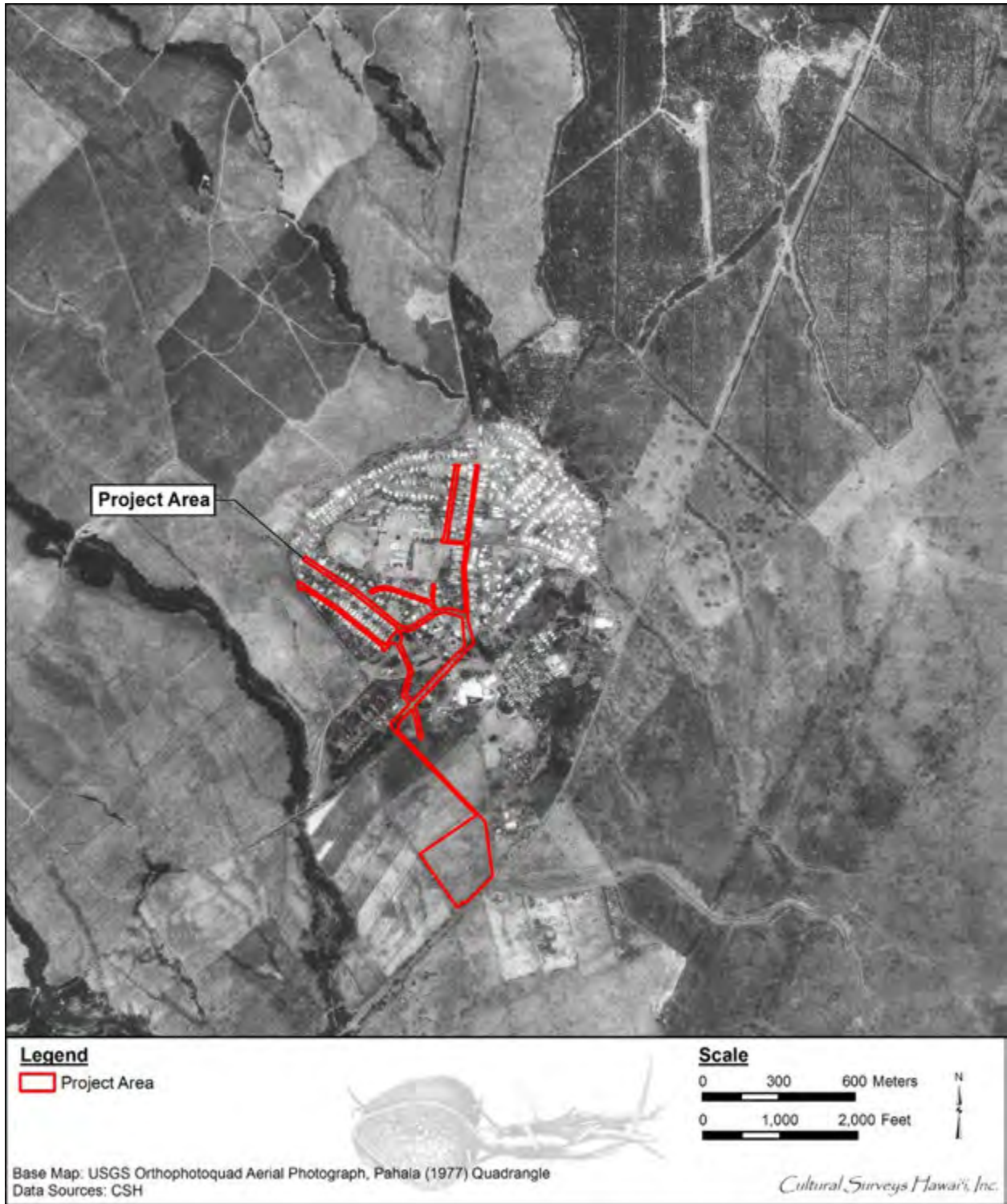


Figure 16. Portion of the 1977 USGS orthophotoquad aerial photo, Pahala Quadrangle, showing the project area and continued development of Pāhala Town

## 3.2 Previous Archaeological Research

### 3.2.1 Previous Archaeological Studies

Eight previous archaeological studies have been conducted in the vicinity of the current project area in Pāhala. These previous archaeological studies are presented in Table 1 and shown in Figure 17.

In 1981, Hamilton Ahlo undertook an archaeological reconnaissance for the U.S. Army Corps of Engineers Pā'au'au Stream Flood Control project, located east of the current project area along the Pā'au'au 2 and 'Iliokoloa Ahupua'a boundary (Ahlo 1981; see Figure 17). The study examined an approximately 4,000-ft (1.2-km) section of Pā'au'au Stream just *mauka* of the Hawai'i Belt Road (Route 11) and the adjacent embankments. Extensive prior disturbance was noted along both sides of the stream; no archaeological features were documented, and no further work was recommended.

In 2001, Haun and Associates conducted an archaeological assessment (no finds AIS) for an emergency replacement of the Pā'au'au Bridge, situated east of the current project area along the Hawai'i Belt Road in Pā'au'au 2 and 'Iliokoloa (Haun 2001; see Figure 17). The 5.256-acre project area included the bridge over Pā'au'au Gulch, the approaches on either side of the bridge along the highway, and adjacent areas to the east. Significant prior disturbance from agricultural and road development and a major flooding event were noted. No archaeological features were documented, and no further work was recommended.

In 2004, Haun and Associates conducted an AIS on 255.7 acres in Palima and Pā'au'au Ahupua'a, northwest of the current project area (Haun and Henry 2004; see Figure 17). The study confirmed extensive prior disturbance from modern and historic agricultural activity dating back to the latter half of the nineteenth century. One newly recorded historic property was documented: SIHP # -24119, a 105-m-long section of a historic irrigation flume associated with the former sugar plantation (Figure 18). No traditional sites were identified, and no further work was recommended.

In 2006, T. S. Dye & Colleagues, Archaeologists, Inc. conducted an archaeological assessment of a proposed cellular site within a 1,600-sq-ft portion of TMK: [3] 9-6-005:018, northwest of the current project area in Pālima and Pā'au'au 1 Ahupua'a (Jourdane and Dye 2006; see Figure 17). Prior disturbance associated with commercial agriculture were noted. No archaeological features were observed.

As part of a state-wide Department of Education (DOE) wastewater systems improvement project, CSH undertook a literature review and field inspection (LRFI) for two Ka'ū District schools, including KHPES located between the northern portions of the project area (Hammatt and Shideler 2006; see Figure 17). The LRFI included background research for the Pāhala area including LCA data and previous archaeological studies in the vicinity and noted that the school is listed on the HRHP under the thematic group "Public Schools on the Island of Hawai'i" (SIHP # -07522; see Figure 18). Hammatt and Shideler (2006:27) recommended on-site archaeological monitoring for the project.

In 2009 CSH monitored the DOE wastewater systems improvements project at KHPES (Wilkinson et al. 2010; see Figure 17). The project involved the installation of a new leach field, eight septic tanks, and associated sewer lines. While no subsurface cultural deposits were located

Table 1. Previous archaeological studies in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP # 50-10-69****)
Ahlo 1981	Archaeological reconnaissance	Pā'au'au Stream between Māmalahoa Hwy (Route 11) and Wood Valley Rd, Pā'au'au 2 and 'Iliokoloa Ahupua'a; TMK not listed	No historic properties or cultural materials identified
Haun 2001	Archaeological inventory survey (recorded as an archaeological assessment)	Pā'au'au Bridge, Pā'au'au 2 and 'Iliokoloa Ahupua'a, portions TMKs: [3] 9-6-002:047, 9-6-012:012, 9-6-013:005, 9-6-023:043	No historic properties or cultural materials identified
Haun and Henry 2004	Archaeological inventory survey	Pālima and Pā'au'au 1 Ahupua'a, TMKs: [3] 9-6-005:017, 018 and 9-6-006:004	One historic property documented: SIHP # -24119, historic irrigation flume associated with sugarcane cultivation
Dye and Jourdan 2006	Archaeological inventory survey (recorded as an archaeological assessment)	Pālima and Pā'au'au 1 Ahupua'a, TMK: [3] 9-6-005:018 por.	No historic properties or cultural materials identified
Hammatt and Shideler 2006	Literature review and field inspection	Two DOE schools in Ka'ū District, TMKs: [3] 9-6-005:008, 039; 9-5-009:006, 015	Noted listing of KHPES on the HRHP; on-site archaeological monitoring recommended
Wilkinson et al. 2010	Archaeological monitoring	Ka'ū High and Pāhala Elementary School, Pā'au'au Ahupua'a, TMKs: [3] 9-6-005:008, 039	Noted listing of KHPES on the HRHP; one other historic property documented: SIHP # -27570, lava tube
Escott 2013	Archaeological inventory survey	Ka'ū High and Pāhala Elementary School, TMK: [3] 9-6-005:008 por.	Explored and mapped previously recorded SIHP # -27570 (lava tube system), documenting three new features; documented one new historic property, a historic-era burial (SIHP # -29501) within the SIHP # -27570 lava tube
Cleghorn 2016	Archaeological field inspection	Pa'au'au 1 Ahupua'a, TMK: [3] 9-6-002:018	Documented scattered surface artifacts and a lava tube within former plantation land; AIS recommended

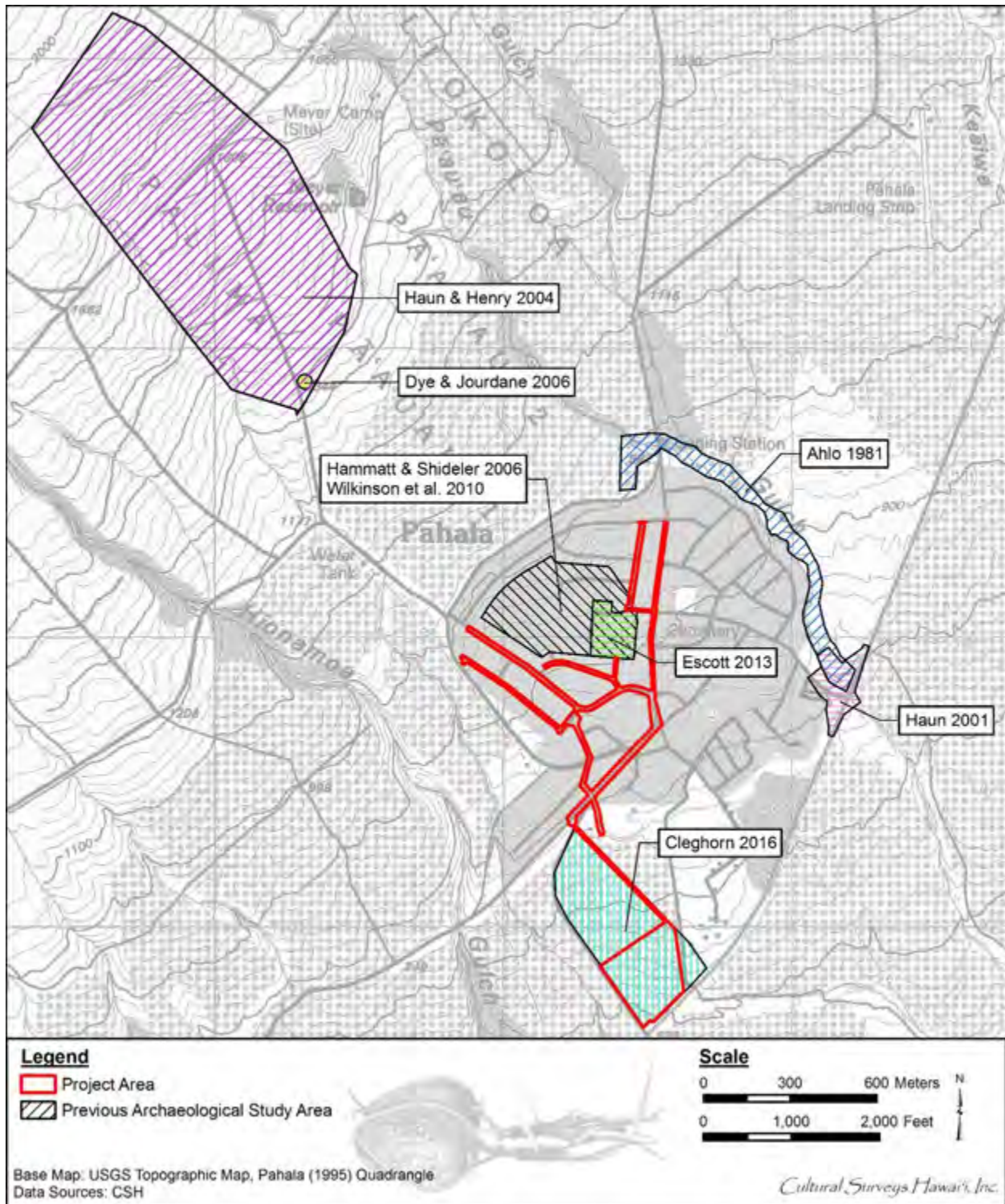


Figure 17. Portion of the 1995 Pahala USGS 7.5-minute topographic quadrangles showing previous archaeological studies in the vicinity of the project area

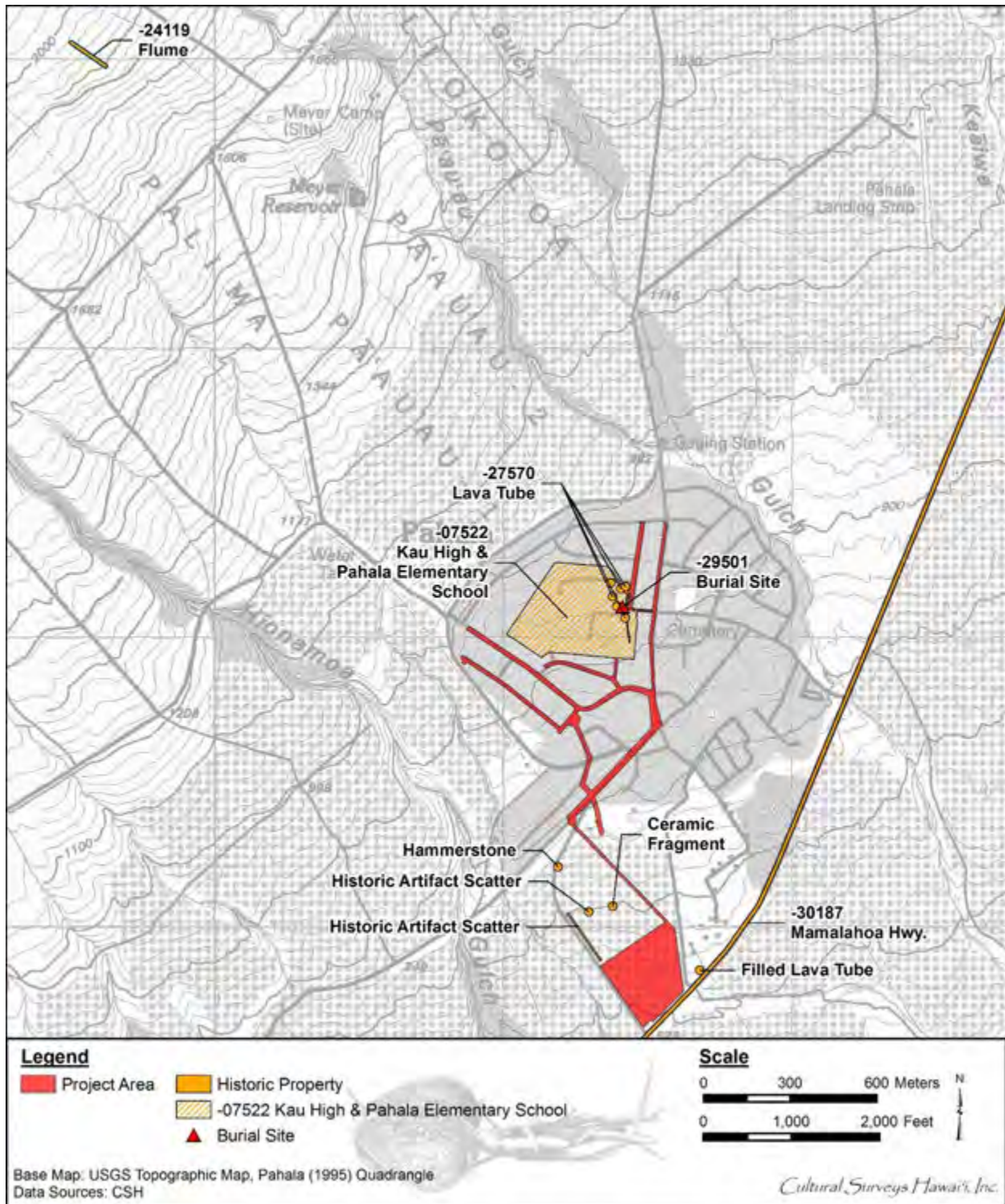


Figure 18. Portion of the 1995 Pahala USGS 7.5-minute topographic quadrangles showing locations of sites documented in previous archaeological studies in the vicinity of the project area



during excavation, a lava tube system was breached and assigned a site number (SIHP # 50-10-69-27570) despite an absence of cultural modifications to the breached portion of the tube system. The location of SIHP # -27570 is shown on Figure 18.

In 2012, Scientific Consultant Services, Inc., conducted an AIS for a proposed gymnasium and disaster relief shelter within a 4.5-acre portion of the KHPES campus, adjacent to but outside the northeastern portion of the current project area (Escott 2013; see Figure 17). The SIHP # -27570 lava tube system was also explored and mapped. A burial site was found within the tube and designated SIHP # 50-10-69-29501 (see Figure 18). This burial is located away from the limits of the current project area. Escott (2013) describes the lava tube system as follows:

The lava tube system containing Site 27570 and Site 29501 has three main branches converging near the tube system opening under a modern storm drain grate [Figure 19]. The southern branch does not contain archaeological sites. Sites 27570 and 29501 are located in the northern and western branches of the tube system, respectively.

The western branch includes two tubes that are situated parallel to each other and are connected at two points. The western branch of the tube system is closed off by collapse at its western terminus. Site 29501 is located in the northern tube of the western branch, roughly 35.0 meters in from the storm grate opening [Figure 20].

The northern branch of the tube system is accessed through an opening in the floor of the western tube system. The floor of the northern branch is approximately 3.0 meters below the floor of the western branch tube . . . [Escott 2013:17]

No other archaeological features were located within the 4.5-acre project area. Escott (2013:36) noted SIHP # -29501 would “be preserved in accordance with a Hawai'i Island Burial Council-approved Burial Treatment Plan,” and recommended archaeological monitoring of any future ground disturbing work “near the northern and western branches of the tube system.”

In 2016 Pacific Legacy, conducted archaeological field inspection of TMK: [3] 9-6-002:018, addressing an earlier and larger version of the WWTP project (Cleghorn 2016; see Figure 17). Extensive disturbance associated with development of the macadamia nut orchard was noted. Surface artifacts were encountered within a portion of the macadamia nut orchard that is no longer within the project area limits (see Figure 18). These artifacts included a single traditional hammerstone and fragmental historic glass and ceramics. The report also discussed a lava tube known to exist between the vicinity of the present Royal Hawaiian Orchards processing plant and KHPES; an opening to the tube on the processing plant property was filled in sometime in the past to prevent access. Pacific Legacy recommended discussion with SHPD regarding project historic preservation requirements, noting that an AIS would likely be required. It was also recommended that the vicinity of the lava tube entrance known to exist near the processing plant be excluded from the project area (Cleghorn 2016:7).



Figure 19. Aerial photo showing the Escott (2013) project area and site locations (Escott 2013:18)

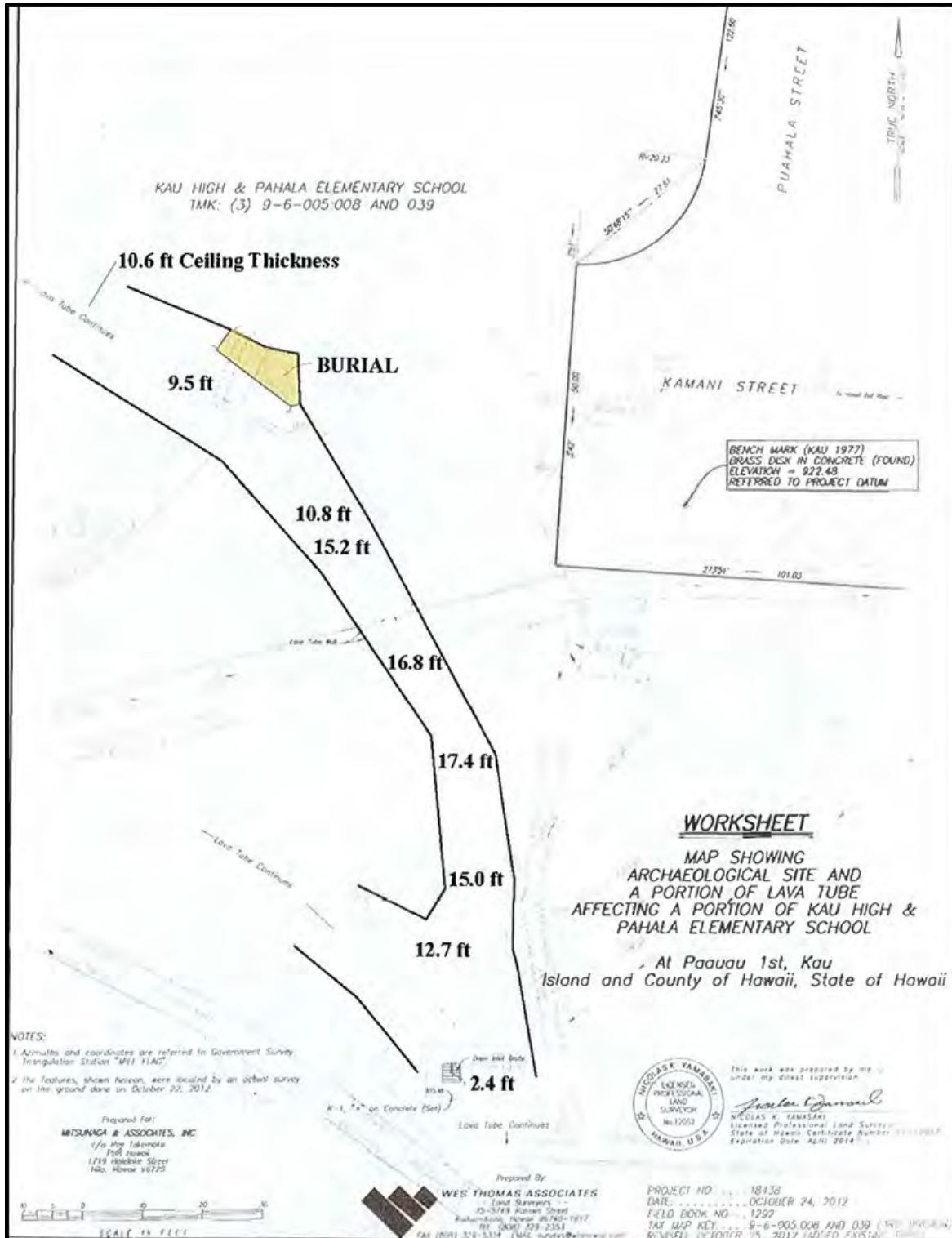


Figure 20. Survey map of SIHP # -29501 burial and SIHP # -27570 lava tube ceiling thicknesses (Escott 2013:19); note the tube is set back from Kamani Street and Puhala Street where a portion of the current project area is located

### 3.3 National Register-Eligible Historic Properties in the Vicinity

Two historic properties near the project APE have been evaluated as eligible for listing on the National Register: Ka'ū High and Pāhala Elementary School and the Māmalahoa Highway. Neither of these sites are within the project APE.

#### 3.3.1 Ka'ū High and Pāhala Elementary School

Ka'ū High and Pāhala Elementary School, located north of and between portions of the project APE (see Figure 18), is part of the thematic grouping “Public Schools on the Island of Hawai'i” (SIHP # 50-10-69-07522). SIHP # -07522 is listed on the Hawai'i Register. The school was nominated to the National Register in May 2002 under the name “Ka'u High and Pahala Elementary School.” The nomination form lists the period of significance as 1935-1950 and areas of significance as Criteria A (education/social history value) and C (architecture value). This historic property has not been listed on the National Register.

#### 3.3.2 Māmalahoa Highway

SIHP # 50-10-47-30187 comprises the former and present alignments of the Māmalahoa Highway (Highway 11/Hawai'i Belt Road); an actively used and contemporary portion of this roadway is located adjacent to the southern boundary of the proposed WWTP site (see Figure 18). Under a prior study (Clark et al. 2014:81) this historic property was evaluated as eligible for inclusion on the National Register under Criteria A and D for its importance in and information about “late nineteenth and early twentieth events in establishing a regional transportation network that has its roots in antiquity.” The portion of the roadway adjacent to the project area was constructed in the 1940s. This historic property has not been nominated for listing on the Hawai'i Register or National Register.

### 3.4 Background Summary and Predictive Model

Ka'ū is a large district known for its dynamic natural environment and fierce people. Despite the impressions of early visitors that the district was a barren wasteland, its abundant and varied resources supported a substantial population. However, in pre-Contract times Pāhala was not a habitation center. Villages were located at the coast or in places like Wai'ōhinu to the southwest where water and other resources were more abundant.

In the first 50 years after Contact, the population of Ka'ū declined dramatically due to introduced disease, natural disasters, and outmigration to developing economic centers. Missions were established in Wai'ōhinu and Punalu'u. In the Māhele, a handful of *kuleana* claims in the Pāhala vicinity indicate land use associated with residence and small-scale farming. The vast majority of Hionamoā Ahupua'a was awarded as LCA 9971:12 to the *ali'i* William Pitt Leleiohoku; this award overlaps the proposed WWTP site. A number of Land Grants were also made in the Pāhala vicinity, including Land Grant 02446 to Kamalo overlapping the northern portion of the project area.

The historic era in Ka'ū was dominated by the development of the livestock and commercial agriculture industries. Several large ranching outfits were established in Ka'ū in the mid-1800s, including Kapāpala Ranch located a relatively short distance east of present Pāhala Town. However, it was sugar plantations that produced the most widespread and lasting impact on the physical and social landscape of Ka'ū. The Hawaiian Agricultural Company was established in

the Pāhala vicinity in 1876 and quickly grew. A mill was established and the village of Pāhala began to develop with the influx of plantation workers and their families. The majority of the project area was under cane at some point in time.

Previous archaeological research in the vicinity has documented very little evidence of pre-Contact land use, partially due to widespread land alteration for the sugar plantation. Historic plantation remnants such as cane flumes have been documented in the area. Lava tubes are also known to be present in and around Pāhala. A lava tube system (SIHP # -27570) has been documented to the north and east of the project area; the lava tube contains a historic to modern refuse dump and a historic burial site (SIHP # -29501) located on the KHPES campus. The school itself is on the HRHP as part of a thematic group of historic Hawai'i Island schools (SIHP # -07522). The Māmalahoa Highway (SIHP # 50-10-47-30187) located just south of the project area has been evaluated as eligible for inclusion on the NRHP but has not been nominated. The current project area does not encroach on any previously documented portions of the lava tube system, the school campus, or the Māmalahoa Highway.

Given the known traditional land use in this area and the impacts of continued agricultural and residential development, surface pre-Contact sites are not expected within the project area. The modern development of the macadamia nut orchard has likely also obliterated any plantation-era sites once present in that portion of the project area; surface features associated with the former plantation village and/or historic transportation routes may be present in other portions of the project area. Subsurface historic features related to sugar cultivation could be present throughout the project area. Furthermore, additional lava tubes may be present and have the potential to contain pre- and/or post-Contact archaeological features, including human burials.

## Section 4 Results of Fieldwork

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CSH completed the fieldwork component of this archaeological inventory survey under archaeological fieldwork permit number 17-08, issued by the SHPD pursuant to HAR §13-282. Fieldwork was conducted on 18 September 2018, 1–4 October 2018, and 10 January 2019. This work required approximately 8 person-days to complete.

The fieldwork comprised a 100% pedestrian inspection of the project area and a program of subsurface testing. The results of the pedestrian inspection are provided in Section 4.1 and the subsurface testing results are provided in Section 4.2.

Two historic properties characterized as historic-era transportation routes (SIHP #s 50-10-69-31088 and -31089) were documented within the project area (Figure 21; see Section 5 for full site descriptions). No pre-Contact features or lava tubes were encountered within the project area.

### 4.1 Pedestrian Inspection Results

A 100% pedestrian inspection was undertaken with the field crew spaced 3-5 m apart depending upon the density of the vegetation. Ground visibility was very good throughout most of the inspection area.

The pedestrian inspection began along the easement located within TMK: [3] 9-6-005:036. This area has been completely disturbed by prior development. From Maile Street, the easement extends northwest along an existing paved driveway to an open, asphalted area located along the southern side of the private roadway used to access Ka'ala'iki Road (Figure 22). This asphalt area is surrounded by previously graded land presently overgrown with California grass. The easement crosses the roadway, entering the former sugar plantation maintenance yard. The easement extends along a dirt driveway between two large, old maintenance buildings that are still in use (Figure 23). These buildings are located outside the easement and project area. North of these structures is a graded, grassy parking area; the easement crosses this parking area and through a previously disturbed, heavily vegetated area containing scrap metal and miscellaneous trash located along the *makai* side of Ilima Street (Figure 24). An earthen storm water drainage channel extends along the *makai* side of Ilima Street southwest from a culvert at Huapala Street and contains scattered modern household trash (Figure 25).

Upon exiting the proposed easement within TMK: [3] 9-6-005:036, the survey continued along various residential streets within the project area, including Pikake Street, Kamani Street, Puahala Street, Huapala Street, Hala Street, Hinano Street, and Ilima Street (Figure 26 through Figure 29). These streets consist of one-to-two-lane asphalt travel ways with no curbing or sidewalks. These streets employ variable use of standard signage and center and outer lane striping. A four-way crosswalk is located at the Pikake Street and Kamani Street intersection near the KHPES campus (Figure 30). Kamani Street dead ends at the school and the project area does not cross onto the campus. The homes lining these residential streets outside the project area are of variable age but are commonly of post-and-pier “plantation style” design with corrugated metal roofing. Slight linear depressions are typically present along one side of each street within the asphalt or grassy shoulder, providing drainage for runoff; these drainages are also outside the asphalt travel ways comprising the project area. A single culvert constructed in the 1960s was observed running under the modern Huapala Street surface adjacent to the Ilima Street intersection (Figure 31); this culvert

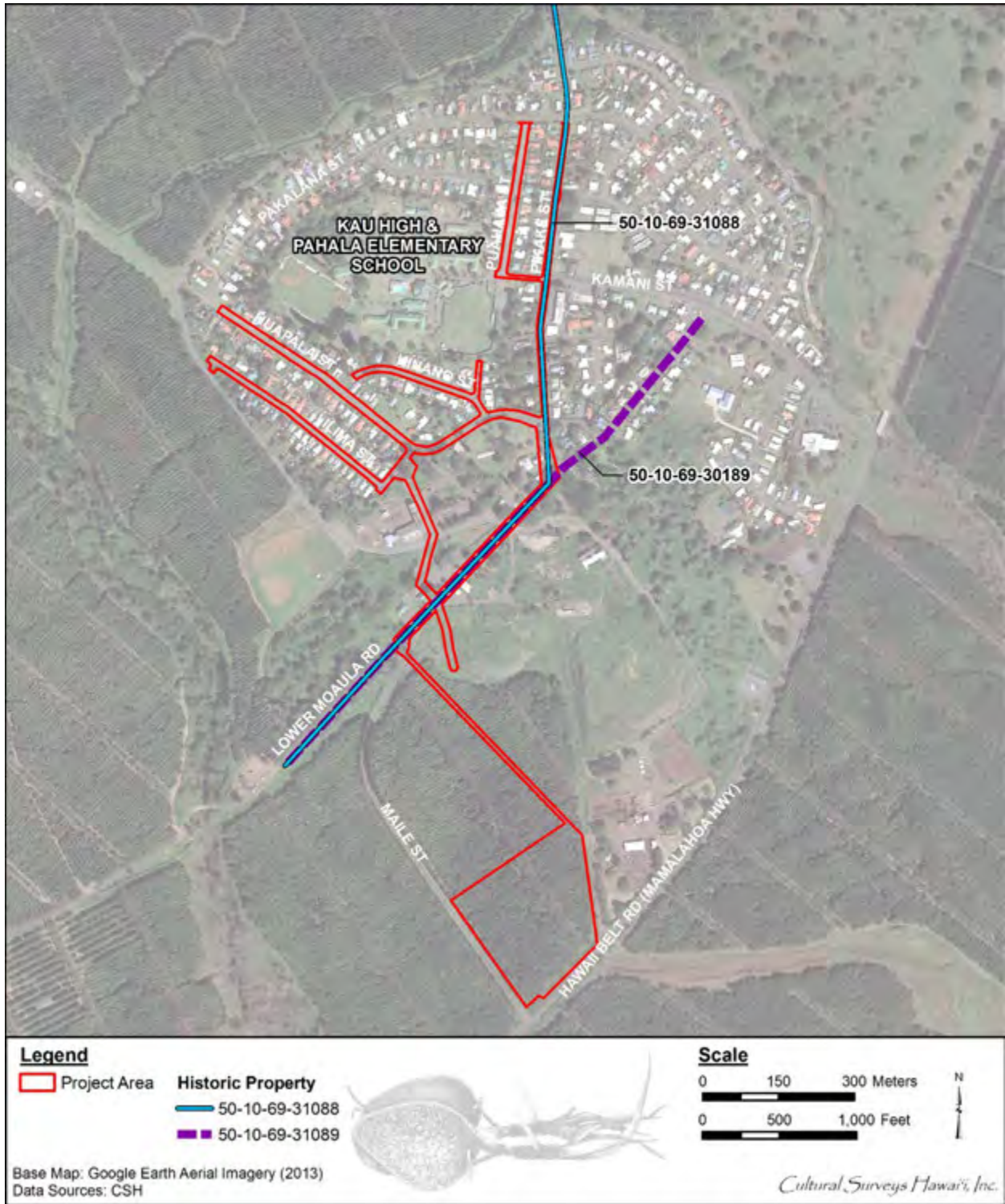


Figure 21. Aerial photo of the project area (Google Earth 2013) showing the locations of newly documented historic properties



Figure 22. Photo showing the portion of the easement in TMK: [3] 9-6-005:036 that extends from Maile Street along an existing asphalt driveway; view northwest



Figure 23. Photo showing the portion of the easement in TMK: [3] 9-6-005:036 that passes through the old plantation maintenance yard; the structures present to either side are outside the project area; view to northwest





Figure 24. Photo showing the forested area between the maintenance yard and Ilima Street at the northern end of the easement in TMK: [3] 9-6-005:036; view to northwest



Figure 25. Photo showing the location where the easement in TMK: [3] 9-6-005:036 exits at Ilima Street (frame right); the earthen drainage channel extending from the Huapala Street culvert is beneath the grass to the left of the road; view to southwest



Figure 26. Photo looking down Huapala Street; note linear drainage in grassy lawn on left side of photo; view to southeast



Figure 27. Photo looking up Ilima Street; note drainage in grassy shoulder on right side of photo; view to northwest



Figure 28. Photo looking up Hinano Street from the eastern Huapala Street intersection; view to northwest



Figure 29. Photo looking up Hala Street from the Hinano Street intersection; view to north



Figure 30. Photo of the intersection of Pikake and Puahala streets; view to northwest



Figure 31. Photo of the culvert located at the Huapala Street and Ilima Street intersection; view to northeast

diverts runoff into the channel located along the *makai* side of Ilima Street (see Figure 25).

Pikake Street is an arterial route in Pāhala lined with commercial establishments in addition to residences. Research has indicated this present roadway is a portion of a historic road alignment (SIHP # -31088, Wood Valley Road/Coastal Road; see Figure 21 and Section 5.1). A commercial center at the Pikake Street and Kamani Street intersection includes a bank, drugstore, post office, and the Mizuno Superette (Figure 32). The southern portion of Pikake Street approaching its terminus at Maile Street is technically a private roadway located within TMK: [3] 9-6-005:044. Pikake Street at the Maile Street intersection includes turn lanes (Figure 33). A broad asphalt parking area is located along the northeastern side of the intersection, fronting the offices of Olson Trust. On the western side of this intersection are the offices of Kau Agribusiness Company, comprising two plantation-era buildings (see Figure 33). Within the grassy yard fronting these buildings is an old Corliss steam engine once used by the sugar mill. These structures and the engine are located outside the project area.

The inspection proceeded southwest down Maile Street from the Pikake Street intersection. The project area includes an approximately 0.25-mile portion of Maile Street located between the old mill camp road and the Lower Moaula Road intersection (Figure 34 and Figure 35). Research has indicated this present roadway is a portion of a historic road alignment (SIHP # -31089, Volcano Road; see Figure 21 and Section 5.2). Along the *makai* side of Maile Street in this area are an old plantation house (which has been subsequently used as a store) and visible remnants of the mill and theater; all these features are located outside the project area. Along the *mauka* side of Maile Street in this area are a Hawaiian Telcom building (see Figure 34), a few old plantation homes serving as residences, and the asphalt parking area noted previously, as well as a section of concrete sidewalk. Both sides of Maile Street exhibit extensive prior disturbance. No remnants of the old plantation railroad were observed.

From the vicinity of the Maile Street/Lower Moaula Road intersection, the inspection continued southeast along the proposed utility easement within TMK: [3] 9-6-002:018. Closest to Maile Street the easement briefly crosses a previously graded area overgrown in California grass and other weeds, before entering the macadamia orchard. This easement extends through the orchard to the proposed WWTP plant site. The orchard contains linear rows of mature trees watered via surface irrigation lines (Figure 36). Fallen macadamia nuts, leaf litter, and relatively few small stones are present on the ground surface. Signs of surface water runoff were observed throughout the orchard. An asphalt road accessing the processing plant from Maile Street forms the *mauka* border of the proposed plant site (Figure 37). Bulldozer push piles were observed along the Belt Road edge and down the center of the orchard (Figure 38 and Figure 39), and bulldozer blade scars are frequently visible on small exposures of lava bedrock throughout the orchard. During the survey fieldwork CSH crew observed operation of a machine in an adjacent orchard used to harvest macadamia nuts off the ground; this machine was observed to scatter small rocks and other natural materials around.

A few scattered pieces of highly fragmental glass and ceramics were observed in the vicinity of the proposed Test Excavation (TE) 2 location in the northern-central portion of the proposed site; testing at this location did not uncover any subsurface cultural materials (see Section 4.2.2). The nature and density of the fragmental cultural materials observed on the surface within the macadamia orchard were not sufficient to comprise a significant cultural deposit. These materials



Figure 32. Photo looking up Pikake toward the Kamani Street intersection; commercial center is visible to the right; view to north



Figure 33. Photo showing the Pikake Street terminus at Maile Street; Hawaiian Telcom building is on opposite corner; view to southwest



Figure 34. Photo of a portion of Maile Street within the project area, showing the Pikake Street intersection in the background and the HELCO building (left frame); view to northeast



Figure 35. Photo of a portion of Maile Street in the project area, showing the Lower Moaula Road fork in the far background; view to southwest



Figure 36. Representative photo of the macadamia orchard; note the surface irrigation lines between the trees; view to southwest



Figure 37. Photo of the paved road that passes through the macadamia orchard between Maile Street and the macadamia nut husking plant; this road forms the *mauka* boundary of the proposed WWTP site portion of the project area; view to northeast





Figure 38. Photo showing the margin of the macadamia orchard at the southeastern corner of the proposed WWTP site portion of the project area; a dozer push pile is present beneath the grass along the left side of the photo; view to southwest



Figure 39. Photo showing a portion of the linear push pile/berm located along the wind break bisecting the macadamia orchard; view to southwest

were similar in nature to those scattered historic artifacts encountered by Cleghorn (2016) in the portion of the orchard north of the current project area. No traditional artifacts like the hammerstone recorded by Cleghorn (2016) were encountered within the current project area.

The last portion of the project area to be inspected was the location of existing LCC 1 and associated sewer easement in TMK: [3] 9-6-002:016. The sewer line easement was recently cleared from an area just below Maile Street; the areas surrounding the cleared easement are fallow with overhead California grass. Ground visibility was excellent along the maintained easement, allowing for relocation of a sewer manhole (Figure 40) and cleanout along the existing sewer line. The LCC 1 location at the *makai* end of the maintained easement is not marked on the ground surface; a low dirt mound is believed to indicate its location (Figure 41). No remnants of the old plantation railroad were observed.

## 4.2 Subsurface Testing Results

Subsurface testing was conducted within the proposed WWTP site portion of the project area, to determine the nature of the sediments and the potential for subsurface archaeological features including but not limited to buried cultural deposits and/or culturally modified lava tubes. This area is a mature macadamia nut orchard. The subsurface testing program involved mechanical excavation of seven test trenches measuring approximately 5 m (16.5 ft) long and 1 m (3.2 ft) wide, with an average depth of 1.6 m (5.2 ft). All seven test excavations terminated at bedrock. The locations of the excavation trenches are depicted on Figure 42 and Figure 43. An archaeologist was present to monitor the excavations and document the exposed stratigraphy, which was recorded upon completion of each trench. No subsurface features or deposits were exposed during excavation, which is consistent with known prior disturbance from sugarcane cultivation and the present macadamia orchard. The stratigraphic information, profile drawings, and photographs taken at each trench follow.

The subsurface testing program generally revealed two distinct natural sedimentary layers located atop decomposing bedrock: a dark, rich silty loam A horizon overlying a dusky red silty clay loam B horizon. These findings are consistent with the USGS Soil Survey (Sato et al. 1973) sediment types depicted in Figure 7 and with past and present agricultural land use. The exception was in TE 1, which contained three stratigraphic layers. Here, the two natural sediment layers are interposed by a layer of ash deposit. The ash was deposited and subsequently covered up at some point in time. Of all the test excavations, TE 1 is in closest proximity to the macadamia but processing plant (see Figure 42) and may be the result of some activity at the former plantation. No charcoal or cultural materials were present within the ash layer.

### 4.2.1 Test Excavation 1 (TE 1)

Test Excavation 1 (TE 1) was located in the northern corner of the proposed WWTP site portion of the project area, where a lagoon is planned for development (see Figure 42 and Figure 43). Figure 44 shows TE 1 marked out with orange flagging tape prior to excavation. TE 1 measured approximately 5 m long and 1 m wide. TE 1 was excavated to a depth of up to 230 cm below surface (cmbs) through two layers of natural Waiaha series sediment (Strata I and III) interposed by a layer of deposited ash (Stratum II), and terminated at basalt bedrock (Figure 44 through Figure 46 and Table 2). No charcoal or cultural materials were observed within TE 1.



Figure 40. Photo of the sewer manhole located along the existing, maintained sewer easement within TMK: [3] 9-6-002:016; view to southwest



Figure 41. Photo showing the LCC 1 location at the *makai* terminus of the existing, maintained sewer easement within TMK: [3] 9-6-002:016; view to south

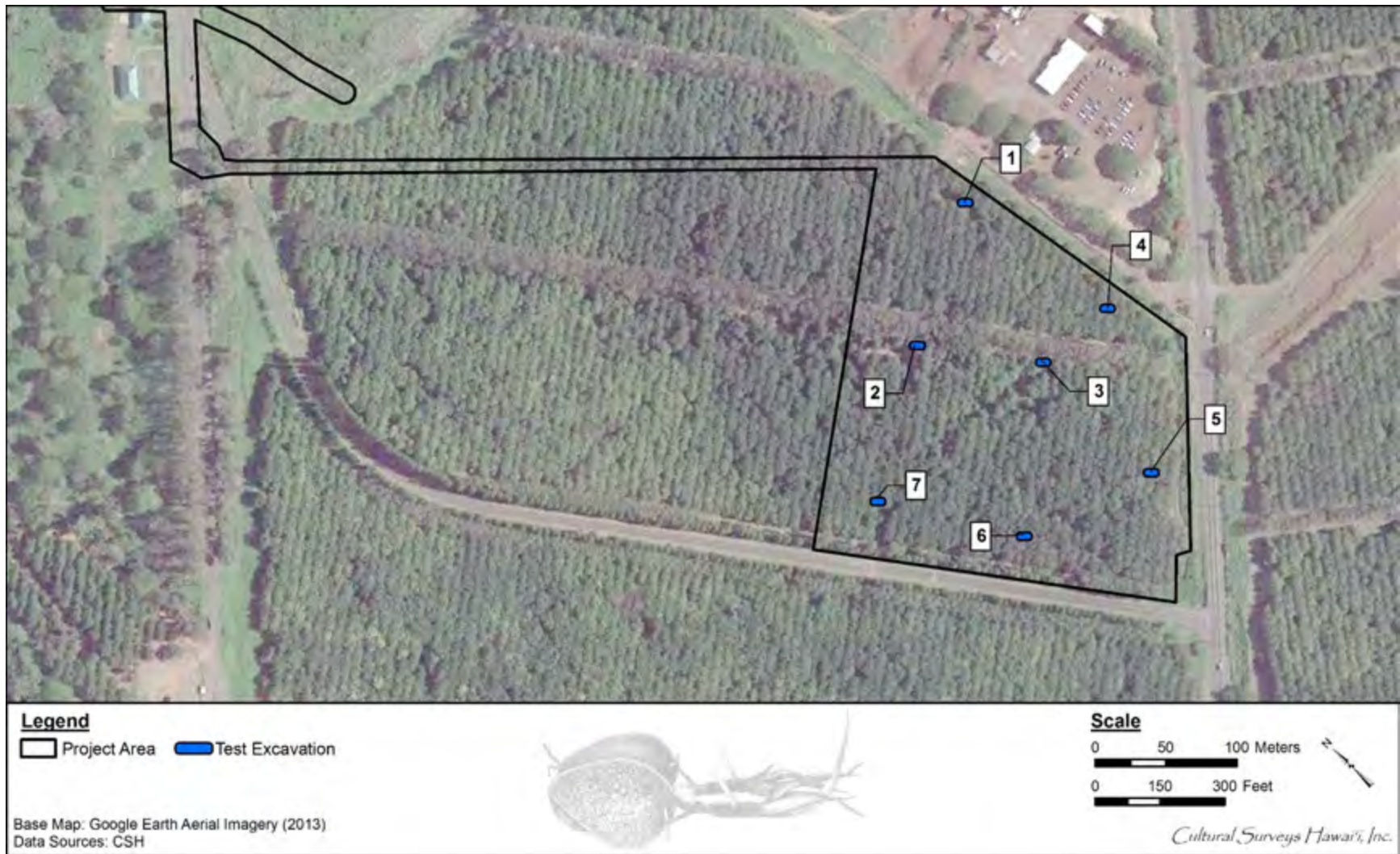


Figure 42. Aerial photograph showing the locations of the seven test excavation trenches within the proposed WWTP site portion of the project area (TE 1 through TE 7) (Google Earth 2013)

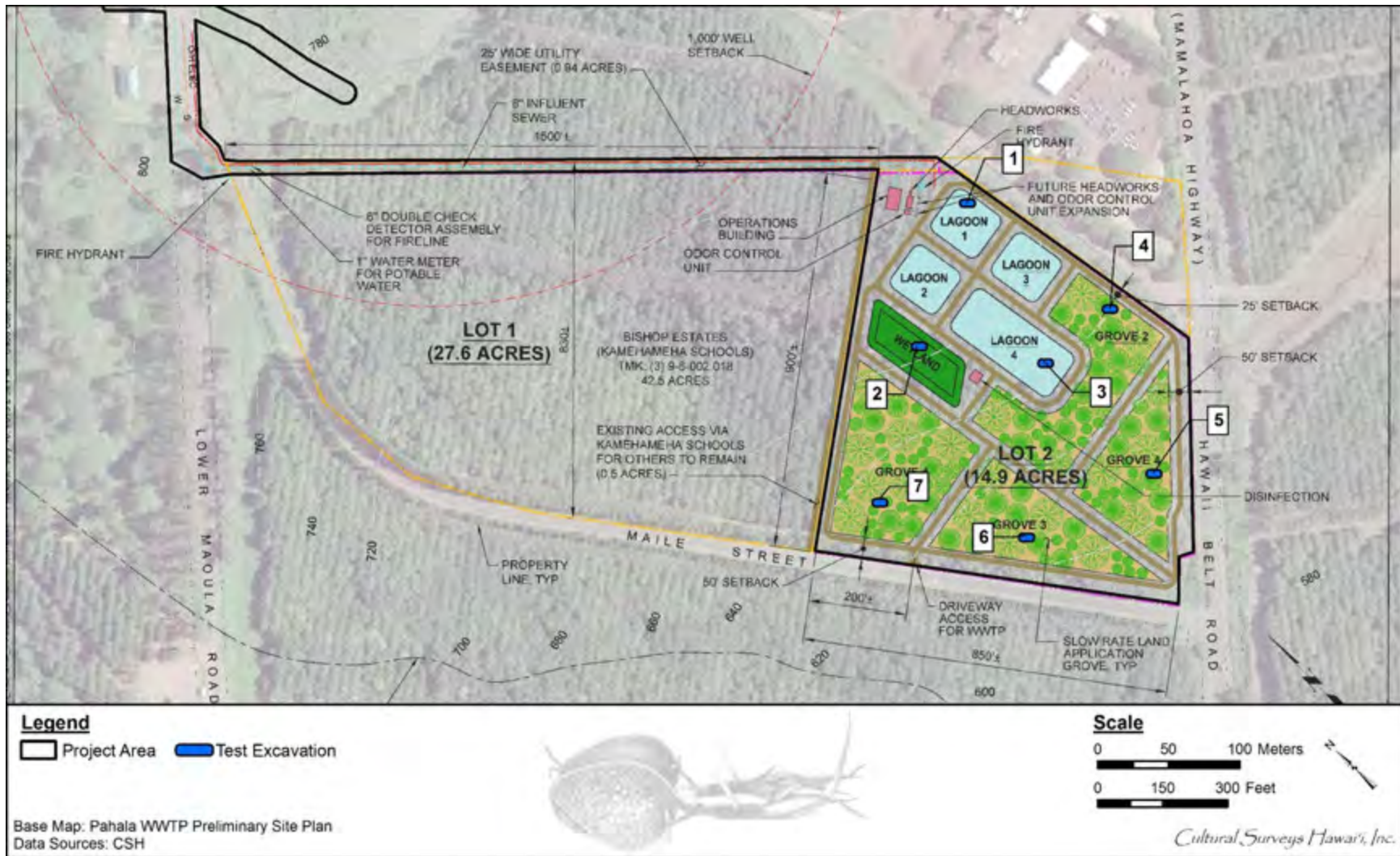


Figure 43. Preliminary WWTP site plan, overlain with locations of the seven test excavation trenches within the proposed WWTP site portion of the project area (TE 1 through TE 7) (site plan courtesy of client, with Google Earth 2013 overlay added)



Figure 44. Photo of TE 1 marked out with flagging tape prior to excavation; view to southwest



Figure 45. Photo of TE 1 northwest sidewall profile; view to northwest

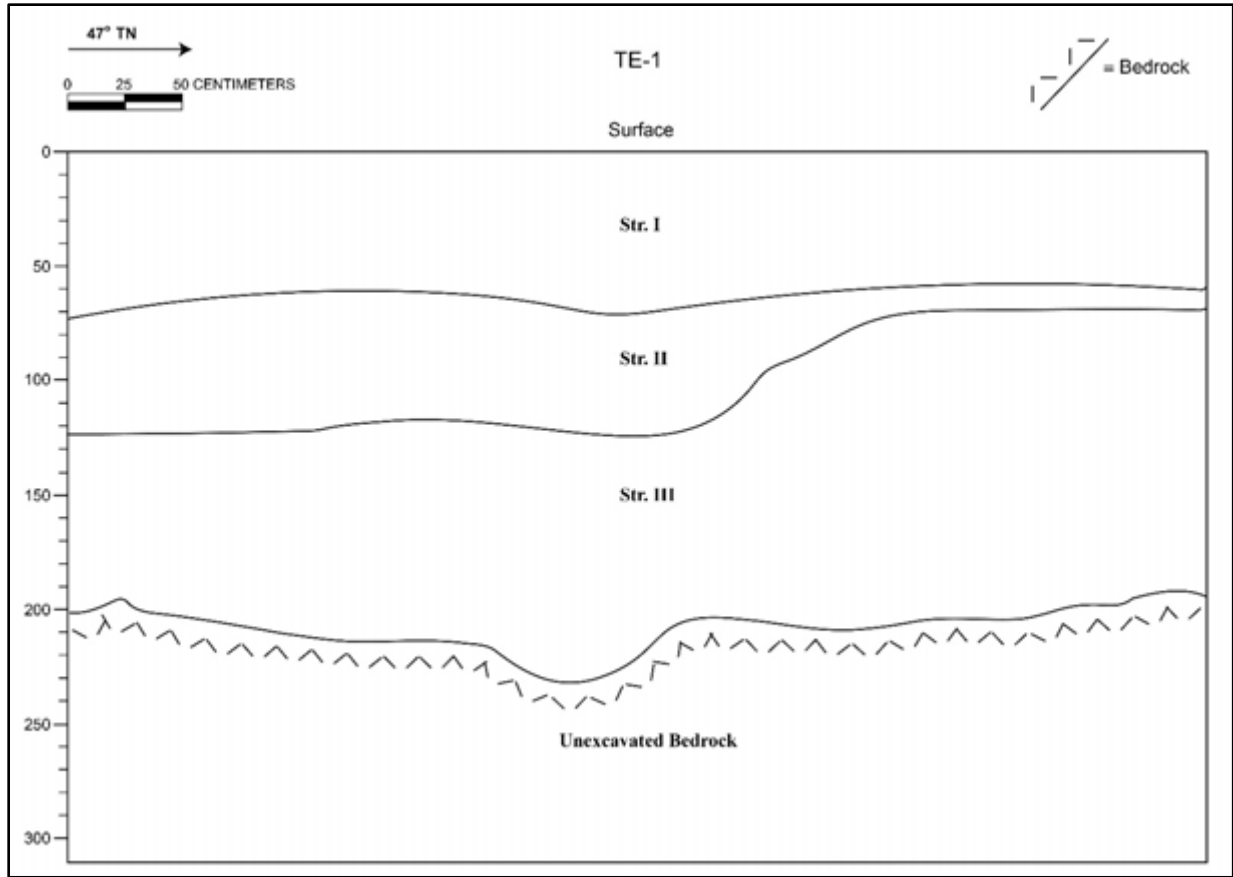


Figure 46. Profile of TE 1 northwest sidewall

Table 2. TE 1 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–72	A horizon; 7.5YR 2.5/3, very dark brown; silty loam; weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; clear, smooth lower boundary; roots common; no cultural material present; natural Waiaha series sediment
II	72–123	Ash; 5Y 7/1, light gray; ash; structureless (single-grain); dry, loose, no cementation consistence; non-plastic; unknown origin; diffuse, wavy lower boundary; few roots; no charcoal or cultural material present; ash deposit possibly associated with former plantation
III	123–230	B horizon; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, wavy lower boundary, terminated at bedrock; few roots; no cultural material present; natural Waiaha series sediment

#### **4.2.2 Test Excavation 2 (TE 2)**

Test Excavation 2 (TE 2) was located within the northern-central section of the proposed WWTP site portion of the project area, where a wetland is planned for development (see Figure 42 and Figure 43). Figure 47 shows TE 2 marked out with orange flagging tape prior to excavation. TE 2 measured approximately 5 m long and 1 m wide. TE 2 was excavated to a depth of up to 120 cmbs through two layers of natural Waiaha series sediment (Strata I and II) and terminated at basalt bedrock (Figure 48, Figure 49, and Table 3). Despite the presence of a few small pieces of highly fragmental historic materials on the ground surface in the TE 2 locale (see Section 4.1), no cultural materials were observed within TE 2.

#### **4.2.3 Test Excavation 3 (TE 3)**

Test Excavation 3 (TE 3) was located near the center of the proposed WWTP site portion of the project area, where a lagoon is planned for development (see Figure 42 and Figure 43). Figure 50 shows TE 3 marked with orange flagging tape prior to excavation. TE 3 measured approximately 5 m long and 1 m wide. TE 3 was excavated to a depth of up to 180 cmbs through two layers of natural Waiaha series sediment (Strata I and II) and terminated at basalt bedrock (Figure 51, Figure 52, and Table 4). No cultural materials were observed within TE 3.

#### **4.2.4 Test Excavation 4 (TE 4)**

Test Excavation 4 (TE 4) was located along the eastern boundary of the proposed WWTP site portion of the project area, where a grove is planned for development (see Figure 42 and Figure 43). Figure 53 shows TE 4 marked with orange flagging tape prior to excavation. TE 4 measured approximately 5 m long and 1 m wide. TE 4 was excavated to a depth of up to 155 cmbs through two layers of natural Waiaha series sediment (Strata I and II) and terminated at basalt bedrock (Figure 54, Figure 55, and Table 5). No cultural materials were observed within the TE 4.

#### **4.2.5 Test Excavation 5 (TE 5)**

Test Excavation 5 (TE 5) was located in the southeastern section of the proposed WWTP site portion of the project area, where a grove is planned for development (see Figure 42 and Figure 43). Figure 56 shows TE 5 marked with orange flagging tape prior to excavation. TE 5 measured approximately 5 m long and 1 m wide. TE 5 was excavated to a depth of up to 162 cmbs through two layers of natural Waiaha series sediment (Strata I and II) and terminated at basalt bedrock (Figure 57, Figure 58, and Table 6). No cultural materials were observed within TE 5.

#### **4.2.6 Test Excavation 6 (TE 6)**

Test Excavation 6 (TE 6) was located along the western boundary of the proposed WWTP site portion of the project area, where a grove is planned for development (see Figure 42 and Figure 43). Figure 59 shows TE 6 marked with orange flagging tape prior to excavation. TE 6 measured approximately 5 m long and 1 m wide. TE 6 was excavated to a depth of up to 160 cmbs through two layers of natural Naalehu series sediment (Strata I and II) and terminated at basalt bedrock (Figure 60, Figure 61, and Table 7). No cultural materials were observed within TE 6.





Figure 47. Photo of TE 2 marked out with flagging tape prior to excavation; view to southeast



Figure 48. Photo of TE 2 southwest sidewall; view to northeast

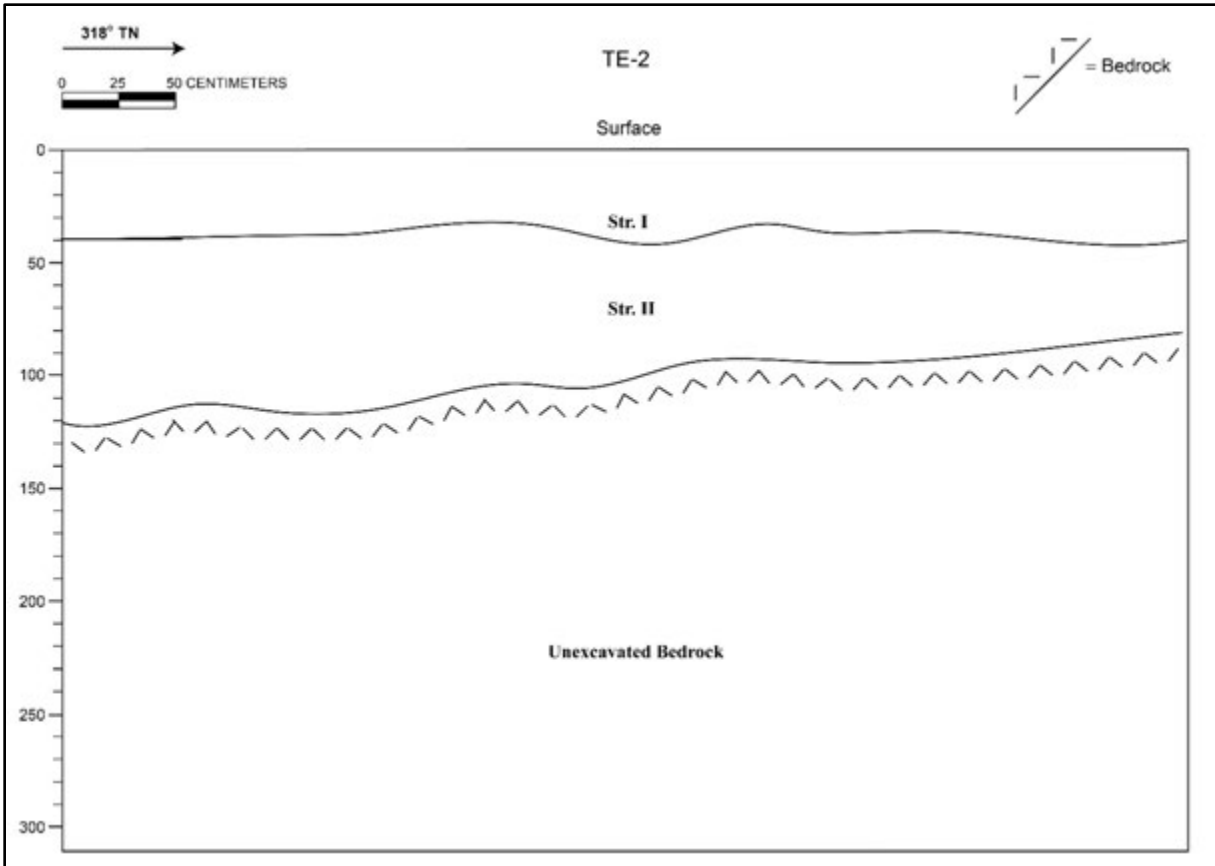


Figure 49. Stratigraphic profile of TE 2 southwest sidewall

Table 3. TE 2 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–45	A horizon; 7.5YR 2.5/3, very dark brown; silty loam, weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; diffuse, smooth lower boundary; roots common; no cultural material present; natural Waiaha series sediment
II	45–120	B horizon; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few roots; no cultural material present; natural Waiaha series sediment

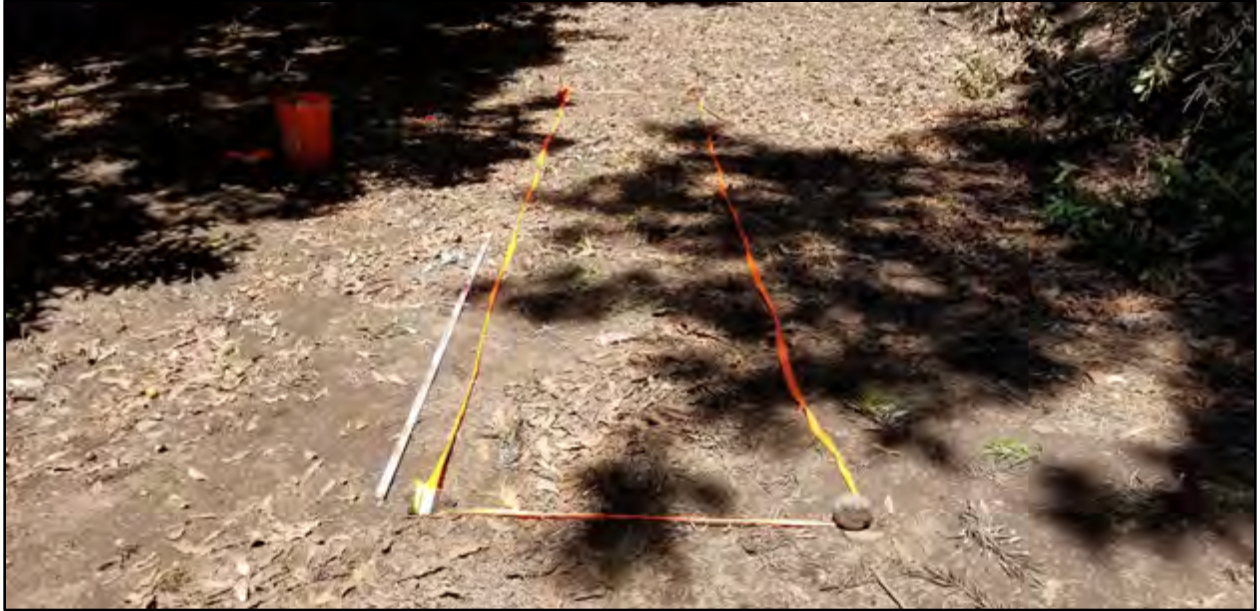


Figure 50. Photo of TE 3 marked out with flagging tape prior to excavation; view to southeast



Figure 51. Photo of TE 3 west sidewall; view to northeast

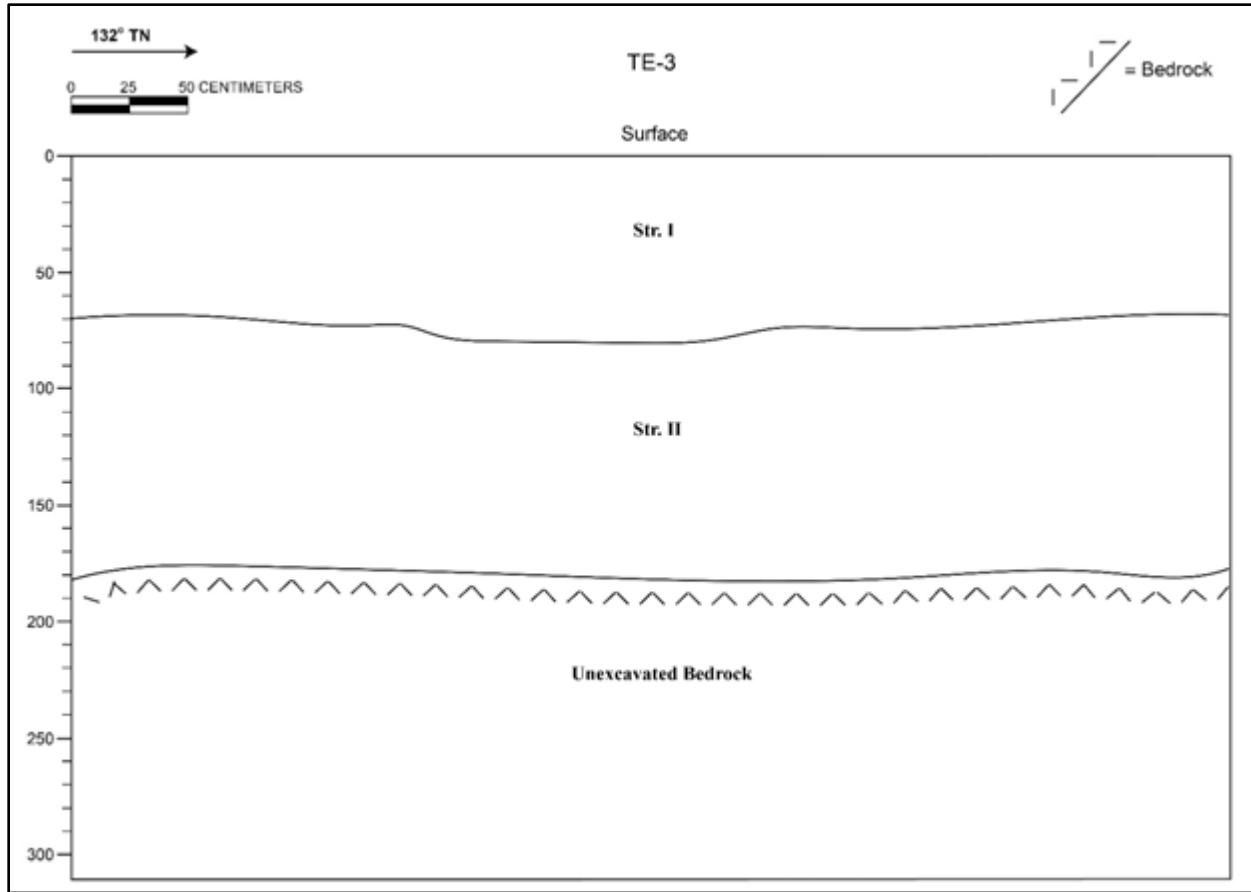


Figure 52. Stratigraphic profile of TE 3 northeast sidewall

Table 4. TE 3 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–82	A horizon; 7.5YR 2.5/3, very dark brown; silty loam; weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; diffuse, smooth lower boundary; roots common; no cultural material present; natural Waiaha series sediment
II	82–180	B horizon, Natural; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few roots; no cultural material present; natural Waiaha series sediment

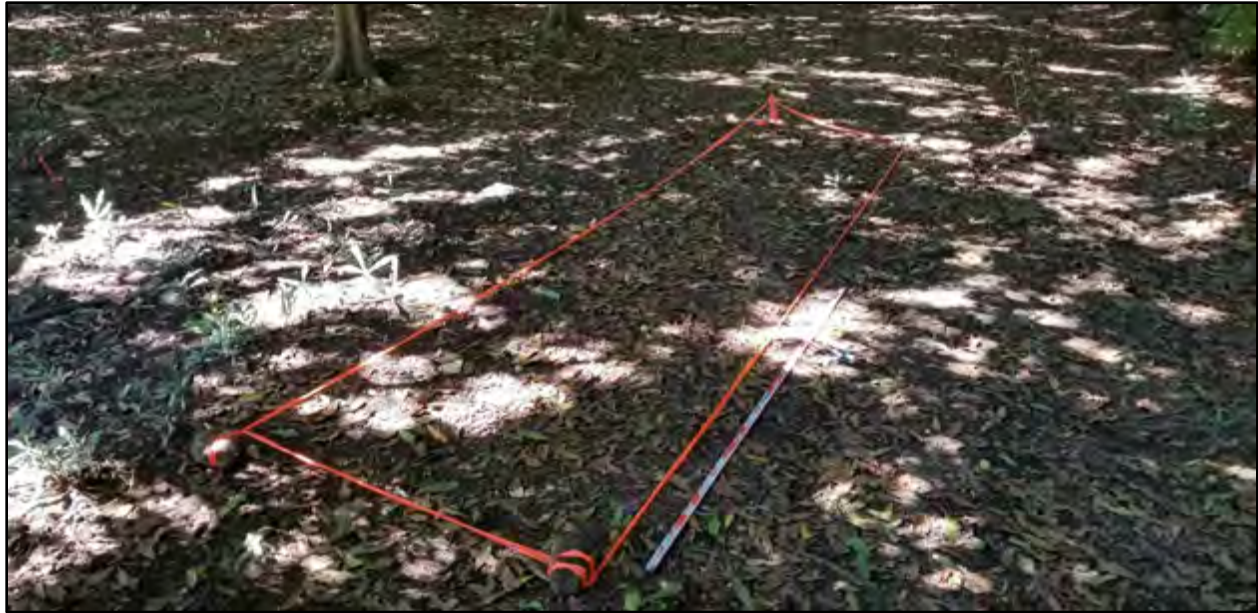


Figure 53. Photo of TE 4 marked out with flagging tape prior to excavation; view to south



Figure 54. Photo of TE 4 northwest sidewall; view to northwest

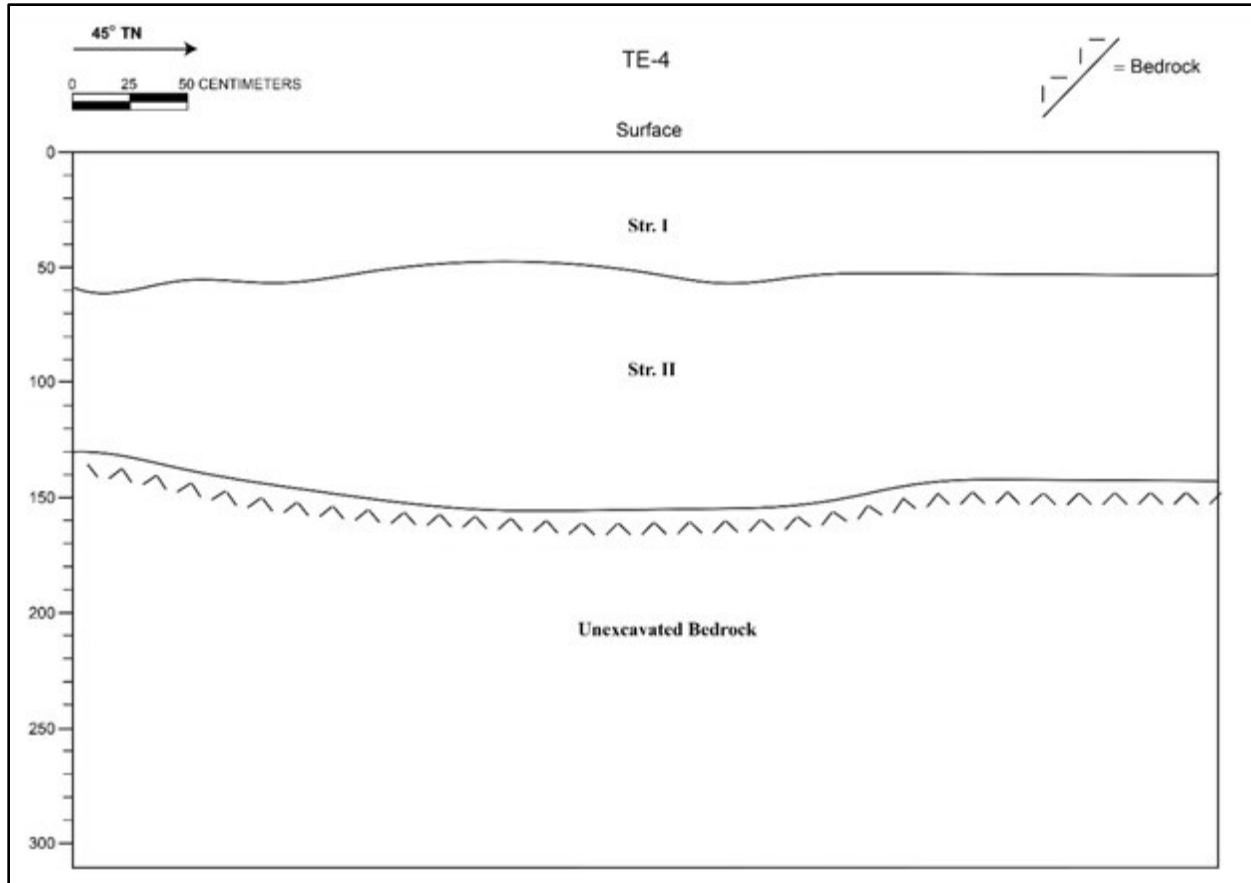


Figure 55. Stratigraphic profile of TE 4 northwest sidewall

Table 5. TE 4 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–60	A horizon; 7.5YR 2.5/3, very dark brown; weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; clear, smooth lower boundary; roots common; no cultural material present; natural Waiaha series sediment
II	60–155	B horizon; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, wavy lower boundary, terminated at bedrock; few roots; no cultural material present; natural Waiaha series sediment



Figure 56. Photo of TE 5 marked out with flagging tape prior to excavation; view to southwest



Figure 57. Photo of TE 5 southwest sidewall; view to south

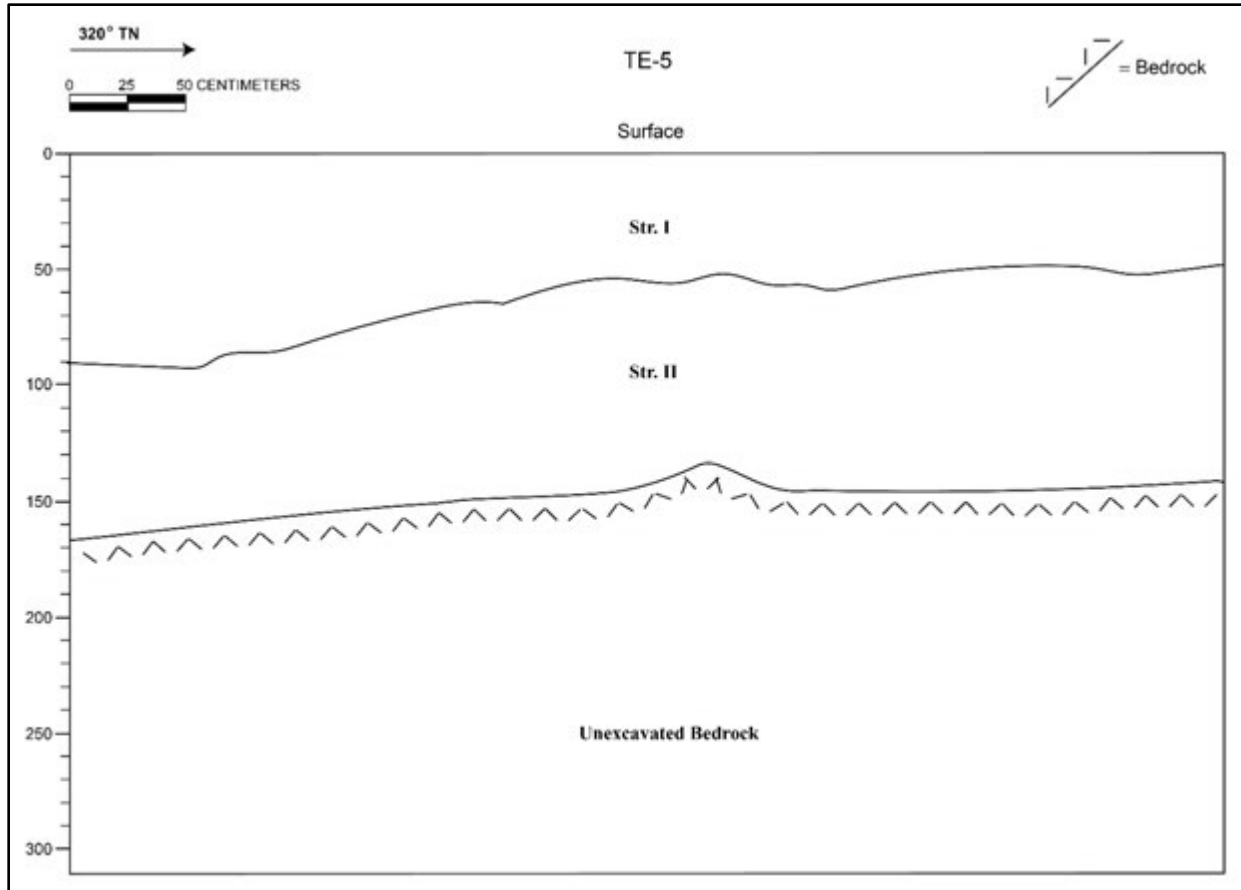


Figure 58. Stratigraphic profile of TE 5 southwest sidewall

Table 6. TE 5 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–95	A horizon; 7.5YR 2.5/3, very dark brown; silty loam, weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; clear, smooth lower boundary; roots common; no cultural material present; natural Waiaha series sediment
II	95–162	B horizon, Natural; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few roots; no cultural material present; natural Waiaha series sediment





Figure 59. Photo of TE 6 marked out with flagging tape prior to excavation; view to southwest



Figure 60. Photo of TE 6 southeast sidewall; view to southeast

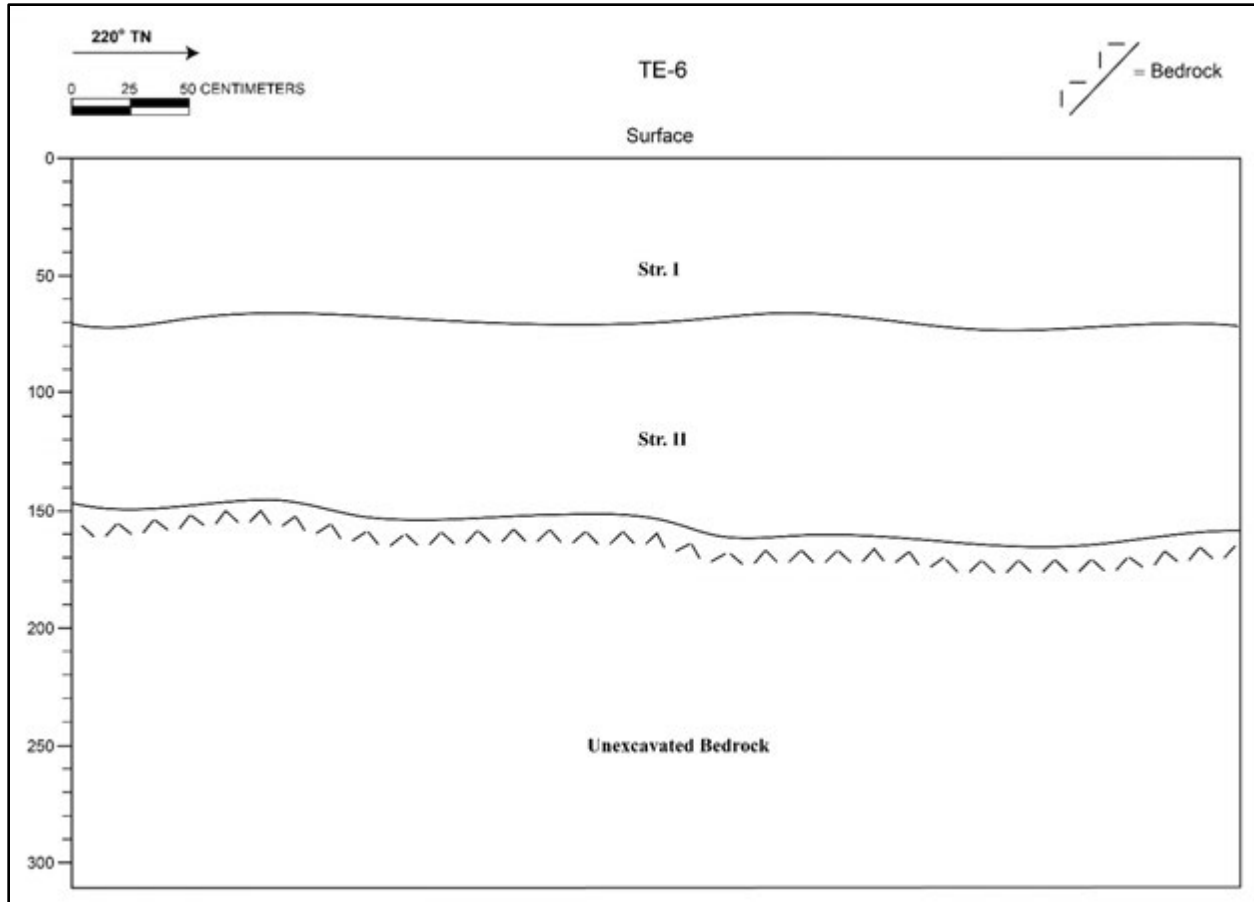


Figure 61. Stratigraphic profile of TE 6 southeast sidewall

Table 7. TE 6 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–70	A horizon; 7.5YR 2.5/3, very dark brown; weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; clear, smooth lower boundary; roots common; no cultural material present; natural Naalehu series sediment
II	70–160	B horizon, Natural; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few roots; no cultural material present; natural Naalehu series sediment

#### 4.2.7 Test Excavation 7 (TE 7)

Test Excavation 7 (TE 7) was located in the western corner of the proposed WWTP site portion of the project area, where a grove is planned for development (see Figure 42 and Figure 43). Figure 62 shows TE 7 marked with orange flagging tape prior to excavation. TE 7 measured approximately 5 m long and 1 m wide. TE 7 was excavated to a depth of up to 175 cmbs through two layers of natural Naalehu series sediment (Strata I and II) and terminated at basalt bedrock (Figure 63, Figure 64, and Table 8). No cultural materials were observed within TE 7.



Figure 62. Photo of TE 7 marked out with flagging tape prior to excavation; view to southwest



Figure 63. Photo of TE 7 south sidewall; view to southeast

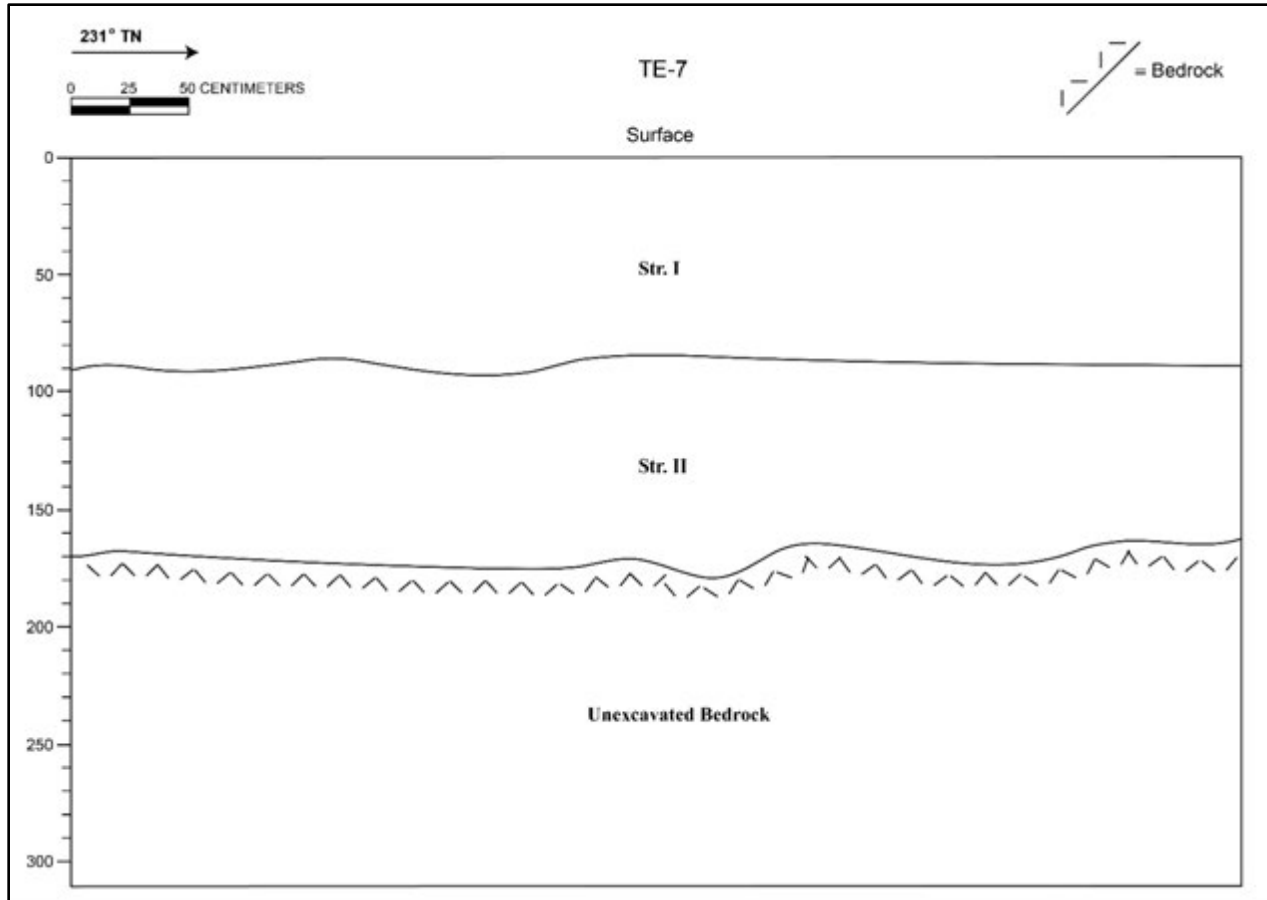


Figure 64. Stratigraphic profile of TE 7 southeast sidewall

Table 8. TE 7 stratigraphic description

Stratum	Depth (cmbs)	Description
I	0–90	A horizon; 7.5YR 2.5/3, very dark brown; weak, fine, granular structure; dry, loose, weak cementation consistence; slightly plastic; terrigenous sediment origin; clear, smooth lower boundary; roots common; no cultural material present; natural Naalehu series sediment
II	90–175	B horizon; 2.5YR 3/4, dusky red; silty clay loam; moderate, medium, subangular blocky structure; dry, weakly coherent, weak cementation consistence; slightly plastic; terrigenous sediment origin; abrupt, wavy lower boundary, terminated at bedrock; few roots; no cultural material present; natural Naalehu series sediment

## Section 5 Historic Property Descriptions

Two historic properties (historic-era road alignments) were identified within the project area during this AIS. They are summarized in Table 9 and their distributions are depicted on Figure 21.

Table 9. Sites identified within the current project area

SIHP # (50-10-69)	Formal Type	Function
-31088	Road alignment (Volcano Road)	Transportation
-31089	Road alignment (Wood Valley Road/Coastal Road)	Transportation

### 5.1 SIHP # 50-10-69-31088

<b>FORMAL TYPE:</b>	Road (Wood Valley Road/Coastal Road)
<b>FUNCTION:</b>	Transportation
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Late 1800s-1920s
<b>TAX MAP KEY:</b>	[3] 9-6-005:999 (county right-of-way)
<b>LAND JURISDICTION:</b>	County of Hawai'i
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # 50-10-69-31088 consists of a 1.16-km (0.72-mile) section of the historic Wood Valley Road/Coastal Road alignment located within the current project area (see Figure 21). The section of this alignment within the project area follows the present Maile Street and Pikake Street alignments located between the Lower Moaula Road fork and Pakalana Street on the west and northern edges of Pāhala Town, respectively (see Figure 4). Construction of the modern Maile Street and Pikake Street roadways, which are approximately 5-10 m (16.5-33 ft) wide, has impacted all the constructed elements of the corresponding portions of the former Wood Valley Road/Coastal Road roadway (see Figure 32 through Figure 35).

Background research, particularly examination of historic maps from the Pāhala and greater Ka'ū areas, indicate a coastal route extending from Nā'ālehu to the Punalu'u vicinity and then east and north through Pāhala Town, where it merged with the original (late 1800s) "Volcano Road" alignment further upslope (see Figure 8, Figure 10, Figure 11, Figure 65, and Figure 66). With the construction of the new Volcano Road (SIHP # -31089) in the 1920s the Wood Valley Road/Coastal Road alignment became obsolete as a primary route (see Section 5.2), and the central portion of the stretch between Pāhala and Nā'ālehu was abandoned after the development of SIHP # -31089 (see Figure 65). Above Pāhala Town the route is still called Wood Valley Road, but it is used by residents of Wood Valley located approximately 5 miles to the northeast and not as a primary route to Kīlauea.

SIHP -31088 (Wood Valley Road/Coastal Road) is a primary transportation route that linked Kīlauea with Nā'ālehu from the late 1800s–1920s. Pursuant to HAR §13-275-6, SIHP # -31088 is assessed as significant under Criterion d for the information it has yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries.

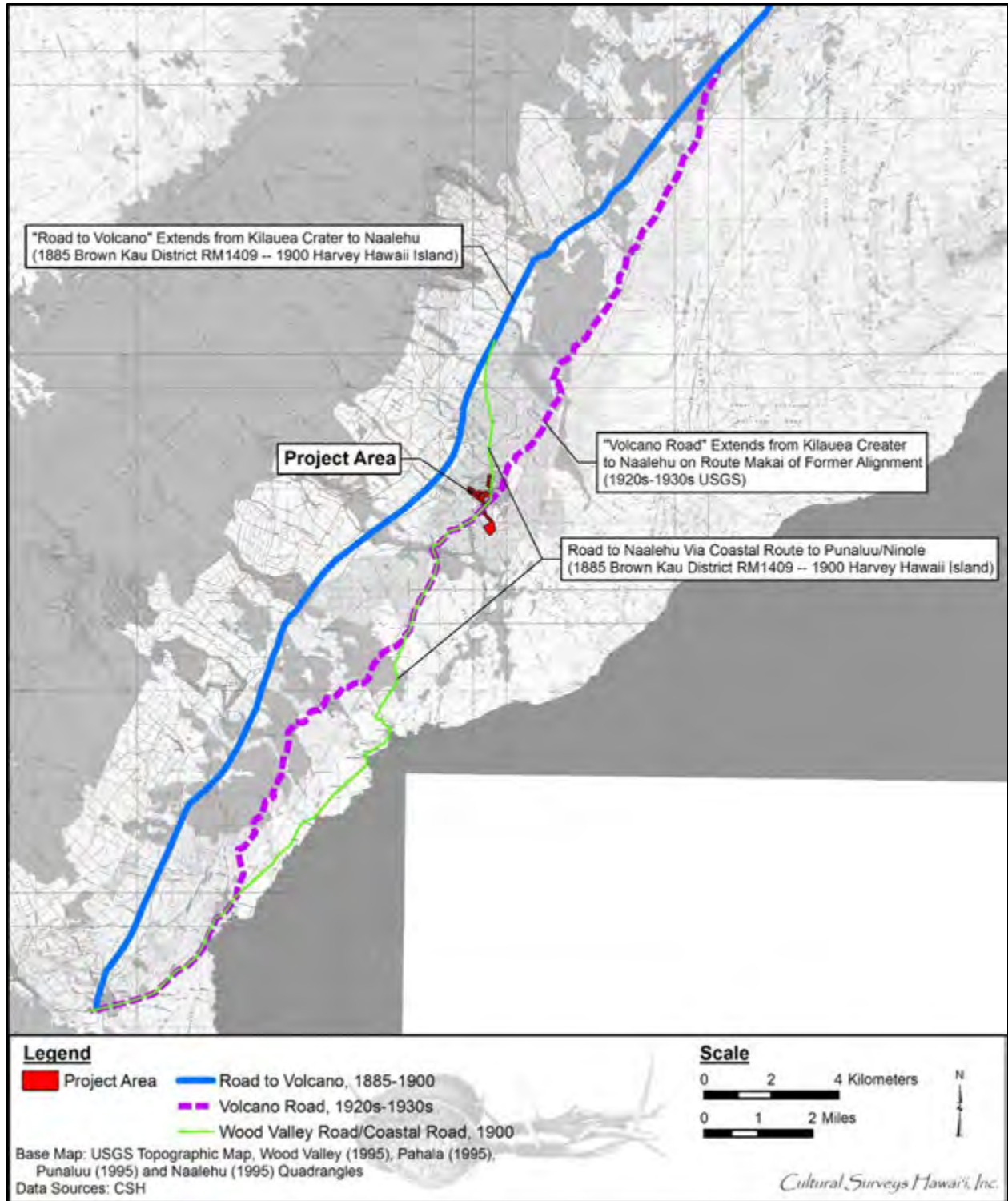


Figure 65. Portions of the 1995 Wood Valley, Pahala, Punaluu, and Naalehu USGS 7.5-minute topographic quadrangles showing the location of the project area in relation to historic roadways

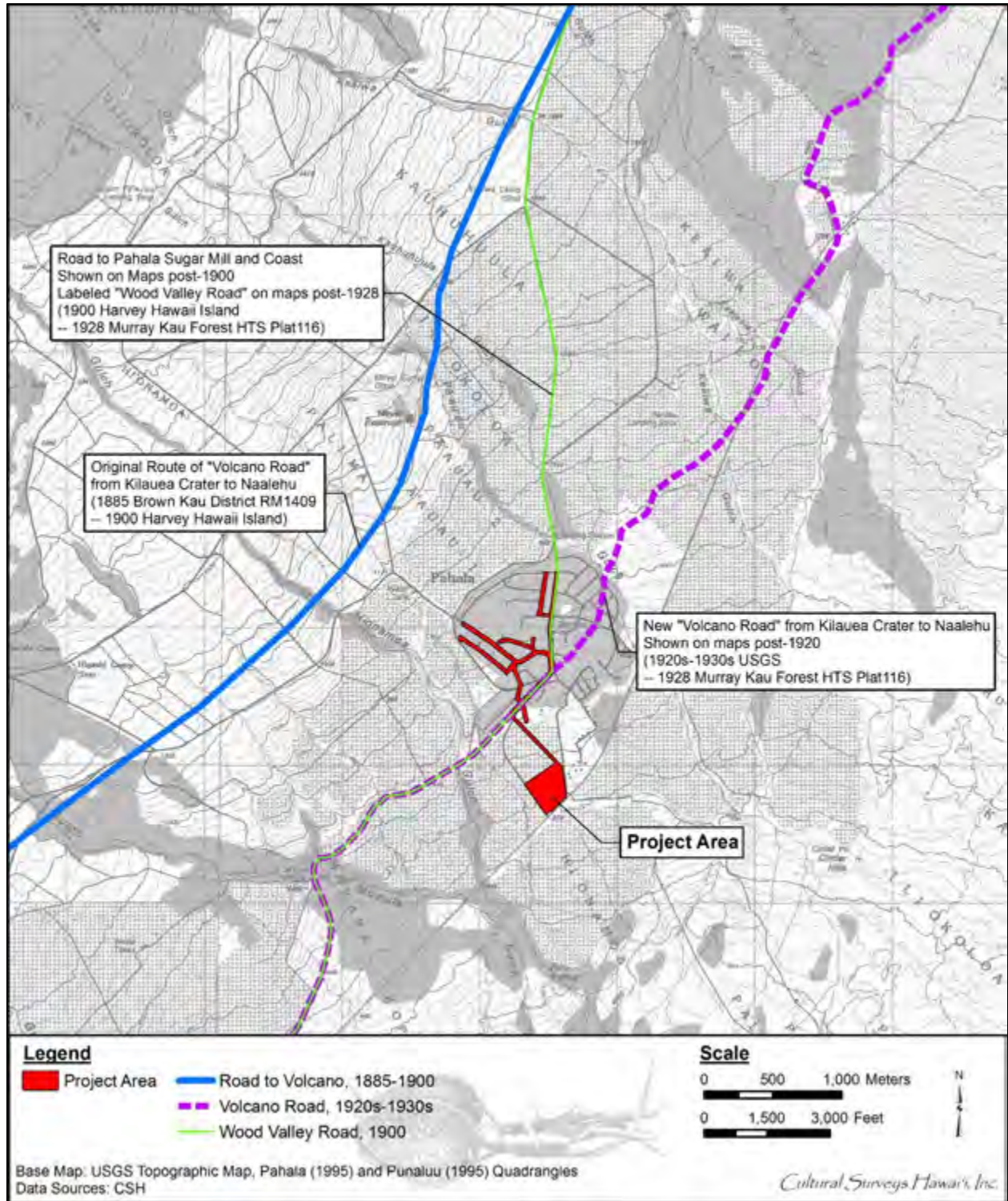


Figure 66. Portions of the 1995 Pahala and Punaluu USGS 7.5-minute topographic quadrangles showing the location of the project area in relation to historic roadways



## 5.2 SIHP # 50-10-69-31089

<b>FORMAL TYPE:</b>	Road alignment (Volcano Road)
<b>FUNCTION:</b>	Transportation
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	1920s-1930s
<b>TAX MAP KEY:</b>	[3] 9-6-005:999 (county right-of-way)
<b>LAND JURISDICTION:</b>	County of Hawai'i
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # 50-10-69-31089 consists of a 0.47-km (0.29-mile) section of the historic Volcano Road alignment located with the current project area (see Figure 21). The section of this alignment within the project area follows the present Maile Street alignment located between the Lower Moaula Road fork and Pikake Street, overlapping along Maile Street with the SIHP # -31088 alignment. Additional portions of these two historic routes also overlapped further west toward Nā'ālehu (see Figure 65). Construction of the modern Maile Street roadway, which is approximately 10 m (33 ft) wide, has impacted all the constructed elements of the corresponding portions of the former Volcano Road roadway (see Figure 33 through Figure 35).

Background research, particularly examination of historic maps from the Pāhala and greater Ka'ū areas, indicate a route extending from Kīlauea Crater to Nā'ālehu called "Volcano Road," replacing the similarly named route located more *mauka* on maps from the late 1800s and early 1900s (see Figure 12, Figure 13, Figure 65, and Figure 66). With the construction of the Māmalahoa Highway (SIHP # 50-10-47-30187) in the 1940s the Volcano Road alignment became obsolete as a primary route; the 1967 USGS map (see Figure 14) shows the portion of the Volcano Road alignment along present Maile Street as part of a "Route 15" looping through Pāhala from the Belt Road, while the current USGS map (see Figure 1) does not label the route at all.

SIHP -31089 (Volcano Road) is a primary 1920s-1930s transportation route that linked Kīlauea with Nā'ālehu.

Pursuant to HAR §13-275-6, SIHP # -31089 is assessed as significant under Criterion d for the information it has yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries.

## Section 6 Significance Assessments and Register Eligibility

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This AIS identified two newly documented historic properties: SIHP #s 50-10-69-31088 and -31089, overlapping historic-era roadways crossing through the project area and APE. Section 6.1 provides significance assessments for these historic properties under HRS §6E, while Section 6.2 provides National Register and Hawai'i Register eligibility determinations.

### 6.1 Significance Assessments under HRS §6E

Under HRS §6E, for a historic property to be significant under HAR §13-275-6 (applicable to government projects), the historic property should possess integrity of location, design, setting, materials, workmanship, feeling, and/or association, and meet one or more of the following significance criteria:

- a Be associated with events that have made an important contribution to the broad patterns of our history;
- b Be associated with the lives of persons important in our past;
- c Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;
- d Have yielded, or is likely to yield, information important for research on prehistory or history; or
- e Have an important value to the native Hawaiian 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 accounts—these associations being important to the group's history and cultural identity.

The segments of SIHP #s -31088 and -31089 within the current project area only maintain integrity of location as all the constructed elements of the original roadways are no longer present today. While the corridors remain active roadways, they no longer function as the primary routes they once were; furthermore, the plantation setting has been altered to one based more on residential and commercial use, and the route names themselves have also changed. Pursuant to HAR §13-275-6, SIHP # s -31088 and -31089 are assessed as significant under Criterion d for the information they have yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries.

### 6.2 National Register and Hawai'i Register Eligibility Determination

Under Section 106, historic property significance is evaluated as eligibility for listing on the National Register pursuant to 36 CFR 60.4. An evaluation of eligibility for listing on the Hawai'i Register pursuant to HAR §13-198-8 is also included in this section. To be considered eligible for listing on the National Register and/or Hawai'i Register, a historic property should possess integrity as described in Section 6.1 above, and meet one or more of the following broad significance criteria:

- A That are associated with events that have made a significant contribution to the broad patterns of our history;
- B That are associated with the lives of persons significant in our past;
- C That embody the distinctive characteristics of a type, period, or method of construction, or that represent that work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
- D That have yielded, or may be likely to yield, information important in prehistory or history.

As discussed in Section 6.1, none of the constructed elements of the subject portions of the original SIHP #s -31088 and -31089 roadways are evident today, and these portions of the historic properties lack integrity apart from their location (determined in consultation with SHPD; see Appendix D). These segments of these historic properties have limited relevance and importance in illustrating the historic context of vehicular transportation systems on Hawai'i island. Therefore, SIHP #s -31088 and -31089 are evaluated as not eligible for inclusion on the National Register or Hawai'i Register.

## Section 7 Summary and Interpretation

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The entire project area was covered in close pedestrian sweeps. Except for a couple small areas of dense vegetation, access and visibility were good during the survey. The project area has been completely altered by past agricultural and residential/town development. Historic remnants of the sugar plantation are present throughout Pāhala Town and surrounding the project area, but these remnants are all located outside the limits of the project area.

No significant artifacts or cultural deposits were observed on the ground surface within the proposed WWTP site portion of the project area; this area experiences ongoing disturbance by storm water runoff and macadamia harvesting operations. No lava tube openings were encountered within the project area.

A program of subsurface testing was conducted within the proposed WWTP site and consisted of mechanical excavation of seven test trenches. The subsurface testing generally revealed two distinct natural stratigraphic layers atop decomposing bedrock; these sediments are consistent with known sediment types in the area and with past and present agricultural land use. In one trench (TE 1) the two natural sediment layers are interposed by a layer of culturally sterile ash deposit, likely associated with activity at former sugar plantation. No cultural deposits or lava tubes were encountered during the testing.

Two historic properties were newly documented within the project area based on a review of historic maps. These include SIHP #s -31088 and -31089, overlapping historic-era road corridors which functioned as primary transportation routes throughout the greater Pāhala/eastern Ka'ū area. None of the constructed elements of the subject portions of the original SIHP #s -31088 or -31089 roadways are evident today, and these portions of the historic properties lack integrity apart from their location. While the project would involve ground disturbance within the existing corresponding road corridors (Maile Street and Pikake Street), it would not create new impacts to the historic corridors nor change their present characteristics.

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## Section 8 Project Effect and Mitigation Recommendations

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### 8.1 Project Effect

Following consultation among EPA, DOH, DEM, and SHPD regarding the project effect for the segments of the Wood Valley/Coastal Road (SIHP # 50-10-69-31088) and Volcano Road (SIHP # 50-10-69-31089) within the project area under HRS §6E-8, per HAR § 13-275-7(a)(1) the County of Hawai'i DEM's project effect determination is "no historic properties affected." In accordance with federal regulations (36 CFR 800.5), the AIS results support a determination of "no historic properties affected."

### 8.2 Mitigation Recommendations

No mitigation commitments are recommended for the portions of SIHP #s 50-10-69-31088 or -31089 within the project area. The portions of these historic properties within the project area only maintain integrity of location as all the constructed elements of the original Wood Valley/Coastal road and Volcano road are no longer evident today.

While this project will have no effect on historic properties, archaeological monitoring during construction for identification and/or cautionary measures is proposed. This is based on the location of the project being within the "Pahala Historic District" (SIHP # 50-10-69-07362), as well as the presence near the project area of three historic properties as follows:

- a lava tube system (SIHP # 50-10-69-27570) with some cultural modifications beneath Pahala town;
- Ka'ū High and Pāhala Elementary School (SIHP # 50-10-69-07522), a National Register-eligible historic property; and
- the Hawai'i Belt Road, (SIHP # 50-10-47-30187), a National Register-eligible historic property south of the project area.

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# Appendix A APE Land Jurisdiction

TMK	Owner	TaxAcres
396002016	PMK CAPITAL PARTNERS LLC	86.719
396002018	KAMEHAMEHA SCHOOLS	42.5
396002024	COUNTY OF HAWAII	0.41
396005036	EDMUND C. OLSON #2 TRUST	25.35
396005044	EDMUND C. OLSON #2 TRUST	0.4937
396014001	MCBEATH, BARBARA ANN	0.1714
396014002	BECKER, PHILIP ALEXANDER TRST /etal	0.1731
396014003	FUKUNAGA, FAMILY TR	0.1781
396014004	POLIDO, SANDRA A	0.1798
396014005	BRANCH, YOUNG ELENA	0.1764
396014006	BRANCH, YOUNG ELENA	0.1774
396014007	PANGLAO, MALIA L /etal	0.1741
396014008	NURIAL-DACALIO, DEISHA-LYN KAWEHILANI /etal	0.1798
396014009	LEDERGERBER, ALBERT /etal	0.1791
396014010	KALIJAWA, PATRICK K-DEC'D	0.1798
396014011	ANDRADE, CLEMENT /etal	0.1791
396014012	WROBLEWSKI, STEVEN W /etal	0.1814
396014013	STONE, ELIZABETH /etal	0.2503
396014014	LORENZO, FRANK J SR /etal	0.2154
396014017	ORCINO, LILYBETH AURELIO /etal	0.3093
396014018	JARA, JUDY S /etal	0.1608
396014019	LONGAKIT FAMILY TRST	0.1581
396014020	LORENZO, STANLEY R JR /etal	0.1591
396014021	RAPP, MARK STEVEN /etal	0.165
396014022	OLIVEIRA, LILLIAN K ESTATE /etal	0.1654
396014023	SILVA, GEORGE A JR /etal	0.1652
396014024	ASUNCION, SIXTO P /etal	0.1626
396014025	FUKUNAGA, SABIURO /etal	0.1673
396014026	GALIZA, ALFRED L SRIADELA TR	0.1646
396014027	VILLA, JERRY R /etal	0.1644
396014028	MITSUBAGI, GREG HIDEKI SEBASTIAN /etal	0.1675
396014029	ITO, NEWTON SHIGERU/CECILIA MAE TTEES	0.1684
396014030	HAUGEN, IRIS N P /etal	0.1641
396014031	OKAMURA, TOSHIO /etal	0.1626
396014032	CLH, TRST	0.1615
396014033	BECKER, PHILIP A /etal	0.1676
396014034	YOKOTA, KENNETH K /etal	0.1581
396014035	EUSTATHIADES, ZOE ALEXANDRA	0.1627
396014036	KUNIHIRO, TAKESHI /etal	0.1674
396014037	GALIMBA, KELLY KEOKI TR	0.1674
396014038	ANDRES, DENNIS M	0.1656
396014039	ASISTIN, ALFREDO /etal	0.1658
396014040	KANESHIRO, HAROLD K TR /etal	0.1666
396014041	JUDALENA, KAZUTO R	0.1681
396014042	JOHNSON, MARIA BERNARDETT FG	0.1674
396014043	PONCE, RAMONA	0.1674
396014044	GALAPIR, WESLEY	0.168
396014045	SANDERS, KANDRA	0.2479
396014046	KATCHMAR, JOHN M TR	0.2435
396014047	RAMOS, DOMINGO C JR /etal	0.293
396014048	ASUNCION, EMITERIO /etal	0.2861
396014049	TAKAKI, RODNEY H	0.3014
396014050	KEKOA, JEFFREY /etal	0.3315
396014051	KAWACHI, MICHAEL H	0.3315
396014052	SUMIDA, TSURUO TR	0.3073
396014053	MUNNERLYN, MICHAEL /etal	0.3315
396014054	NAGASAKO, LEROY KENJI /etal	0.3315
396014055	MITSUBAGI, EDWIN H /etal	0.3315
396014056	ANDRADE, FAMILY TR	0.3014
396014057	RAMOS, FERDINAND CAPIRAL /etal	0.2861
396015001	KAWAAUHAU, STEPHANIE M /etal	0.2438

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2

396015006	UEDA,HAJIME TRST /etal	0.3464
396015007	MIZUNO,STANLEY KAZUO TR	0.1662
396015008	YAMAGUCHI,SALLY C TRUST	0.5667
396015009	CAMBA,GLORIA /etal	0.6415
396015016	MANANTAN,RUBY N	0.2271
396015017	HIGASHI,CHUCK /etal	0.2939
396015018	HAWAII METHODIST UNION	0.262
396015019	DACALIO,MILTON /etal	0.2006
396015020	TAMONDONG,GARY /etal	0.3253
396015021	TAMONDONG,SHANDON L /etal	0.3544
396015022	YOSHIMURA,HISAKO I /etal	0.2879
396015023	KALEOHANO,ARTHUR H /etal	0.3247
396015024	NISHIMURA,NED NOBUO/GAIL TOYOKO TTEES	0.2443
396015025	GALIMBA,KELLY KEOKI /etal	0.3829
396015026	YOKOMIZO,FAMILY TRST /etal	0.3485
396015027	DACALIO,MORGAN	0.2939
396015028	NABOA,ROY/LUCINDA R TR	0.282
396015033	HAWAII METHODIST UNION	1.332
396016036	OLDMEN,MICHAEL J /etal	0.4
396016039	BARAN,EVELYN BARBARA	0.3017
396016040	NEAL,JULIA A /etal	0.6606
396016041	DAVIS-NATIVIDAD,BRYAN RUDY /etal	0.6259
396016042	PROVOST,AKIKO	0.6402
396016043	DACALIO,DON FRANCISCO /etal	0.4293
396016044	AH SAN,JOHN L	0.4253
396016045	NEAL,JULIA A /etal	0.3598
396016046	CAMBA,GLORIA	0.2523
396020001	OLSON,EDMUND C TRUST NO 2	0.1907
396020002	ORTEGA,MICHELLE M	0.184
396020003	RYDER,FRANK III /etal	0.1856
396020004	GANDALIRA,PEDRO /etal	0.1801
396020005	ROSALES,DAWN L C /etal	0.1787
396020006	EVANGELISTA,RODRIGO R /etal	0.1789
396020007	SOUZA,DAVID JR TR /etal	0.1768
396020008	CABATINGAN,ABDON /etal	0.1719
396020009	FUERTE,FLORENDO /etal	0.1733
396020010	REQUELMAN,EDWARD/C TR	0.1699
396020011	ADERINTO,FELIPE C /etal	0.1661
396020012	PORTILLO,WIDO CHALITO MARTINEZ	0.1677
396020013	IVERSON,LESTER MATT	0.1633
396020014	GABINI,SONNY A /etal	0.203
396020015	LEE,BARBARA A	0.2236
396020016	AGLIA,JOSEPH P /etal	0.2478
396020017	NAVARRO-VIERRA,CRISTEN DOLLY	0.2208
396020018	BECKER,PHILIP A /etal	0.2215
396020019	KAMAKURA,CLARITA /etal	0.1549
396020020	VILLA,TEOFILO	0.1495
396020021	LORENZO-OLEYTE,LENORA M /etal	0.1609
396020022	SANTIAGO,DENNIS E	0.1499
396020023	CABUDOL,APOLINARIO /etal	0.166
396020024	ANDRADE,EDWARD /etal	0.1563
396020025	DELOS SANTOS,MARIANO V /etal	0.1592
396020026	PENERA,FREDDIE L /etal	0.2018
396020027	LOUIS,ALBERT G /etal	0.2044
396020028	YAMAKI,JAMES M	0.2079

HIONAMOA 2 APE\_TMK\_Parcels

# Appendix B County of Hawai'i Correspondence to SHPD



## WASTEWATER DIVISION

DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT  
108 RAILROAD AVENUE • HILO, HAWAII 96720  
(808) 961-8118 • FAX (808) 961-8644

October 17, 2017

Susan Lebo, Ph.D.  
DLNR—State Historic Preservation Division  
Kākuhihewa Bldg., Suite 555  
601 Kamōkila Boulevard  
Kapolei, Hawai'i 96707  
Phone: (808) 692-8019  
Fax: (808) 692-8020

**Subject: Request for a State Historic Preservation Division determination letter (as per HAR §13-275-3) for a Wastewater Treatment and Disposal System Project in Pāhala, Pā'au'au 1, Ka'ū District, Hawaii Island (TMK: (3) 9-6-002:018)**

Dear Dr. Lebo:

The County of Hawaii Wastewater Division is requesting a State Historic Preservation Division (SHPD) determination letter (as per HAR §13-275-3) for a Wastewater Treatment and Disposal System Project in Pāhala, Pā'au'au 1, Ka'ū District, Hawaii Island (TMK: (3) 9-6-002:018).

The project is to service the Pāhala community and is located on a 42.5 acre property near the southern edge of Pāhala Town presently owned by Kamehameha Schools and under lease to Royal Hawaiian Orchards. Almost the entire parcel is planted in a commercial macadamia nut orchard with a macadamia nut processing plant parking lot in the southeastern corner.

The project will include a Wastewater Treatment Plant (WWTP) on the 42.5 acre property that will connect to a line currently discharging wastewater into two (2) Large Capacity Cesspools (LCC's) which are lava tubes. The project may also include a network of sewerline improvements in Pāhala Town on the southwest and southeast sides of Ka'ū High & Pāhala Elementary School. This project will use the State Revolving Funds in addition to an EPA Grant (EPA Grant XP-96942401-6) which includes federal and state monies, so Section 106 consultation will also be required.

To supply background information to facilitate SHPD project review, we are providing an *Archaeological Field Inspection of a 42.5 Acre Property in the Ahupua'a of Pā'au'au 1, Ka'ū District, Hawai'i Island (TMK: (3) 9-6-002:018) (Cleghorn 2016)*.

The project's point of contact at County of Hawaii Wastewater Division is:

Ms. Dora Beck, P.E.  
Wastewater Division Chief  
County of Hawaii Wastewater Division  
108 Railroad Avenue  
Hilo, Hawaii 96720

*Hawaii County is an Equal Opportunity Provider and Employer.*

Request for a State Historic Preservation Division determination letter Wastewater Treatment and Disposal System Project in Pāhala, Pā'au'au 1, Ka'ū District, Hawaii Island (TMK: (3) 9-6-002:018)

Should you have any questions or comments about this project, please feel free to call me at (808) 961-8513 ([dora.beck@hawaiicounty.gov](mailto:dora.beck@hawaiicounty.gov)) or you may also contact Lyle Hirota, Wastewater Deputy Division Chief at 808-961-8333 ([lyle.hirota@hawaiicounty.gov](mailto:lyle.hirota@hawaiicounty.gov)).

We look forward to an SHPD determination letter (as per HAR §13-275-3) to guide this project moving forward.

Sincerely,



Dora Beck, P.E.  
Wastewater Division Chief

ATTACHMENT

Cc: William A. Kucharski, DEM Director  
Diane Noda, DEM Deputy Director  
Craig Lekven, P.E., Brown and Caldwell  
Earl Matsukawa, Wilson Okamoto Associates

**Harry Kim**  
Mayor

**Wilfred M. Okabe**  
Managing Director



**William A. Kucharski**  
Director

**Diane A. Noda**  
Deputy Director

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

345 Kekūanā'oa Street, Suite 411 Hilo, Hawai'i 96720  
Ph: (808) 961-8083 Fax: (808) 961-8086  
cokdem@co.hawaii.fi.us  
<http://www.hawaii.gov/dem/>

March 22, 2018

Via email: [alan.s.downer@hawaii.gov](mailto:alan.s.downer@hawaii.gov) and U.S. Mail

Alan S. Downer, Ph.D., Administrator  
State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamokila Boulevard, Room 555  
Kapolei, Hawai'i 96707

**Subject: Request for Concurrence of Proposed Pāhala Wastewater  
Treatment Plant and Sewer System Project and the Archaeological  
Inventory Survey Approach for the Project  
Hionamoa Ahupua'a, Ka'ū District, Hawai'i Island  
Tax Map Key: Multiple**

Dear Dr. Downer:

On October 17, 2017, the County of Hawai'i Department of Environmental Management, Wastewater Division, the project proponent, provided a written request to the State Historic Preservation Division (SHPD) for a letter of determination in accordance with Hawai'i Administrative Rules (HAR) 13-275-3 for a proposed Pāhala Wastewater Treatment Plant (WWTP) and Sewer System Project.

Attached with the determination request to SHPD, the County supplied a November 11, 2016, letter report from Pacific Legacy, an archaeological firm, addressed to Dora Beck, P.E., Wastewater Division Chief for the Department of Environmental Management's Wastewater Division, the subject of which is an *Archaeological Field Inspection of a 42.5 Acre Property in the Ahupua'a of Pa'au'au 1, Ka'ū District, Hawai'i Island [TMK: (3) 9-6-002:018]*. The letter reports on the finds of an archaeological field inspection conducted by Pacific Legacy of the proposed Pāhala WWTP and Sewer System Project area.

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Alan S. Downer, Ph.D., Administrator  
 State Historic Preservation Division  
 March 22, 2018  
 Page 2

On February 22, 2018, David Shideler of Cultural Surveys Hawai'i, Inc. (CSH) met with SHPD Archaeology Branch Chief Dr. Susan Lebo to follow up on the County of Hawai'i's determination request. They discussed the proposed Pāhala Wastewater Treatment Plant and Sewer System Project in the Hionamoa Ahupua'a, Ka'u District, Hawai'i Island, which has multiple tax map keys. Attached is the original correspondence from CSH, the contents of which are also described below. The site map showing the proposed layout and location of the proposed test excavation areas is attached to CSH's correspondence.

The reported outcome of the February 22, 2018, discussion between CSH and Dr. Lebo is summarized as follows:

1. Dr. Lebo indicated a desire for an archaeological inventory survey addressing the entire area of proposed ground disturbance, with subsurface testing.
2. Dr. Lebo indicated particular concern for a good faith effort to address possible lava tubes within the area of proposed ground disturbance. Related investigations would include an effort to develop available information on the location of any such lava tubes, further pedestrian work, and subsurface testing.
3. Dr. Lebo indicated a schema of a total of six backhoe assisted excavations (one in Lagoon 1, one in Lagoon 4, and one in each of Basins 1, 2, 3, and 4) which would only need to go as deep as the proposed maximum excavation for the lagoons/ basins. This would probably be all of the indicated subsurface testing required.
4. Dr. Lebo indicated a desire that all areas of project-related ground disturbance that were not addressed in the Pacific Legacy 2016 report be addressed in the AIS. In particular, this would include consideration of the lateral installation areas, predominately located along existing residential subdivision roadways. AIS efforts in these later installation areas probably would not require subsurface testing, but would include documentation and an evaluation of how these streets might relate to a possible historic plantation village or historic property designation.

Backhoe excavations would likely measure 20' long by 2' wide. The depth of excavation at each trench would be determined by whichever of the following is reached first: bedrock; maximum depth of project-related ground disturbance indicated for that location; or a depth of 6 feet, which is the approximate maximum depth of the naturally occurring sediments throughout the project area. Typically, this subsurface testing schema would be:

- Refined in the course of consultation with the SHPD as applicable during the surface survey work;

Alan S. Downer, Ph.D., Administrator  
State Historic Preservation Division  
March 22, 2018  
Page 3

- Refined to address new locations encountered in the surface survey that indicate a probability of subsurface cultural deposits; and
- Refined to avoid trees, tree roots, and other conflicting constraints.

We kindly request concurrence of this AIS strategy. Please feel free to contact me with any questions or concerns.

Sincerely,



William A. Kucharski  
Director

WK:mef

Attachment: CSH 3/15/18 letter

cc: Dr. Susan Lebo, SHPD (with attachment)  
Sean Naleimaile, SHPD (with attachment)  
Dora Beck, P.E., Wastewater Division (with attachment)  
Craig Lekven, Brown and Caldwell (w/o attachment)



**State Historic Preservation Division  
HRS 6E Submittal Form**

Per §6E, Hawai'i Revised Statutes, if the Project requires review by the State Historic Preservation Division (SHPD), please review and fill out this form and submit all requested information to SHPD. Please submit this form and project documentation **electronically** to:

dlnr.intake.shpd@hawaii.gov

If you are unable to submit electronically, please contact SHPD at (808) 692-8015. Mahalo.

The submission date of this form is: **April 25, 2018**

**1. APPLICANT** (select one)

Property Owner       Government Agency

**2. AGENCY** (select one)

Planning Department     Department of Public Works     Other (specify): County of Hawai'i,

Type of Permit Applied For: Concurrence with AIS approach

**3. APPLICANT CONTACT**

3.1) Name: William A. Kucharski    3.2) Title: Director

3.3) Street Address: 345 Kekuanao'a Street, Suite 41

3.4) County: Hawai'i                      3.5) State: HI                              3.6) Zip Code: 96720

3.7) Phone: (808) 961-8083              3.8) Email: cohdem@co.hawaii.hi.us

**4. PROJECT DATA**

4.1) Permit Number (if applicable): Not applicable

4.2) TMK [e.g. (3) 1-2-003:004]: (3) 9-6-002:018

4.3) Street Address: Adjacent to Maile Street, Pahala

4.4) County: Hawai'i                      4.5) State: HI                              4.6) Zip Code: 96777

4.7) Total Property Acreage: 42.5 acres

4.8) Project Area (acreage, square feet): 14 acres

4.9) List any previous SHPD correspondence (LOG Number & DOC Number, if applicable):

LOG NO. 2018.00722

DOC NO.

**5. PROJECT INFORMATION**

5.1) Does the Project involve a Historic Property? A Historic Property is any building, structure, object,

district, area, or site, including heiau and underwater site, **which is over 50 years old** (HRS §6E-2).

Yes  No

5.2) The date(s) of construction for the historic property (building, structure, object, district, area, or site, including heiau and underwater site) is not applicable

5.3) Is the Property listed on the Hawai'i and or National Register of Historic Places? To check:  
<http://dlnr.hawaii.gov/shpd/>

Yes  No

5.4) Detailed Project Description and Scope of Work:

Wastewater Treatment and Disposal System Project in Pahala, Pa'au'au 1, Ka'u District, Hawaii Island (TMK: (3) 9-6-002:018). The project is to service the Pahala community and is located on a 42.5 acre property near the southern edge of Pahala Town presently owned by Kamehameha Schools and under

5.5) Description of **previous** ground disturbance (e.g. previous grading and grubbing):

Majority of project area is presently macadamia nut orchard and residential neighborhood

5.6) Description of **proposed** ground disturbance (e.g. # of trenches, Length x Width x Depth):

Project will involve construction/installation of wastewater treatment lagoons, land application tree groves, a polishing constructed wetland, and associated pipelines and structures.

5.7) The Agency shall ensure whether historic properties are present in the project area, and, if so, it shall ensure that these properties are properly identified and inventoried. Identify all known historic properties:

No archaeological inventory survey has been completed for the updated Pahala WWTP project

5.8) Once a historic property is identified, then an assessment of significance shall occur.

Integrity (check all that apply):

Location  Design  Setting  Materials  Workmanship  Feeling  Association

Criteria (check all that apply):

- a – associated with events that have made an important contribution to the broad patterns of our history
- b – associated with the lives of persons important in our past
- c – embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value
- d – have yielded, or is likely to yield, information important for research on prehistory or history
- e – have an important value to the Native Hawaiian 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 accounts - - these associations being important to the group's history and cultural identity

5.9) The effects or impacts of a project on significant historic properties shall be determined by the agency.

Effect Determination (select one)

- No Historic Properties Affected  
 Effect, with Agreed Upon Mitigation Commitments (§6E-42, HRS)  
 Effect, with Proposed Mitigation Commitments (§6E-8, HRS)

5.10) This project is (check all that apply, if applicable):

- an activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency;  
 carried out with Federal financial assistance; and/or  
 requiring a Federal permit, license or approval

If any of these boxes are checked, then the Project may also be subject to compliance with Section 106 of the National Historic Preservation Act (NHPA).

#### 6. PROJECT SUBMITTALS

6.1) Please submit a copy of the Tax Map Key (TMK) map

6.2) Please submit a copy of the property map showing the project area and indicate if the project area is smaller than the property area.

6.3) Please submit a permit set of drawings. A permit set is a set of drawings prepared and signed by a licensed architect or engineer and is at least 65% complete.

6.4) Are you submitting a survey?

- Yes  No

Specify Survey:

6.5) Did SHPD request the survey?

- Yes  No

If 'Yes', then please provide the date, SHPD LOG NO, and DOC NO:

Date: LOG NO: DOC NO:

6.6) **SURVEY REVIEW FEES.** Fee for Review of Reports and Plans (§§13-275-4 and 284-4). A filing fee will be charged for all reports and plans submitted to our office for review. Please go to:

<http://dlnr.hawaii.gov/shpd/about/branches/archeology/filing-fee-schedule/>

A check payable to the Hawaii Historic Preservation Special Fund should accompany all reports or plans submitted.

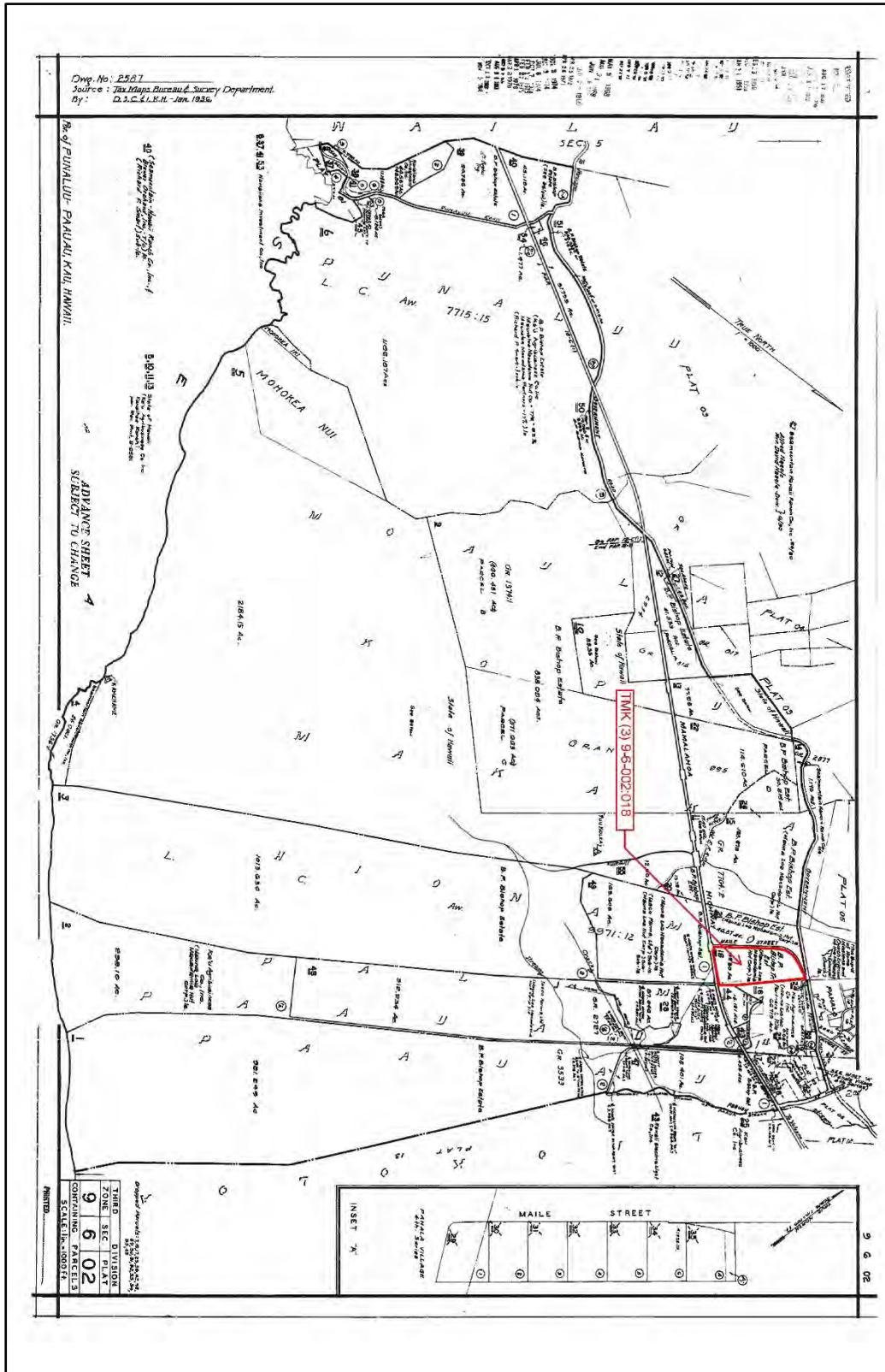
6.7) Please submit color photos/images of the Historic Property (any building, structure, object, district, area, or site, including heiau and underwater site) that will be affected by the Project.

The following are the minimum number and type of color photographs required:

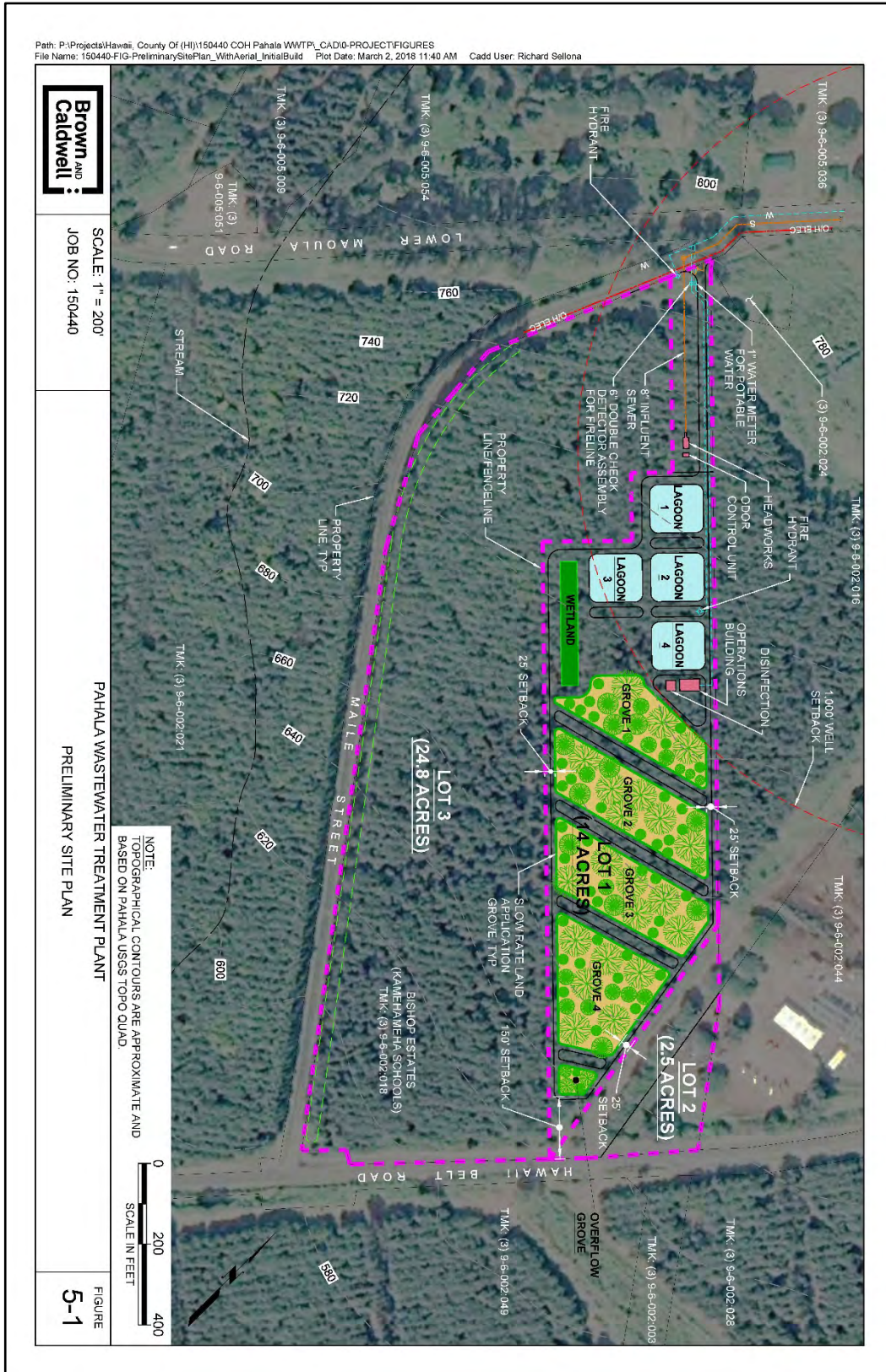
Quantity	Description
1-2	Street view(s) of the resource and surrounding area
1-2	Over view of exterior work area
1	exterior photo of the North elevation (if applicable)
1	exterior photo of the South elevation (if applicable)
1	exterior photo of the East elevation (if applicable)
1	exterior photo of the West elevation (if applicable)
1-2	interior photos(s) of areas affected (if applicable)

CHECKLIST

- SHPD FORM 6E** (this form)
- PROJECT SUBMITTALS** (any requested documentation for items 6.1 - 6.7 of this form)
- FILING FEE FORM** (if applicable)



AISR for the Pāhala WWTP Project, Hionamoa, Pāhima, and Pā'au'au 1 and 2, Ka'ū, Hawai'i  
TMKs: [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County Right-of-Ways



AISR for the Pāhala WWTP Project, Hionamoa, Pālima, and Pā'au'au 1 and 2, Ka'ū, Hawai'i  
 TMKs: [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County Right-of-Ways

## SHPD 6E Form; Item 5.4) Detailed Project description and Scope of Work

## Background

The Pāhala Large Capacity Cesspool Closure is in Pāhala, Pa'au'au 1, Ka'u District, Hawaii Island. The project includes a new collection system and treatment and disposal facility to service the Pāhala community. The collection system is located on County streets. The treatment disposal facility will occupy 14.9 acres and is located on a portion a 42.5 acre property near the southern edge of Pāhala Town presently owned by Kamehameha Schools and under lease to Royal Hawaiian Orchards. Almost the entire parcel is planted in a commercial macadamia nut orchard with a macadamia nut processing plant parking lot in the southeastern corner.

The project will also close two (2) Large Capacity Cesspools (LCC's).

This project will use the State Revolving Funds in addition to an EPA Grant (EPA Grant XP-96942401-6) which includes federal and state monies, so Section 106 consultation will also be required.

There are 2 areas of disturbance related to the project :

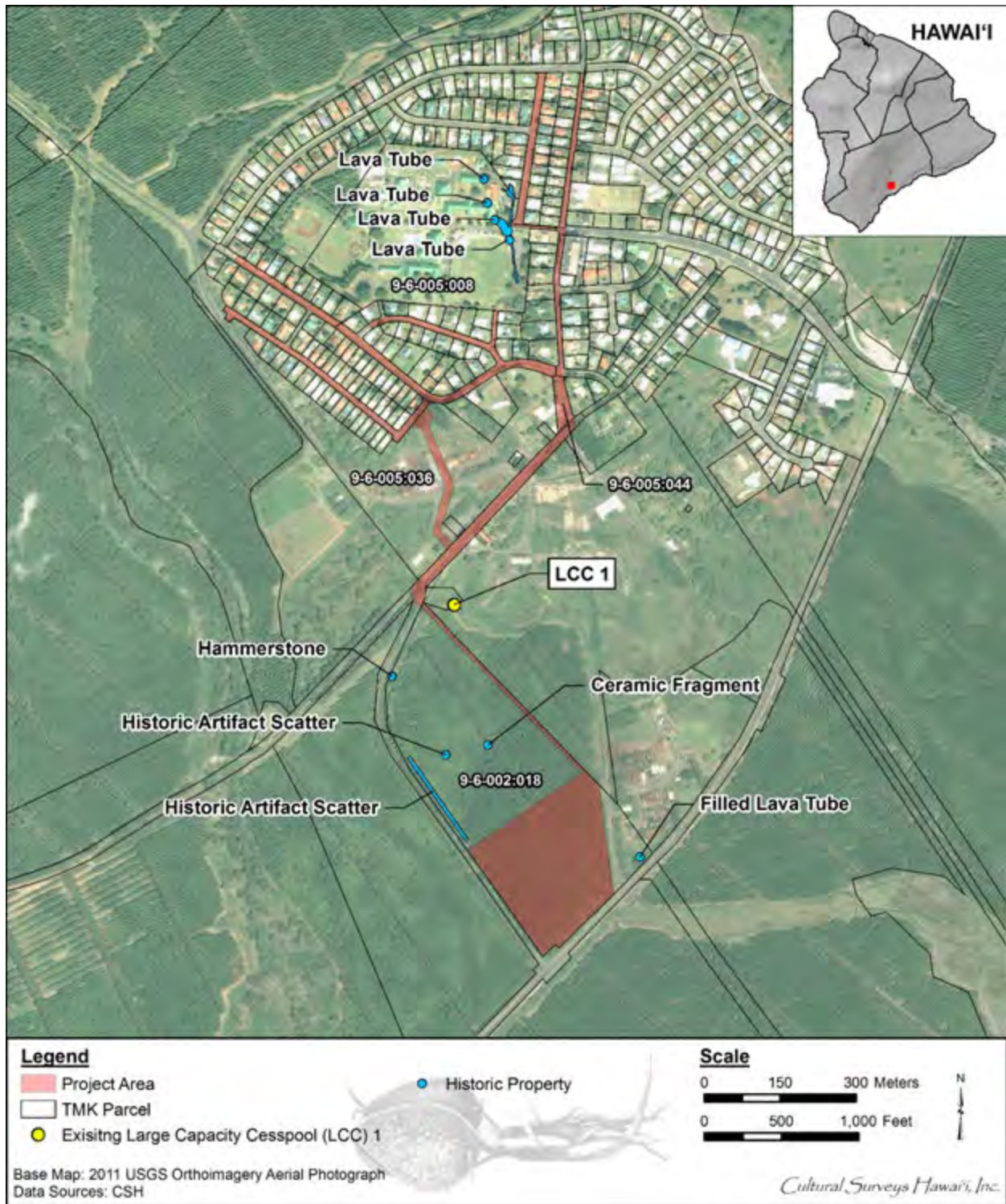
- 1) The new wastewater collection system will be located within public right-of-way (ROWs) in the Pāhala community. The streets within the community have been improved with asphaltic concrete (AC) surfaces with shoulders consisting improved or grass swales. Most of the streets do not have curbs or gutters. The streets have two travel lanes, one lane in each direction, although not all the streets have been stripped. The travel surface appears to be about 22 to 24 feet wide. The streets are under the jurisdiction the County and do not have TMKs. See Figure -

The collection system line will use polyvinyl chloride (PVC) pipe which is corrosion resistant. The County's sewer standards show the trenches for sewer lines would require at least 4 feet of cover from the top of the pipe to grade and 12 inches of cushion material on both sides of the line and 6 inches below the line. This means the typical sewer trenches will be about 3 feet wide and at least 6 feet deep.

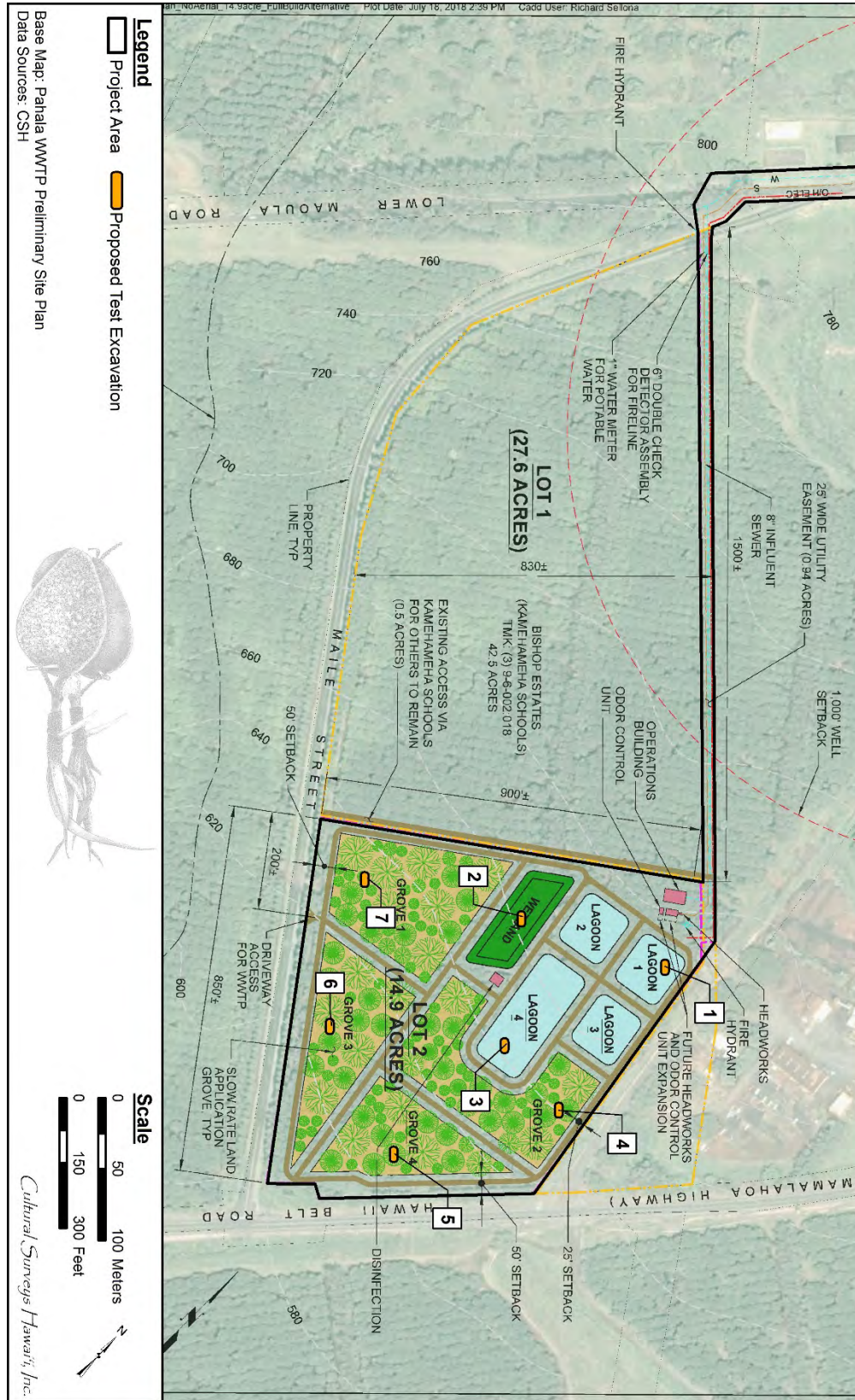
- 2) The treatment and disposal facility project site will occupy approximately 14.9 acres east (makai) of an existing access road to the adjacent parcel in the northwest corner of the Maile Street and Mamalahoa Highway intersection outside of the State of Hawai'i Department of Transportation right-of-way. The project site will occupy a portion within TMK: 9-6-002:018. An approximately 25-foot by 1,500-foot utility easement will be disturbed to construct a trench according to County standards for the influent line to the 14.9-acre site which will also be disturbed to construct treatment and disposal facility.

The 14.9-acre treatment and disposal facility will consist of: an area for headworks and operations building; 4 lagoons to treat the effluent; a wetland area for further treatment and disinfection; 4 planted groves for disposal of the treated effluent. Each of the lagoons will require excavation about 10 feet; the planted groves about 6 feet and the wetland about 4 feet. See Figure —

The collection system and the treatment and disposal facility will be owned and operated by the County Department of Environmental Management and as such will be a public facility.









AISR for the Pāhala WWTP Project, Hionamoa, Pālima, and Pā'au'au 1 and 2, Ka'ū, Hawai'i  
TMKs: [3] 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County Right-of-Ways

# Appendix C SHPD Correspondence

 <p>DAVID Y. IGE GOVERNOR OF HAWAII</p>	 <p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES</p> <p>STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD, STE 555 KAPOLEI, HAWAII 96707</p>	<p>SUZANNE B. CASE CHAIRPERSON BOARD OF LAND AND NATURAL RESOURCES COMMISSION OF WATER RESOURCE MANAGEMENT</p> <p>ROBERT K. MASUDA FIRST DEPUTY</p> <p>JEFFREY T. PEARSON, P.E. DEPUTY DIRECTOR - WATER</p> <p>AQUATIC RESOURCES BOATING AND OCEAN RECREATION BUREAU OF OCEANFRONTS COMMISSION OF WATER RESOURCE MANAGEMENT CONSERVATION AND COASTAL LANDS CONSERVATION AND RESOURCES ENFORCEMENT ENGINEERING FORESTRY AND WILDLIFE HISTORIC PRESERVATION KAWAOLAHU ISLAND RESERVE COMMISSION LAND STATE PARKS</p>
<p>August 20, 2018</p>		
<p>William A. Kucharski, Director County of Hawai'i Department of Environmental Management 345 Kekūānā'ō'a Street Suite 41 Hilo Hawai'i 96720 <a href="mailto:William.Kucharski@hawaiiicounty.gov">William.Kucharski@hawaiiicounty.gov</a></p>		<p>IN REPLY REFER TO: Log No. 2018.00722 Doc. No. 1808JA02 Archaeology</p>
<p>Dear Mr. Kucharski:</p>		
<p><b>SUBJECT: Chapter 6E-8 and National Historic Preservation Act (NHPA) Section 106 Review – Request for Acceptance of the Archaeological Inventory Survey Approach for Proposed Pāhala Wastewater Treatment Plant and Sewer System Project Hionamoa Ahupua'a, Ka'ū District, Hawai'i Island TMK: (3) 9-6-002:018</b></p>		
<p>This letter provides the State Historic Preservation Division's (SHPD's) response to the County of Hawai'i Department of Environmental Management (DEM) office's March 22, 2018, letter concerning the subject titled <i>Request for Concurrence of Proposed Pāhala Wastewater Treatment Plant and Sewer System Project and the Archaeological Inventory Survey Approach for the Project Hionamoa Ahupua'a, Ka'ū District, Hawai'i Island Tax Map Key: (3) 9-6-002:018</i> (William A. Kucharski, March 2018). The SHPD received this request on March 23, 2018 (Log No. 2018.00722) and a follow up letter on April 27, 2018 (Log No. 2018.01021).</p>		
<p>This letter also reviews three additional documents, received electronically by SHPD on August 2, 2018. These documents, which include two aerial photomaps and a text summary, finalize the boundaries for the proposed Pāhala Wastewater Treatment Plant and Sewer System project area, and the locations and plans for seven test trenches to be excavated during the project archaeological inventory survey (AIS). The AIS will be conducted by Cultural Surveys Hawai'i, Inc., (CSH), at the request of the County of Hawai'i.</p>		
<p>The submittal reviewed here follows a February 22, 2018, meeting between David Shideler of CSH and Dr. Susan A. Lebo of SHPD; the meeting was held to define an acceptable strategy for the project AIS and to obtain SHPS's concurrence with the plan. Additional correspondence in SHPD's files includes CSH's March 15, 2018, letter to Brown and Caldwell, with a copy to SHPD, also following up the February 22, 2018, SHPD-CSH consultation regarding the testing approach.</p>		
<p>The proposed project will replace the current Pāhala Large Capacity Cesspool, in a portion of Pāhala in Pa'au'au 1 Ahupua'a. This cesspool is one of two large-capacity cesspools that will close when the proposed project is completed.</p>		
<p>The project will create a new collection system, and a treatment and disposal facility, both designed to serve the Pāhala community. The proposed collection portion of the project area will be located on County roads and streets, where trenches up to 6 feet deep will be excavated to accommodate the sewer system. The total area to be included in the collection system project area needs to be clarified. The County roads and streets, which cross through the central and southwest portions of Pāhala town, do not have TMK parcel numbers. Two wider roads assigned to TMK: (3) 9-6-005 Parcels 044 and 036 on the TMK photomap, connect the town road network with the treatment-and disposal-facility project area, farther south.</p>		

William A. Kucharski  
August 20, 2018  
Page 2

The treatment and disposal facility will occupy 14.9 acres in a portion of a 42.5-acre property south of Pihala town that is currently owned by Kamehameha Schools and leased to Royal Hawaiian Orchards. Most of the parcel is located in a commercial macadamia nut orchard, a macadamia nut processing plant parking lot occupies the southeast corner. The 14.9-acre project area is bounded on the southeast by Hawai'i Belt Road (Mūmalaloa Highway), on the southwest by Maile Street, on the northwest side by orchard, and on the northeast side by a road that is not labeled in the available maps.

SHPD accepts the AIS approach. The seven units will include one in Lagoon 1, one in Lagoon 4, and one each in Basins 1, 2, 3, 4, and 5.

Please send two hard copies clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office; attention SHPD Library.

Please contact Dr. Jane Allen at (808) 692-8027 or by email at [jane.Allen@hawaii.gov](mailto:jane.Allen@hawaii.gov) if you have any questions or if we can be of assistance.

Aloha,  
*Alan Downer*

Alan S. Downer, PhD  
Administrator, State Historic Preservation Division  
Deputy State Historic Preservation Officer

cc: Dora Beck, [Dora.Beck@hawaiicounty.gov](mailto:Dora.Beck@hawaiicounty.gov)  
Craig Lokven, [CLokven@HrwnCalid.com](mailto:CLokven@HrwnCalid.com)  
William Folk, [WFolk@culturalsurveys.com](mailto:WFolk@culturalsurveys.com)

## Appendix D SHPD Meeting Notes

### SHPD Meeting (Dec 6, 2018) Agenda Matters to Discuss with SHPD

**Location: Kapolei**

**Time: Noon**

**Attendees: SHPD – Susan Lebo (SL) and Jane Allen (JA)**

**CSH – DS (12pm), WF (1pm)**

- **HIONAMOA 2 Determining new/larger APE for Pahala Wastewater Project**  
SL: every lot will need to be part of the APE do not concern yourself with each lot.

WF: anything with a lateral or to receive a lateral will be in the APE?

SL/JA. LCC will be included in the APE,

WF: The easement for a section of the new sewer line, and buildings related to the old mill operations that are to receive new laterals are all within one large parcel. Will we need to include the entire parcel in the APE?

SL/JA: you will have a portion of the TMK parcel in the APE that includes the buildings; the building in your APE will be historic building. Those buildings will need to be reviewed by Architecture branch which may ask for an LRS for them, but the underground installation of WW line will not affect the building, you will still end up with no adverse effect/no historic properties effect – contact architecture they may request a “mini” LRS, We need to search to determine if the plantation may have a SHIP #.

WF: The Pahala historic district map showing the SHIP # 7362 (Pahala Historic District) for the 1970's state wide inventory the SHPD/State Parks did in the 70's.

SL: there is a SHIP # 7362. Did you contact Sean? Or here? in the district it depends if the archaeology is a component of the district. Email SW and Sean an email about historic district of Pahala. Statewide inventory of historical districts.

WF: Yes. We will check again with Sean and email Dr. Lebo

WF: So building would be contributing elements of a new SHIP or the 1970's historic district number if someone wished to nominate these for the registers.

SL: 2-3 building associated with plantation; are they significant or on the State or Historic register? This should be addressed to architecture branch.

WF: do we need to address the four roads since they are documented on historic maps.

SL: You would indicate that there are historic roads, which are not in your project, and indicate which are within/through your APE. Obtain SIHP numbers for the roads. Will you

do anything to impact the roads? SHIP # integrity for the roads are only the location or the corridor. No change to the alignment; no impact.

Your project effect would be no effect for determination. With respect to that you are not creating any new impact and not changing characteristics.

Monitoring could be recommended for identification/cautionary measures not for Data Recovery.

Under 106 do you have any historical properties, single house lots not eligible for an historic property.

Notifications of homeowners that their house is within the APE will need to be done via public meetings and consultation letters.

DS: passive consultation with homeowners?

WF: there will be public meetings.

SL: Give the home owners the project description at the public meeting. Who is the lead agency?

WF: EPA

SL: they will get input from you on APE. They need to do consultation/identification process to start the 60 days.

Identify historic properties within the APE.

Testing is not needed for the entire APE.

Staging areas need to be added within the APE. APE in letter and AIS need to be include text stating "staging areas will be within the existing road, the PA and APE" or something similar.

Funding of EPA and subject to 6E and 106. Ask for SHPD concurrence on APE.

When you complete the 6E document (AIS), support county as no historic properties affected. Precautionary monitoring, to extensive excavation.

Under HRS 6E review – "No historic properties affected": means the project will have no effect on significant historic properties. The CoH makes this determination and asks for SHPD concurrence. Supporting documents for this determination should be sent to SHPD Archaeology Branch and Architecture Branch.

For Federal projects (under Section 106) – "No adverse effect" means historic properties are present but there is no adverse impact to the properties. The EPA makes this determination and asks for SHPD concurrence.

EPA – 106 determination of "no historic properties affected".

LRS – identification purpose, no impact, no historic properties affected.

End time: 2:18

Harry Kim  
Mayor

Wilfred M. Okabe  
Managing Director



William A. Kucharski  
Director

Diane A. Noda  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

345 Kekūanāo'a Street, Suite 41 • Hilo, Hawai'i 96720

Ph: (808) 961-8083 • Fax: (808) 961-8086

Email: [cohdem@hawaiicounty.gov](mailto:cohdem@hawaiicounty.gov)

October 9, 2019

Via email ([alan.s.downer@hawaii.gov](mailto:alan.s.downer@hawaii.gov)) and U.S. Mail

Alan S. Downer, Ph.D., Administrator  
Hawai'i State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamōkila Boulevard, Suite 555  
Kapolei, Hawai'i 96707

**RE: Pāhala Wastewater Treatment Plant and Sewer System Project  
Hionamoa, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island  
TMKs: (3) 9-6-002:016 por. and 018 por., 9-6-005:036 por. and 044, and County  
of Hawai'i Right-of Ways (Bautista et al. 2019)  
Acceptance of Archaeological Inventory Survey Report (LOG No. 2018.000722)**

Dear Dr. Downer:

The County of Hawai'i (COH) is proposing to undertake construction of the Pāhala Large Capacity Cesspool Replacement Project in Pāhala, Pa'au'au 1, Ka'ū District, Hawai'i Island. The project includes a new collection system and treatment and disposal facility to service the Pāhala community as well as closure of two Large Capacity Cesspools (LCCs). The collection system will be located primarily on County streets. The treatment and disposal facility will occupy 14.9 acres and is located on a portion of a 42.5-acre parcel, TMK (3) 9-6-002:018, near the southern edge of Pāhala Town. A Final Environmental Assessment is currently being prepared for this project. This project will use funds from a U.S. EPA Grant (EPA Grant XP-96942401-7) and from the State Revolving Funds (C150090-05, C150090-08) which includes federal and state monies.

On March 11, 2019, the County submitted to SHPD a Draft Archaeological Inventory Survey (AIS) for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoa, Palima, and Pa'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island (Log No. 2018.000722). In May 2019, the EPA contacted Sean Naleimaile of your staff and confirmed that SHPD was reviewing the Draft AIS for both NHPA Section 106 consultation and HRS 6E-8 concurrence purposes.

Alan S. Downer, Ph.D., Administrator

October 9, 2019


Page 2

On September 26, 2019, the EPA confirmed by letter that the EPA has determined that no historic properties will be affected by the undertaking. The basis for this determination was explained further in the Draft AIS submitted to SHPD in March 2019 by the County of Hawai'i, EPA's NHPA Section 106 designee. The two enclosed figures from the Draft AIS show the Area of Potential Effect (APE) and the treatment and disposal facility project site.

Based on the findings of the March 11, 2019, Draft AIS and the EPA's September 26, 2019, determination letter, we respectfully request that you review and accept the findings in the Draft AIS. Your acceptance of the Draft AIS is necessary so that needed final environmental assessment, design work, and eventually construction can proceed for the Pāhala Community Large Capacity Cesspool Replacement Project.

If you have any questions or desire additional information, please contact Dora Beck at (808) 961-8513 or [dora.beck@hawaiiicounty.gov](mailto:dora.beck@hawaiiicounty.gov)

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Kucharski', written over a light blue horizontal line.

William A. Kucharski  
Director

Encs: Draft AIS APE  
Draft AIS Treatment and Disposal Facility

cc: Craig Lekven, Brown & Caldwell  
Kate Rao, EPA  
Dora Beck, Wastewater Division Chief  
S. Wilkinson, CSH

WK:mef

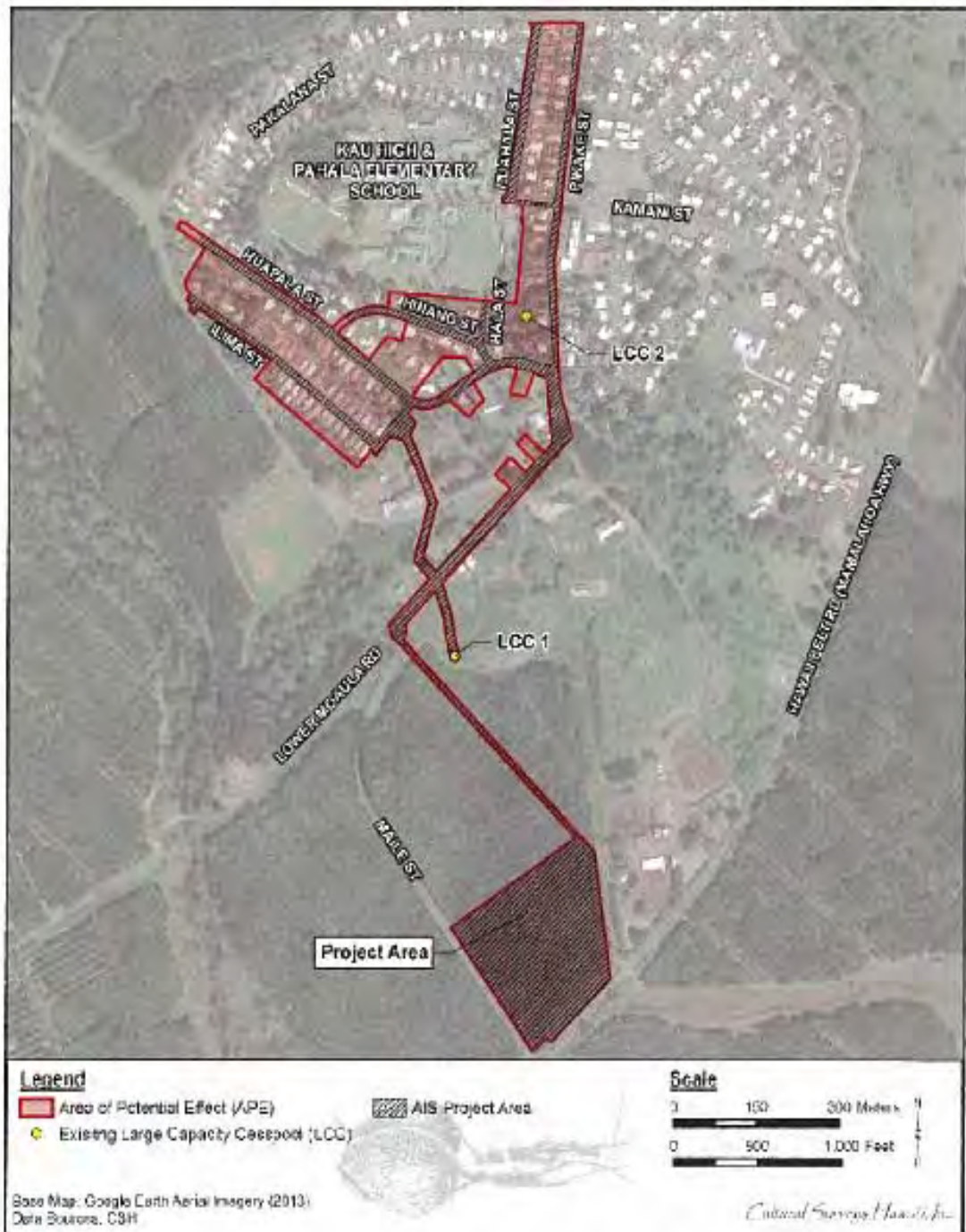


Figure 1. Area of Potential Effect and AIS Project Area for the Pāhala Community LCC Replacement Project

(Note: this is Figure 5 in the AIS)



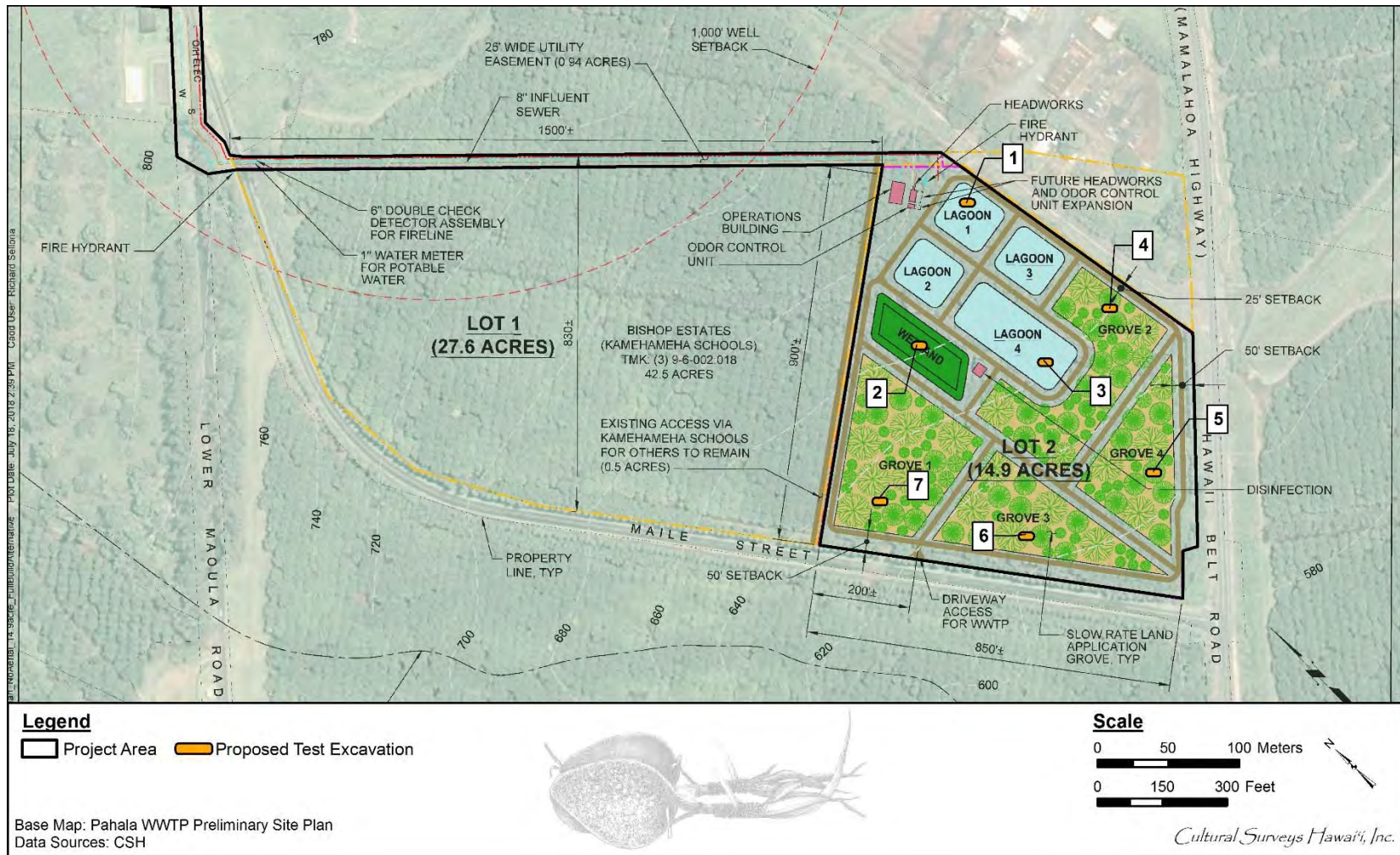


Figure 2. Pahala WWTP Preliminary Site Plan showing AIS test excavation locations

(Note: this is Figure 43 in the AIS)

**Appendix D-1**  
**National Historic Preservation Act Section 106 Consultation**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Certified Mail No.: 7008 1830 0002 6279 3093  
Return Receipt Requested

September 26, 2019

Alan Downer, Ph. D., Administrator  
Hawai'i State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamokila Blvd., Suite 555  
Kapolei, Hawai'i 96707

RE: National Historic Preservation Act (NHPA) Section 106 Consultation for the Pāhala  
Community Large Capacity Cesspool Replacement Project (EPA Grant XP-96942401)

Dear Dr. Downer:

The U.S. Environmental Protection Agency Region 9 (EPA) authorized our grantee, the County of Hawai'i (County), to initiate the NHPA Section 106 consultation process with the Hawai'i State Historic Preservation Division (SHPD) pursuant to 36 C.F.R. § 800.2(c)(4) for the above-referenced project in correspondence to you dated February 28, 2018.

On March 11, 2019, the County submitted to SHPD a Draft Archaeological Inventory Survey (AIS) for the Pāhala Wastewater Treatment Plant and Sewer System Project, Hionamoā, Pālima, and Pā'au'au 1 and 2 Ahupua'a, Ka'ū District, Hawai'i Island (Log No. 2018.000722). In May 2019, EPA contacted Sean Naleimaile of your staff and confirmed that SHPD was reviewing the Draft AIS for both NHPA Section 106 consultation and HRS 6E-8 concurrence purposes. However, Mr. Naleimaile recently contacted my staff seeking EPA's effect determination to complete the Section 106 process. While it was EPA's understanding that the County's March 2019 submission would be sufficient to convey EPA's effect determination, I am sending this letter to confirm that EPA has determined that no historic properties will be affected by the undertaking. The basis for this determination is summarized below and explained further in the Draft AIS submitted to SHPD in March 2019 by EPA's NHPA Section 106 designee.

#### Description of the Undertaking

The proposed undertaking involves construction of an improved wastewater system to replace two large capacity cesspools (LCCs) in the community of Pāhala, in the Ka'ū District, Island of Hawai'i. See Figure 1 for an overview of the existing LCCs, new collection system, and new treatment and disposal facility locations. Under the proposed undertaking, the County will perform the following actions:

- 1) Acquire, or otherwise obtain the right to develop and use, a portion of a 42.5-acre parcel, identified as Site 7, that is currently owned by Kamehameha Schools, then construct a new secondary wastewater treatment and disposal facility within a portion of the parcel (see Figure 2);
- 2) Construct a wastewater collection system, primarily within the public right-of-way and two short segments within easements in the Pāhala community, to collect and convey sanitary waste from the residential lots to the new treatment and disposal facility;
- 3) Close and abandon two LCCs, according to Hawai'i Department of Health (DOH) closure procedures; and
- 4) Abandon the existing wastewater collection system in place.

The new secondary wastewater treatment and disposal facility will be located on a 14.9-acre portion of the 42.5-acre parcel identified as Site 7. This 42.5-acre parcel (Tax Map Key (TMK): 3-9-6-002:018), located adjacent to LCC 1 about 0.5 miles (2,600 feet) south of the developed area of the community, is owned by Kamehameha Schools and used as a macadamia nut orchard. See Figure 2 for a preliminary site plan showing the proposed location of the treatment and disposal facility within the southeast portion of Site 7.

The new wastewater treatment and disposal facility will consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen, an adjacent disinfection system to remove pathogens, and four slow-rate land treatment basins for disposal of the treated effluent. Construction will involve grading, excavating, and fill activities at Site 7. Excavation to depths of approximately 4 to 10 feet will be required to provide necessary capacity for the lagoons, constructed wetlands, and planted groves. An approximately 4-foot tall berm will be constructed on all four sides of the groves to contain rainfall from a 100-year, 24-hour storm event.

The proposed wastewater collection system will be located within 8 public streets: Maile Street; 'Ilima Street; Huapala Street; Hīnano Street; Hala Street (all located in the southern portion of the community) and Puahala Street; Kaimani Street and Pīkake Street (located on the eastern end of the community). These streets serve the residential areas and have two travel lanes with unpaved shoulders and no improved sidewalks. The new collection system will consist of a total of approximately 12,150 linear feet (2.3 miles) of corrosion-resistant polyvinyl chloride (PVC) piping, ranging in size from 8-inch diameter to 16-inch diameter. Construction of the new wastewater collection system will require trenching in locations throughout the Pāhala community, primarily within the right-of-way of public streets plus two short segments within easements. Trenches will typically be about 3 feet wide and at least 6 feet deep. Once the line is placed in the trench, the affected area will be backfilled to restore the existing topography.

The two LCCs in Pāhala are readily accessible for closure activities. LCC 1 is located in a parcel that has been previously cleared and is currently overgrown with tall grasses. It may be necessary to clear a path for construction vehicles and equipment to access LCC 1. Clearing an access road (or other similar work) will not be necessary to access LCC 2, which is located in the backyard

of a residential lot with access via the house driveway. The specific methods to be used for closure of the LCCs have not yet been determined but will be compliant with DOH requirements.

Abandonment and closure of the two LCCs and the existing wastewater collection system will likely require minor earthwork. The area of potential effects (APE) described below is designed to encompass all potential closure activities.

### Area of Potential Effects

In accordance with 36 C.F.R. § 800.4(a)(1), EPA has defined the APE as the entire project area that will potentially experience ground disturbance due to excavation, trenching, grading, filling, vegetation removal, construction vehicle use, establishment and use of staging and laydown areas, and other similar activities. The APE encompasses the wastewater treatment plant development parcel, the entire length of the new wastewater collection system, utility and sewer line easements, the sites of the two existing LCCs, and properties with existing sewer laterals (see Figure 1).

### Identification of Historic Properties

The County conducted a search for historic properties within the APE for this undertaking and two road segments were identified and documented as historic features in the Draft AIS. However, after further review and evaluation, the County determined that they were not eligible for inclusion on the National Register of Historic Places due to the lack of integrity apart from their location.

If potential artifacts or archeological resources are discovered during construction activities, the contractor will stop work immediately at that location and take all reasonable steps to secure the preservation of those features.

### Native Hawaiian Organization Consultation

In accordance with the requirements of the National Historic Preservation Act, numerous stakeholders were consulted during the development of the Draft Environmental Assessment for the Pāhala Community Large Capacity Cesspool Replacement Project (Draft EA), including 14 Native Hawaiian Organizations that may attach religious or cultural significance to properties affected by the undertaking. On March 29, 2018, each of the following organizations was sent a copy of a project summary and a request for their written comments on the undertaking. Attachment A provides an example of the correspondence that was sent to all 14 organizations listed below. As of the date of this letter, no responses have been submitted to the County.

- Hawai‘i Island Burial Council
- Association of Hawaiian Civic Clubs
- Charles Pelenui Mahi ‘Ohana
- Friends of ‘Iolani Palace
- Hawaiian Civic Club of Hilo
- Kamehameha Schools
- Kanu o ka ‘Āina Learning ‘Ohana
- Ko‘olau Foundation
- Maku‘u Farmers Association
- Na Koa Ikaika Ka Lāhui Hawai‘i
- Office of Hawaiian Affairs
- Pacific Agricultural Land Management Systems
- Partners in Development Foundation
- Pi‘ihonua Hawaiian Homestead Community Association

## Outreach

During the public comment period for the Draft EA (September 23, 2018 – December 10, 2018), EPA and the County received public comments expressing concern regarding impacts to “a burial cave with human skeletal remains and or shelving” that is “in the area where the County wants to put a Sewage wastewater treatment plant.” Based on the available information, EPA and the County believe that these comments refer to the filled lava tube opening identified in the 2016 archaeological field inspection report that is described in Section 1.2 of the Draft AIS. To ensure that the undertaking does not affect this cultural resource, the County configured the site plan for the proposed wastewater treatment and disposal facility to ensure that the location of this lava tube opening would be outside the APE for this undertaking.

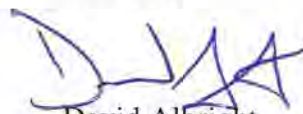
## Finding of No Historic Properties Affected

In accordance with 36 C.F.R. § 800.4(d), EPA has reached a finding of no historic properties affected for this undertaking. Since there are no known historic or archeological sites within the APE, and since appropriate preservation measures will be taken should archeological resources be discovered during construction, this undertaking will have no effect on any historic or cultural resources or on any traditional and customary practices. In addition, the potential for encountering unexpected archeological resources within the site of the proposed treatment and disposal facility is low due to historical ground modifications and ongoing harvesting activities.

I am requesting your concurrence with the APE and the determination of no historic properties affected within 30 days of receipt of this letter. If I do not receive a response within 30 days of receipt, I will assume concurrence from your office and EPA will authorize the grant recipient to proceed with the project in accordance with 36 C.F.R. § 800.4(d)(1)(i).

If you require additional information or have questions regarding this request, please contact Kate Rao, Groundwater Protection Section, at (415) 972-3533 or via email at [rao.kate@epa.gov](mailto:rao.kate@epa.gov).

Sincerely,



David Albright  
Manager, Groundwater Protection Section  
Water Division

cc:

William Kucharski, County of Hawai'i  
Dora Beck, County of Hawai'i

Attachments:

Figure 1 -- *Area of Potential Affect and AIS Project Area for the Pāhala Community LCC Replacement Project*

Figure 2 -- *Preliminary site plan showing the 14.9-acre Pāhala WWTP within the southeast portion of Site 7.*

Attachment A – *Native Hawaiian Organizations Correspondence*



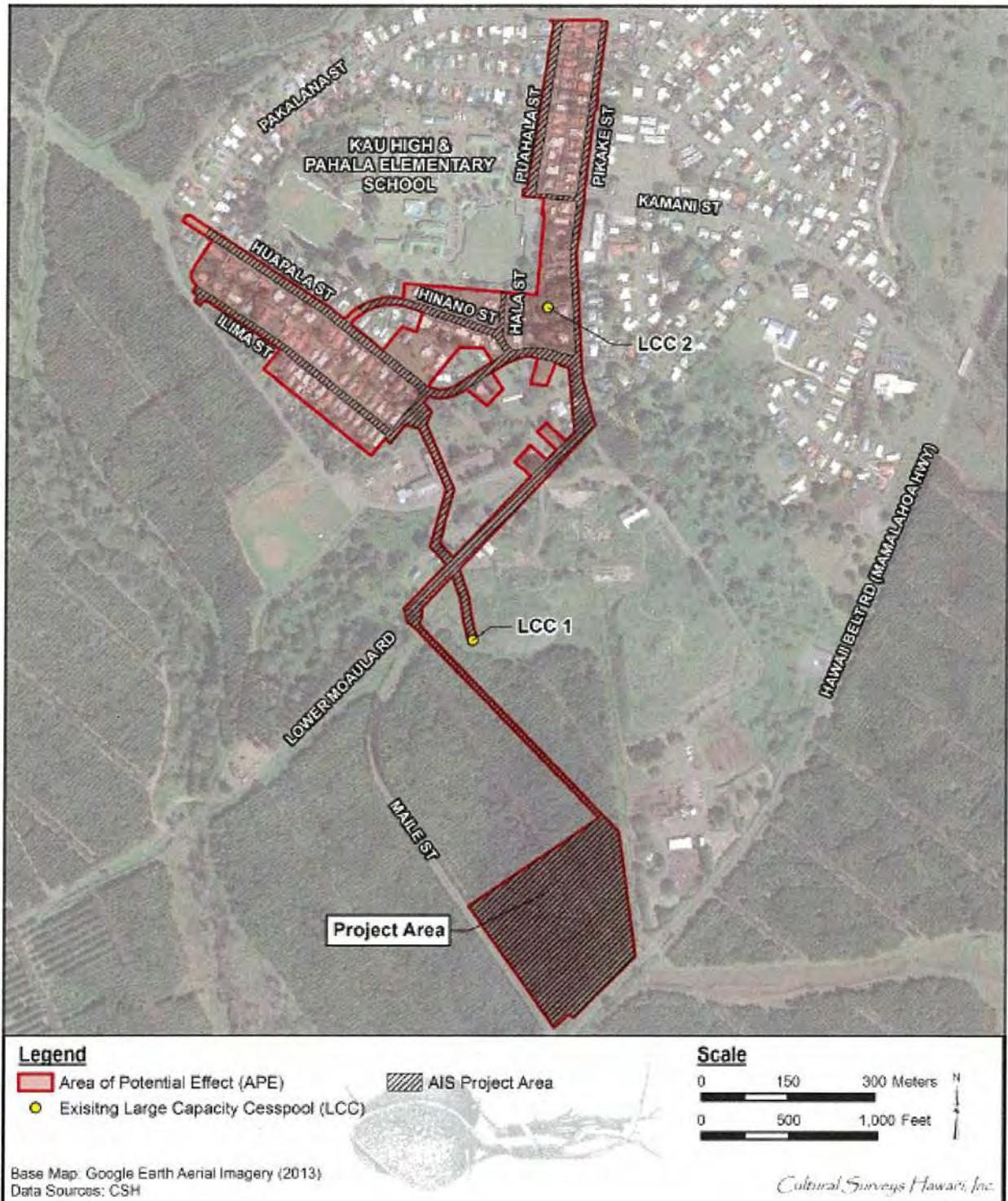


Figure 1. Area of Potential Affect and AIS Project Area for the Pāhala Community LCC Replacement Project

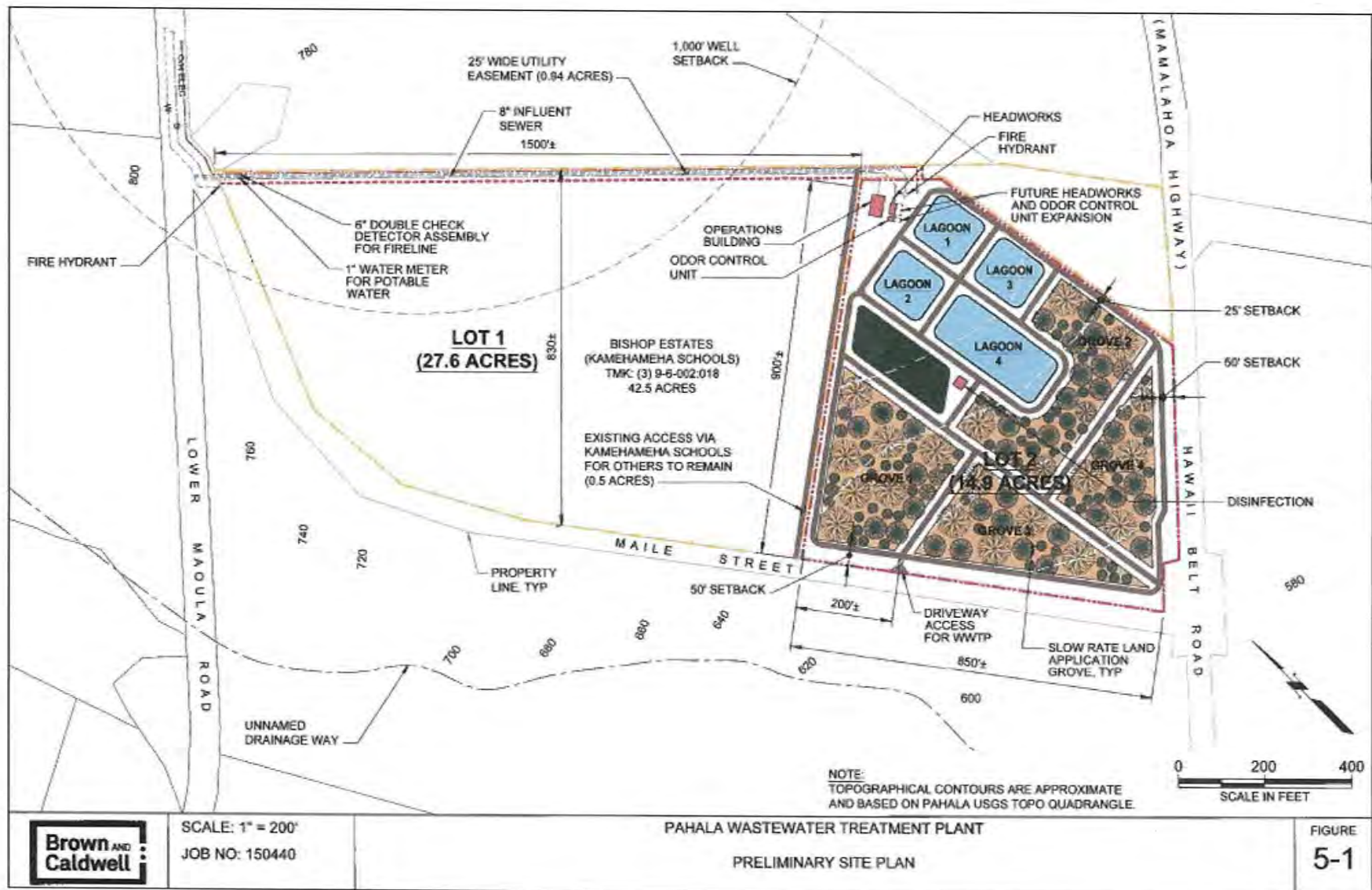
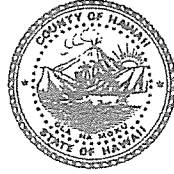


Figure 2. Preliminary site plan showing the 14.9-acre Pāhala WWTP within the southeast portion of Site 7. (Courtesy of Cultural Surveys Hawai'i)

Harry Kim  
Mayor

Wilfred M. Okabe  
Managing Director



William A. Kucharski  
Director

Diane A. Noda  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

345 Kekūanāo'a Street, Suite 41 · Hilo, Hawai'i 96720

Ph: (808) 961-8083 · Fax: (808) 961-8086

cohdem@co.hawaii.hi.us

<http://www.hawaiicounty.gov/environmental-management/>

March 29, 2018

Ms. Mililani B. Trask, Convenor  
Na Koa Ikaika o Ka Lāhui Hawai'i  
P.O. Box 6377  
Hilo, HI 96720

**Subject: Pāhala Community Large Capacity Cesspool Replacement  
Pā'au'au, Ka'u, Hawai'i  
Consultation Under U.S.C. §302706**

Dear Ms. Trask:

The County of Hawai'i Department of Environmental Management (DEM) is undertaking the Pāhala Community Large Capacity Cesspool Replacement, Pā'au'au, Ka'u, Hawai'i project. This project would be funded by a U.S. Environmental Protection Agency (EPA) Region 9 Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (SRF) loan program. The proposed project will utilize federal funds; as such it is considered a federal action and undertaking, as defined by the National Historic Preservation Act (NHPA) of 1966, as amended (2006), and as set forth in 54 U.S.C. §300320. Therefore, the EPA must consider the effects of the project on historic properties and must also consult with organizations that attach religious or cultural significance to properties affected by the project.

By letter dated March 8, 2018, the EPA Region 9 reached out to participants to be consulted on this project pursuant to U.S.C. §302706, also called Section 106 of the NHPA (see enclosure). The letter also stated that the EPA had authorized the DEM to initiate consultation. Therefore, on behalf of the EPA Region 9, the DEM invites you to participate in consultation for the proposed Pāhala Community Large Capacity Cesspool Replacement project, which is located about 52 miles south of Hilo and west (mauka) of Māmalahoa Highway (Route 11) within the community of Pāhala.

#### Overview of the Undertaking

The purpose of the project is to construct wastewater system improvements to replace the County's existing system servicing Pāhala. The wastewater system improvements will allow the

County to comply with EPA regulations requiring closure of large capacity cesspools (LCCs) and to construct a system meeting current State of Hawai'i Department of Health (DOH) and DEM design guidelines for the collection, treatment and disposal of the treated effluent. The Pāhala Community Large Capacity Cesspool Replacement Project improvements would be owned, operated and maintained by the County. A project summary sheet and location map are enclosed for your information.

The new wastewater collection system will be located within public rights-of-way, and the new treatment and disposal system will be located on a currently privately owned parcel (TMK: 9-6-002:018) which will be acquired by the County. The wastewater collection system would be located within 7 public streets; Maile Street, 'Ilima Street, Huapala Street, Hīnano Street, and Hala Street, all located in the southern portion of the community and Puahala Street; and Pīkake Street located on the eastern end. The collection system would consist of approximately 11,000 linear feet of gravity flow piping ranging from 8 to 12 inches in diameter. The collection system is not anticipated to include County pump stations, nor will the system collect stormwater runoff. The County's sewer standards show the trenches for sewer lines would require at least 4 feet of cover from the top of the pipe to grade and 12 inches of cushion material on both sides of the line and 6 inches below the line. Therefore, the typical sewer trenches will be about 3 feet wide and at least 6 feet deep.

The proposed treatment and disposal system would occupy about 14 acres and consist of a headworks with screens to remove debris and an odor control unit, four lined aerated lagoons of about 0.3 acres each, an operations building with adjacent disinfection system to remove pathogens, a subsurface flow constructed polishing wetland to remove nitrogen and four slow rate (SR) land treatment basins planted with native Hawaiian trees that will be surrounded by berms on all four sides. SR land treatment involves irrigation of land and vegetation with the treated effluent. Significant additional treatment is provided as the water percolates through the soil. The vegetation uptakes the nutrients in the effluent as fertilizer, and transpires a portion of the applied water. A security fence will be constructed along the perimeter of the site.

An archaeological inventory survey, including the excavation of trenches, will be conducted within the treatment and disposal project site to identify the presence of historic properties as defined in U.S.C §300308.

### Consultations

We welcome any comments you have on this Project's proposed improvements. We are particularly interested in any information you may have on the historic and cultural sites that have been recorded in the area or any other historic or cultural sites about which you may have knowledge.

Section 106 consultation letters have also been sent to other organizations or individuals that might attach significance to this area and inviting them to participate in the process. The attached list shows the organizations that are also being consulted as part of this Section 106 consultation.

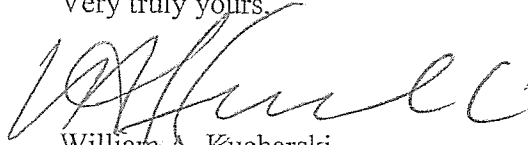
In addition, if you are acquainted with any persons or organization that are knowledgeable about the proposed project area, or any descendants with ancestral lineal or cultural ties to or cultural

knowledge or concerns for, and cultural or religious attachment to the proposed project area, we would appreciate receiving their names and contact information.

We would appreciate a written response within 30 days from date of receipt of this letter to Dora Beck, P.E., Project Manager, County of Hawai'i Department of Environmental Management, by U.S. Postal Service to County of Hawai'i Department of Environmental Management, 108 Railroad Avenue, Hilo, Hawai'i 96720.

Please feel free to contact Dora Beck by telephone at (808) 961-8513 if you have any questions. We look forward to working with you and the State Historic Preservation Division on these needed improvements.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'W. A. Kucharski', written in dark ink.

William A. Kucharski  
Director

WK/DB:mef  
Attachment and enclosures

Pāhala Community Large Capacity Cesspool Replacement Project  
Pā'au'au, Ka'u, Hawai'i  
Native Hawaiian Organizations Consultation List

Hawai'i Island Burial Council  
Association of Hawaiian Civic Clubs  
Charles Pelenui Mahi 'Ohana  
Friends of 'Iolani Palace  
Hawaiian Civic Club of Hilo  
Kamehameha Schools  
Kanu o ka 'Āina Learning 'Ohana  
Ko'olau Foundation  
Maku'u Farmers Association  
Na Koa Ikaika Ka Lahui Hawai'i  
Office of Hawaiian Affairs  
Pacific Agricultural Land Management Systems  
Partners in Development Foundation  
Pi'ihoua Hawaiian Homestead Community Association

**PROJECT SUMMARY**  
**Pāhala Community Large Capacity Cesspool Closure**  
**Pā'au'au, Ka'u, Island of Hawai'i**  
**Tax Map Key: 9-6-002:018**

**1. Introduction**

The community of Pāhala is located about 52 miles southeast of Hilo, in the Ka'u District, Island of Hawai'i. Pāhala is located west (mauka) of Māmalahoa Highway (State Route 11) about 3.8 miles from the shoreline with most of the community lying between 980 feet mean sea level (msl) on the western end and approximately 800 feet msl on the eastern end. See Figure 1. The Pāhala community had its start in 1876 with establishment of the Hawaiian Agricultural Company to develop the sugar industry in Hawai'i. For the next 120 years or so, Pāhala was a major sugar producing area. However, by the early 1990s there was a major downturn in the sugar market. Thus, beginning in 1994, the sugar mill in the town was shut down and dismantled. By 1996, the Ka'u Sugar Company, the successor to the Hawaiian Agricultural Company, closed and, subsequently, the sugar cane fields were cleared and the lands now grow macadamia nut and coffee trees. The population in Pāhala was approximately 1,405 persons in 2016, the most current estimate.

Founded in 1826, C. Brewer was both the oldest company in Hawai'i and a major developer of the sugar industry in Pāhala. For about the last 60 years, approximately 50 percent of the residential units in Pāhala have been serviced by a wastewater collection and disposal system constructed, operated and maintained by C. Brewer. The collection system consisted of sewer lines, some of which were located in the streets and others routed in the backyards of private parcels. The disposal system consisted of two large capacity cesspools (LCCs) within the community.

In 1998, the US Environmental Protection Agency (EPA) issued regulations (40 CFR 144.14) requiring the elimination or closure of all large capacity cesspools used for wastewater disposal by April 5, 2005. In 2003, C. Brewer requested assistance from the County to close their LCCs. Subsequently, the County held a community meeting to present sewer system replacement alternatives. Voting took place by mail to choose the preferred sewer improvement alternative, resulting in 87 percent of returned ballots in favor of installing a new sewer collection, treatment and disposal system to be operated and maintained by the County.

In 2006, in anticipation of its dissolution, C. Brewer requested the County construct and maintain a new community sewer system. The County subsequently agreed by way of a County Council Resolution, to enter into a formal agreement to assume ownership of the C. Brewer constructed collection system and the two LCCs by April 30, 2010 and to construct and maintain a new community sewer system. As part of the County's agreement, C. Brewer agreed to install laterals to certain of the residential properties.

In 2007, the County proposed a new collection system and a wastewater treatment system, consisting of large capacity septic tanks and converting the existing LCCs into seepage pits for disposal of the treated effluent. In 2008, the combination of the LCCs being in poor and failing condition and the poor results from soil percolation tests influenced the County to consider acquiring a larger land area to construct a secondary treatment system. Such a system could allow a higher level of wastewater treatment and disposal, as well as accommodate existing Pāhala properties not currently served by the LCC system in addition to expanding the system to accommodate possible community growth.

**2. Project Description**

The County of Hawai'i, Department of Environmental Management (DEM) is proposing to construct wastewater system improvements to replace the current system servicing Pāhala, now owned by the County. The wastewater system improvements would allow the County to comply with EPA

**PROJECT SUMMARY**  
**Pāhala Community Large Capacity Cesspool Closure**  
**Pā'au'au, Ka'u, Island of Hawai'i**  
**Tax Map Key: 9-6-002:018**

regulations requiring closure of the LCCs and to construct a system meeting current State of Hawai'i Department of Health (DOH) and DEM design guidelines for the collection, treatment and disposal of the treated effluent. The Pāhala Community Large Capacity Cesspool Closure project improvements would consist of a new wastewater collection system located within the public right-of-way and a treatment and disposal system located on a currently privately-owned parcel (TMK: 9-6-002: 018) which will be acquired by the County. The Pāhala Community Large Capacity Cesspool Closure project would be funded by an EPA Special Appropriation Grant and by the State of Hawai'i Clean Water State Revolving Fund (SRF) loan program.

The wastewater collection system would be located within 7 public streets; Maile Street; 'Ilima Street; Huapala Street; Hīnano Street; Hala Street; all located in the southern portion of the community and Puahala Street; and Pīkake Street located on the eastern end. These streets serve the residential areas and have two travel lanes with unpaved shoulders and no improved sidewalks. The collection system would consist of approximately 11,000 linear feet of gravity flow piping ranging from 8 to 12 inches in diameter. The collection system is not anticipated to include pump stations, nor will the system collect stormwater runoff. The number of manholes in the system will be determined during the detail design phase. The County's sewer standards show the trenches for sewer lines would require at least 4 feet of cover from the top of the pipe to grade and 12 inches of cushion material on both sides of the line and 6 inches below the line. Therefore, the typical sewer trenches will be 3 feet wide and at least 6 feet deep.

The treatment and disposal system would be a land-based system located southeast of the developed community and would be designed to treat flows of approximately 190,000 gallons per day. The EPA defines land treatment as "the application of appropriately pre-treated municipal and industrial wastewater to the land at a controlled rate in a designed and engineered setting. The purpose of the activity is to obtain beneficial use of these materials, to improve environmental quality, and to achieve treatment goals in a cost-effective and environmentally sound manner".

The proposed treatment and disposal system would occupy about 14 acres and consist of a headworks with screens to remove debris and an odor control unit, four lined aerated lagoons of about 0.3 acres each, an operations building with adjacent disinfection system to remove pathogens, a subsurface flow constructed polishing wetland to remove nitrogen and four slow rate (SR) land treatment basins which will be surrounded by berms on all four sides. SR land treatment involves irrigation of land and vegetation with the treated effluent. Significant additional treatment is provided as the water percolates through the soil. The vegetation uptakes the nutrients in the effluent as fertilizer, and transpires a portion of the applied water. A security fence will be constructed along the perimeter of the site.

### **3. Anticipated Impacts**

Project impacts would be primarily related to construction of the trenches for placement of the collection system lines and construction of the land-based treatment and disposal system. These activities would create dust and noise while work occurs in the streets and in the area of the land treatment and disposal system, which will include removal of existing macadamia nut trees within the 14 acre project site. As the collection system is constructed, the streets will be restored for vehicle travel. Upon completion of the treatment and disposal facilities, the project will operate without the need for DEM employees to be on-site. Weekly monitoring visits will be sufficient to insure routine proper operation, and a telemetry system will alert DEM employees of abnormal conditions to allow timely response when they occur.



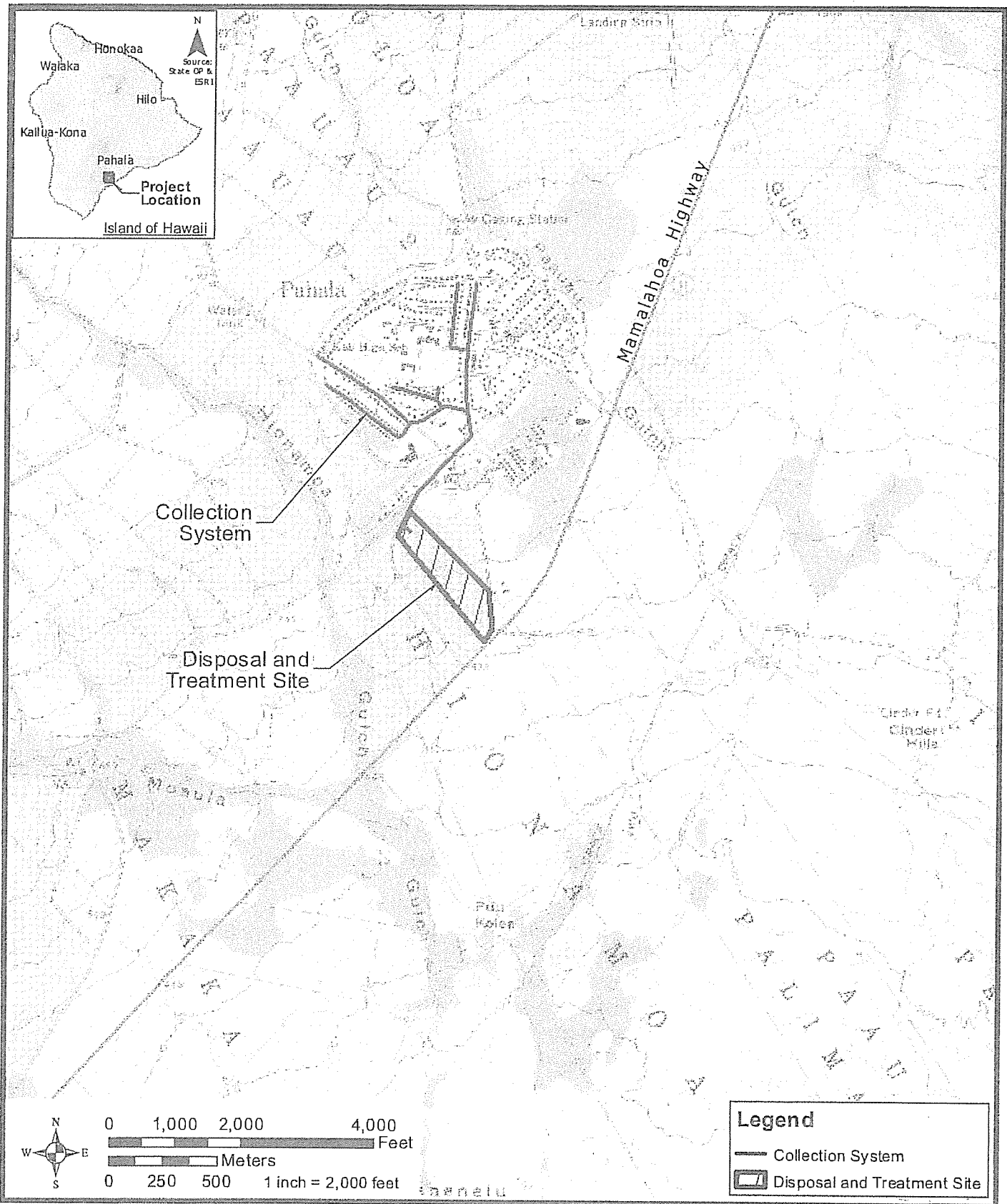
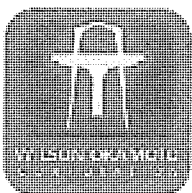


FIGURE 1  
PROJECT LOCATION MAP

PAHALA COMMUNITY LARGE CAPACITY CESSPOOL CLOSURE PROJECT  
COUNTY OF HAWAII DEPARTMENT OF ENVIRONMENTAL MANAGEMENT





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

MAR 08 2018

Mililani B. Trask, Convenor  
Na Koa Ikaika Ka Lahui Hawaii  
PO Box 6377  
Hilo, HI 96720

RE: U.S. Environmental Protection Agency Region 9 authorization to allow the County of Hawaii to initiate consultation with the State Historic Preservation Officer and Native Hawaiian organizations for the Pahala Community Large Capacity Cesspool Replacement Project

Dear Ms. Trask:

The U.S. Environmental Protection Agency Region 9 (EPA) awarded a Special Appropriation Act project grant to the County of Hawaii for the Pahala Community Large Capacity Cesspool (LCC) Replacement Project. This project may have effects on properties included in, or eligible for inclusion in, the National Register of Historic Properties. The National Historic Preservation Act (NHPA), 54 U.S.C. §300101 *et seq.*, and its implementing regulations, 36 CFR Part 800, require federal agencies to consider the effects of their undertakings on historic properties.

Pursuant to 36 CFR §800.2(c)(4), a Federal agency may authorize an applicant for federal assistance to initiate consultation with the State Historic Preservation Officer (SHPO) or Native Hawaiian organizations provided that: (1) the Federal agency remains legally responsible for all findings and determinations charged to the agency official; and (2) the Federal agency notifies the SHPO or Native Hawaiian organizations when an applicant is so authorized.

In accordance with 36 CFR §800.2(c)(4), EPA hereby authorizes the County of Hawaii to act on EPA's behalf when initiating the NHPA consultation process in connection with the Pahala Community LCC Replacement Project. Effective immediately, the County of Hawaii may consult with the SHPO and Native Hawaiian organizations (see enclosed list) to initiate the review process under 36 CFR Part 800 including identifying and evaluating historic properties, assessing effects, and proposing mitigation measures where necessary. However, EPA Region 9 will remain responsible for participating in the consultation process if:

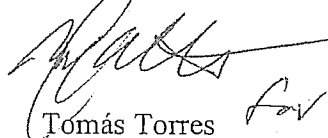
- the County of Hawaii determines that the "Criteria of Adverse Effect" under 36 CFR §800.5 applies to this project; or
- there is disagreement between the County of Hawaii and the SHPO or Native Hawaiian organizations regarding the scope of the area of potential effects, identification of historic properties, or evaluation of effects; or

- there is an objection from consulting parties or the public regarding findings or determinations or the implementation of agreed provisions; or
- there is potential for a foreclosure situation or intentional adverse effects as described under 36 CFR §800.9(b) and (c).

In accordance with 36 CFR §800.2(c)(2), EPA shall ensure that all consultations with Native Hawaiian organizations are conducted in a sensitive manner concerning the needs of such organizations.

If you have any questions, please contact Kate Rao, Drinking Water Protection Section, at (415) 972-3533 or via email at [rao.kate@epa.gov](mailto:rao.kate@epa.gov).

Sincerely,



Tomás Torres  
Water Division Director

Encl.: Pahala Large Capacity Cesspool Replacement Project  
Native Hawaiian Organizations Consultation List

cc: William Kurcharski, County of Hawaii  
Dora Beck, County of Hawaii  
Craig Levken, Brown and Caldwell  
Earl Matsukawa, Wilson Okamoto Corporation  
John Sakaguchi, Wilson Okamoto Corporation  
David Shideler, Cultural Surveys Hawaii, Inc

Pahala Large Capacity Cesspool Replacement Project  
Native Hawaiian Organizations Consultation List

Hawaii Island Burial Council

Association of Hawaiian Civic Clubs

Charles Pelenui Mahi Ohana

Friends of Iolani Palace

Hawaiian Civic Club of Hilo

Kamehameha Schools

Kanu o ka 'Āina Learning 'Ohana

Koolau Foundation

Maku'u Farmers Association

Na Koa Ikaika Ka Lahui Hawaii

Office of Hawaiian Affairs

Pacific Agricultural Land Management Systems

Partners in Development Foundation

Piihonua Hawaiian Homestead Community Association

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**Appendix E**  
**EPA and County of Hawai'i Responses to Comments on the Draft EA**

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**Appendix E:  
U.S. Environmental Protection Agency  
and County of Hawai'i  
Response to Comments on the Draft  
Environmental Assessment**

for the  
Pāhala Large Capacity Cesspool (LCC)  
Replacement Project  
EPA Grant XP-96942401

Pāhala, District of Ka'u, County of Hawai'i, Hawai'i  
TMK: 9-6-002:018



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# 1 Index of Comments Received on the Pāhala Large Capacity Cesspool Replacement Project Draft EA

A Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool (LCC) Replacement Project<sup>1</sup> was released for public comment on September 23, 2018. Initially, a 30-day public comment period was planned; however, due to requests from the public for additional time, the U.S. Environmental Protection Agency (EPA) and the County of Hawai‘i (County) agreed to republish the Draft EA on November 8, 2018 which extended the comment period. The comment period closed on December 10, 2018. Table 1 lists the comments received, including the names of the commenters and a comment number assigned to each comment. In total, 77 comment letters were received, some of which included multiple individual comments.

<b>Number</b>	<b>Commenter</b>	<b>Date</b>
1	S. Demoruelle	9/24/2018
2	S. Demoruelle	9/24/2018
3	S. Demoruelle	9/24/2018
4	S. Demoruelle	9/24/2018
5	S. Demoruelle	9/25/2018
6	S. Demoruelle	9/25/2018
7	S. Demoruelle	9/25/2018
8	S. Demoruelle	9/25/2018
9	S. Demoruelle	9/28/2018
10	S. Demoruelle	9/28/2018
11	S. Demoruelle	9/28/2018
12	S. Demoruelle	9/28/2018
13	S. Demoruelle	9/29/2018
14	S. Demoruelle	10/1/2018
15	S. Demoruelle	10/1/2018
16	S. Demoruelle	10/3/2018
17	S. Demoruelle	10/6/2018
18	S. Demoruelle	10/10/2018
19	S. Demoruelle	10/12/2018
20	S. Demoruelle	10/13/2018
21	S. Demoruelle	10/21/2018
22	S. Demoruelle	10/24/2018
23a	S. & J. Demoruelle	10/22/2018
23	[Comment combined in 23a]	
24	[Comment combined in 23a]	
25	[Comment combined in 23a]	
26	T. Tuttle	10/10/2018
27	S. Demoruelle	10/10/2018
28	N. Hong	10/10/2018
29	N. Gilmour	10/17/2018
30	J. Warren	10/19/2018
31	N. Gilmour	10/20/2018

<sup>1</sup> Preconsultation letters and other materials related to this project may use a slightly different project title (e.g., Pāhala Community Large Capacity Cesspool Replacement Project).

**Table 1**  
**Index of Comments Received on the Pāhala LCC Replacement Project Draft EA**

32	State of Hawai'i Office of Planning	10/17/2018
33	E. Andrade Jr.	10/19/2018
34	C. & T. Tuttle	10/22/2018
35	State of Hawai'i Department of Hawaiian Home Lands	9/27/2018
36	County of Hawai'i Police Department	10/2/2018
37	R. Javar	10/10/2018
38	L. Lopes	10/22/2018
39	S. Demoruelle	10/23/2018
40	Pāhala Residents per Pele Defense Fund	10/23/2018
41	S. Hanoa	10/23/2018
42	J. Moses	10/24/2018
43	A. & A. McDowell	10/22/2018
44	D. Loper	9/29/2018
45	S. Demoruelle	10/31/2018
46	S. Demoruelle	10/31/2018
47	S. Demoruelle	10/31/2018
48	S. Demoruelle	10/31/2018
49	S. Demoruelle	10/26/2018
50	S. Demoruelle	11/2/2018
51	S. Demoruelle	11/5/2018
52	S. Demoruelle	11/6/2018
53	S. Demoruelle	11/8/2018
54	S. Demoruelle	11/13/2018
55	A. & M. Ibarra	11/13/2018
56	W. & D. Wong Yuen	11/14/2018
57	S. Demoruelle	11/16/2018
58	S. Demoruelle	11/2/2018
59	L. Navarro	11/19/2018
60	L. Gollin	11/19/2018
61	T. Ibarra	12/1/2018
62	P. Fuerte	10/10/2018
63	G. Sorensen	11/2/2018
64	S. Demoruelle	12/10/2018
65	S. Demoruelle	12/10/2018
66	S. Demoruelle	12/10/2018
67	T. Napeahi, Pele Defense Fund	12/10/2018
68	D. Kalua	12/4/2018
69	T. Napeahi, Pele Defense Fund [Duplicate of Comment 67]	12/10/2018
70	T. Napeahi, Pele Defense Fund [Duplicate of Comment 67]	12/10/2018
71	State of Hawai'i Department of Land and Natural Resources	12/7/2018
72	State of Hawai'i Department of Education	12/7/2018
73	N. Gilmour	12/10/2018
74	K. Fox	12/10/2018
75	S. Demoruelle	12/10/2018
76	N. Hong	10/28/2018
77	State of Hawai'i Department of Land and Natural Resources	10/22/2018

## 2 EPA Response to Comments

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EPA’s responses to comments received are detailed below. Due to the number of comments received, comments and responses are grouped by subject matter. Each section contains a summary of comments received, followed by EPA’s responses.

As explained in the Preface of the Final EA, EPA and the County elected to prepare a joint EA in order to promote consistency and avoid duplication of efforts. Due to the fact that it is a joint document, the Final EA contains information related not only to compliance with the National Environmental Policy Act (NEPA) and federal cross-cutting authorities, but also information related to compliance with state and local requirements, such as the Hawai’i Environmental Policy Act (HEPA), otherwise referred to as Hawai’i Revised Statutes (HRS) Chapter 343. EPA is only responsible for addressing compliance with NEPA and federal cross-cutting authorities, and thus, EPA’s responses to comments are focused on these issues. The County is responsible for complying with additional state and local requirements and has prepared separate responses to individual comments that are included in Section 3 of this Appendix. The County responses use the same numbering system as Table 1 (see Section 1).

### 2.1 Resource Area Impacts

Responses to comments received regarding the impacts to the resource areas as described in the Draft EA associated with the proposed project have been arranged into the following categories:

- Flood Risk
- Public Services
- Visual Characteristics
- Socioeconomic
- Archeological and Cultural Resources
- Air Quality
- Other Impacts

#### 2.1.1 *Flood Risk*

##### Comment

- I am concerned about the flooding potential of the WWTP, specifically relating to the culvert that carries water beneath the highway from the macadamia nut orchard. (Comments 22, 41)
- What will prevent the "lagoon style treatment plant" from overflowing in the event of heavy rains and flooding due to tropical storms and hurricanes, which may be more frequent with climate changes? (Comments 28, 33, 56)
- There has been historical flooding that is a major concern to the community, to the proposed area. (Comment 40)
- Flooding at the sewage treatment plant site will cause health and safety issues. (Comments 63, 76)

- Flooding at the site will create hazardous and dangerous scenarios. Flooding will impact emergency routes, may impact travel to hospitals or emergency facilities and could isolate emergency first responders, fire and EMS vehicles and equipment. (Comments 41, 67, 68)
- The location of the plant should be reconsidered because of the history of flooding in the area. Overflow of the reservoirs could transport toxins, bacteria, and chemicals over Highway 11, through conservation and preservation areas, and into the ocean. (Comments 55, 76)

### Response

Due to the nature of the comments received, the responses to flooding-related comments were broken into two response categories:

- a) Flood Risk: Response addressing concerns regarding the potential for the location of the wastewater treatment and disposal facility and collection system to flood; and
- b) Overflow of Wastewater Treatment and Disposal Facility: Response addressing concerns regarding the design of the facility and concerns related to overflow inside the facility.

#### **a) Flood Risk**

As stated in the Draft EA Section 3.9.1 (Flood Risk – Existing Conditions), the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017, shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot. The County of Hawaiʻi Department of Public Works (in its April 16, 2018 response to the pre-assessment notification) confirmed that the proposed wastewater treatment and disposal facility site is outside the 500-year floodplain. As such, the site is not considered to be in a high flood risk area. The wastewater treatment and disposal facility would not result in construction of new facilities within the 500-year floodplain. Although a small portion of the proposed collection system is located within the 500-year floodplain, the associated trenching operations would be temporary and would not alter the 500-year floodplain. No impacts to the existing floodplain are expected.

The wastewater treatment and disposal facility would be designed to minimize the creation of new stormwater flow and to avoid disrupting existing stormwater flow patterns. Current drainage patterns are influenced by two existing culverts that allow stormwater to flow across the Māmalahoa Highway in the vicinity of the proposed wastewater treatment and disposal facility. The first is a box culvert located at the intersection with Maile Street that conveys stormwater under the highway. The second culvert is located approximately 600 feet east of the Maile Street intersection and was used to convey sugar mill flume water across the highway for disposal. Please see the Final EA Section 3.23.1 (Infrastructure – Drainage System) for a map showing the location of the two culverts.

The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins (see Draft EA Section 3.23.2).

The Pāhala LCC Replacement Project would have minimal impact on existing stormwater flows. The Site 7 parcel, including the proposed site of the wastewater treatment and disposal facility, slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows drain through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street - Māmalahoa Highway intersection to the areas below the highway. Stormwater drainage flows generated upstream of the wastewater treatment and disposal facility project site would be directed around the perimeter via diversion swales that would convey flow back to the existing drainage pattern to the culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. However, these ponding events are typical and expected at any culvert and would not be exacerbated as a result of the Proposed Action because there would be no net increase in runoff or drainage flows from the site up to and including design storm events. Due to the topography of Site 7, stormwater drainage flows from onsite are not anticipated to flow through the second culvert mentioned above due to its elevation and location to the east which means it is generally upgradient from the onsite drainage patterns.

As a result, the Pāhala LCC Replacement Project is not anticipated to contribute to any increased risk of flooding of Māmalahoa Highway, Maile Street, or downstream properties. The State of Hawaiʻi Department of Transportation (DOT) Hawaiʻi District office was contacted to discuss the historical roadway flooding concerns expressed by the community at the wastewater treatment and disposal facility project site and the culvert at the Maile Street - Māmalahoa Highway intersection. The District office indicated the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage at that location during precipitation events.

Furthermore, the Pāhala LCC Replacement Project would be constructed in accordance with all applicable design criteria related to minimizing flood risk. As stated in the Draft EA Section 3.23 (Infrastructure – Drainage System), the on-site stormwater management system would meet the requirements of Hawaiʻi County Code (HCC) § 27-20(e) (Standards for subdivisions and other developments), which mandates a site drainage plan to “comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain runoff caused by the proposed development, within the site boundaries, up to the expected one-hour, ten year storm event as shown in the department of public works ‘*Storm Drainage Standards*’ unless those standards specify a greater interval.” To act as secondary containment in the event of a large storm event, landscape buffers with dirt berms may also be constructed around most of the perimeter of the facility; these berms would be subject to a geotechnical engineering assessment of berm stability during the design process.

In addition, to meet the requirements of HCC § 27-20(f), the wastewater treatment and disposal facility would be designed to not alter the general drainage pattern above or below the development. Thus, no increase in flow amount for HCC design storm events would be directed to either of the culverts at the highway as a result of the site development. HCC § 27-20 requires an on-site drainage plan to accommodate any runoff caused by a proposed development. Therefore, a drainage study would be prepared during the design process to evaluate the improvements that are needed to comply with the County Code requirements. These additional requirements and impact avoidance measures are stated in the Final EA Sections 2.3.1 and 3.23.

Finally, the Pāhala LCC Replacement Project is not anticipated to impact emergency routes. The Draft EA Section 2.3 (Proposed Action – Site 7 Alternative) Figure 2.2 showed that the Pāʻauʻau Gulch near the hospital is located about 0.735 miles north of the wastewater treatment and disposal facility site and lies at approximately 780 feet above mean sea level (about 140 to 200 feet above the site), which means surface flows at the site would not affect the gulch. Similarly, the Kaimani Street and Māmalahoa Highway intersection lies about 0.72 miles north of the

wastewater treatment and disposal facility site and at about 780 feet above mean sea level, which means surface flows at the site would also not affect that intersection. As stated above, the project would not increase the risk of flooding of Māmalahoa Highway or Maile Street as it would not increase the amount of runoff. Emergency access to Ka‘ū Hospital would not be impacted as a result of the Proposed Action because flooding of the roads due to stormwater and surface flow is not expected to increase as a result of the Proposed Action. The entrance to the Ka‘ū Hospital on Kamani Street is about 3/4 mile northeast of the proposed wastewater treatment and disposal facility site.

#### **b) Overflow of Wastewater Treatment and Disposal Facility**

The wastewater treatment and disposal facility and collection system would be designed to accommodate the peak flows during design wet weather flow events, including precipitation on the area occupied by the lagoon treatment system. In the Draft EA Appendix B (Preliminary Engineering Report), Section 2.2, the anticipated peak wastewater flows from the community provided are based on the applicable design standards. The Draft EA Section 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility) stated the lagoons would be lined with high density polyethylene liners to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B Section 5.3 showed the lagoons would have sufficient operational freeboard to contain and to equalize design flows during peak weather events. In addition, the slow-rate land application groves would be designed to completely contain both anticipated peak wet weather effluent flows and on-site captured precipitation from a 100-year, 24-hour storm event. This would be accomplished by constructing berms around the land application tree groves. The tree groves would be designed in accordance with the EPA’s “Process Design Manual, Land Treatment of Municipal Wastewater Effluents.” Effluent would be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event. Thus, the collection system, the lagoons themselves, and the land application groves would be designed to include sufficient extra capacity to limit overflows during design storm events. Due to these flood mitigation measures, no overflows would occur for storms up to the 100-year, 24-hour storm event.

Additional information concerning the flood risk of the proposed treatment and disposal facility and collection system has been added to the Final EA Section 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility) and 3.23 (Infrastructure – Drainage System).

#### **2.1.2 Public Services**

##### Comment

- Maile Street is an emergency route in and out of Pāhala. If the county fences the property, will the road be closed if there is an emergency? Will Māmalahoa Highway be closed too? (Comment 41)

##### Response

The fencing of the wastewater treatment and disposal facility (Site 7) would not affect emergency routes. As discussed in the Draft EA Section 3.17 (Traffic), the Proposed Action is “outside the Māmalahoa Highway ROW and would not require any disturbance or other impacts within the Māmalahoa Highway ROW.” Maile Street would be impacted only to the extent needed for typical traffic control operations and no permanent or temporary fencing would be constructed in a way that impacts Maile Street or Māmalahoa Highway. This is also depicted in the Draft EA Figure 2.3, which shows no project elements affecting Maile Street or Māmalahoa Highway. Prior to implementing the Proposed Action, traffic control plans would be developed and approved by the

County which would include measures to allow for emergency access during project construction. As stated in the Draft EA Section 3.17.2, the traffic control plans would provide directions to temporarily divert traffic or close travel lanes during the construction period. Normally, such plans call for these diversions or closures during non-peak travel times to minimize disruptions to traffic flow. No long-term road closures would be needed for the Proposed Action. This information has been repeated and clarified in the Final EA.

### **2.1.3 Visual Characteristics**

#### Comment

- Why should people here in Pāhala have to see a sewage plant when entering our town? (Comment 41)
- The treatment plant will be visible during times of high winds, as the surrounding trees and foliage bend and sway. (Comment 56)
- The plant will be an eyesore at the entrance to our community. (Comments 63, 67)

#### Response

As discussed in the Draft EA Section 3.19 (Visual Considerations and Light Pollution), the Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. Above grade structures, such as the operations building and, headworks cover structure, would be screened by existing Cook pine trees along Maile Street, most of which would remain. The wastewater collection system would be installed below the streets and therefore would not impact views. Visual impacts would also be mitigated by the 8.0 acres of planted trees in the disposal groves, and by the rise in elevation between the highway and the facility. Exterior lighting at the proposed wastewater treatment and disposal facility would be designed in accordance with HCC § 14-50 and would be limited to manually switched lights under the roof overhang at the entrance to the operations/electrical building and at the headworks area. Lights would be installed with down-shielding to prevent excess light pollution. When an operator or maintenance staff are not present on-site, lights would not be on. The Final EA Section 3.19 has been revised to include that the maximum height of the wastewater treatment and disposal facility above-grade structures would not exceed 25 feet. For more information, please refer to the County responses provided to the above comments.

### **2.1.4 Socioeconomic**

#### **Cost of the Project**

#### Comment

- The costs of the project are excessive and will cause economic harm of the county into the future. The cost will be over \$250,000 per LCC household. (Comment 45)
- The Pāhala project cost is excessive (\$40.5 million). The cost of the project should be kept under \$10 million. (Comments 45, 46)
- The cost estimates for the Pāhala WWTP Project are inaccurate. The project will cost approximately \$40 million. (Comment 51)
- The combined costs of both WWTP projects in the County are excessive. (Comment 51)
- These Wastewater Projects have become a total boondoggle. Please stop this waste of tax dollars and set a firm budget of under \$10 million! (Comment 52)
- The costs of the project have skyrocketed. (Comment 61)



- The County and Ka‘ū taxpayers cannot afford to spend \$81 million the two projects. (Comment 66)
- The cost of the project is grossly underestimated. (Comment 23a)

#### Response

NEPA does not require a monetary cost-benefit analysis of a project, particularly where there are important qualitative considerations. See 40 CFR § 1502.23.<sup>2</sup> In this case, the “No-Action Alternative” would not satisfy the intended purpose and need for the Proposed Action as outlined in the Draft EA Section 2.2 (Purpose and Need for Action), which is to provide the infrastructure necessary to enable the County to comply with the Safe Drinking Water Act (SDWA) and fulfill the compliance provisions of the Administrative Order on Consent (AOC) between EPA and the County with respect to closure of the Pāhala LCCs by April 2023.<sup>3</sup>

Though not required under NEPA, planning-level cost comparisons for the Pāhala LCC Replacement Project were summarized in the Preliminary Engineering Report (see Appendix B of both the Draft EA and Final EA). The capital cost of an aerated lagoon/constructed wetland/land application treatment and disposal facility is estimated at \$16 million (plus \$2 million for concrete lagoon lining if required) and has an estimated annual operations and maintenance cost of \$227,000. The capital cost of closure of two community LCCs and a new collection system is estimated at \$14 million. These numbers represent a conceptual planning-level construction cost estimate and do not include planning, design, land acquisition, or past project costs. Of the treatment alternatives that were deemed feasible and compared in Appendix B, the proposed wastewater treatment and disposal facility design has the lowest estimated capital cost and estimated annual operations and maintenance cost. Thus, even if a cost-benefit analysis were performed (which is not required under NEPA), it would likely support the Proposed Action. Information on anticipated project costs has been added to the Final EA Section 2.1.2 (Project Funding).

### **County Financial Capacity**

#### Comment

- I am concerned about the impact of the Pāhala project on the credit capacity of the county of Hawai‘i given the diminishing tax base. Why wasn't the financial standing and debt burden of the county discussed in the DEA? (Comment 12)
- The Draft EA did not consider the economic impact of CWSRF loans on the County. (Comment 23a)
- The Draft EA has no cost analysis for borrowing funds to pay for the Pāhala project. (Comment 27)

#### Response

The federal action triggering NEPA review of this project is the award of a federal earmark grant (not a loan), which would not require repayment. The County has proposed to finance the remainder of the project using funds from the Hawai‘i Clean Water State Revolving Fund (SRF), which provides low-interest loans for the construction of publicly owned wastewater treatment

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<sup>2</sup> While the above-cited regulation applies specifically to the preparation of an EIS, the rationale behind it applies equally to the preparation of an EA.

<sup>3</sup> In September 2019, EPA accepted the County’s request to extend the Pahala LCC closure date from June 2021 to April 2023.

works. The SRF loan process is managed by the State of Hawaiʻi Department of Health and is outside of the scope of this NEPA analysis.

### **Economic Impacts on the Community**

#### Comment

- The Draft EA did not consider the economic impact of costs on Pāhala households. (Comment 23a)
- The costs of connecting newly accessible properties will fall on many elderly residents with fixed incomes. (Comment 41)
- Pāhala is an economically depressed community with a high percentage of people on welfare, social security, pension, or other fixed income. How are they going to afford any hook up fees, maintenance fees, or any other fees that will likely come with this wastewater treatment plant? (Comment 56)
- The county or state needs to find alternate sources of funding to cover hook-up costs for all lots within the planned project area. The expense of joining the new sewer system will place a burden on the sensitive populations of Pāhala. (Comment 73)
- The cost of connecting the "newly accessible lots" to the new system will have a devastating financial impact on the community and could result in the loss of community support for the project. (Comment 31)
- Why are some residents paying hookup fees and others are not? Should not discriminate. (Comment 67)
- What is the cost to be on the county sewer? Residents who are not on the LCC will be penalized with enormous fees, which is a large burden to older residents on fixed incomes. (Comment 55)
- I am really upset that lots that were not hooked up to the C. Brewer system will have to pay a lot of money to hook up to the new system. Many of these lots are owned by low income or elderly people who cannot afford to hook up to the new system on their own. (Comment 42)
- Including the whole community of Pāhala in the new system places an unnecessary financial burden on both the homeowners and the County. (Comment 61)
- I have no money to hook up to the sewage plant. (Comment 37)
- The community is being divided because the County is covering costs for certain houses to be hooked up to the new system and requiring other homeowners to pay to hook up. (Comment 42)
- The costs of the two Kaʻū projects far exceeds the taxable value of the lots to be disconnected from the LCCs. (Comment 65)
- Funding should be available for the entire project. Pāhala is a poor and poverty district, with 85% of residents retired or living on fixed incomes, limited employment opportunities. (Comment 40)

#### Response

The purpose of the Proposed Action is to bring the County into compliance with the SDWA by constructing an alternative means of wastewater disposal that would allow the County to close

the existing LCCs. NEPA does not require consideration of socioeconomic impacts that are unrelated to an impact on the physical environment. See 40 CFR § 1508.14.

The Proposed Action is expected to result in the connection of 111 existing connected lots to the new collection system and wastewater treatment and disposal facility. In addition, due to their proximity to the new collection system, 65 to 66 additional lots would become accessible to the sewer. Sewer laterals to the property line would be installed as a part of this project. Under the Proposed Action, the design of the new collection system would include sewer service stub-outs to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there would be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the HCC, the respective newly-accessible property owners would be responsible for the design, permitting, and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. It is not accurate that the whole community of Pāhala would be included in the new sewer system.

The Draft EA Section 3.16 (Socioeconomic Characteristics) provided information regarding the socioeconomic characteristics of the Pāhala community in comparison to the County of Hawai‘i. The information for the 2012-2016 period shows the median age for Pāhala is 42.4 years, compared to 41.8 years for the County. By age group, Pāhala shows a total of 65.7 percent less than 60 years old, compared to 74.2 percent for the County. The median household income for Pāhala is \$47,625, compared to \$53,936 for the County. For Pāhala, 85.1 percent of households have an income less than \$99,999, compared to 77.6 percent for the County. Overall, the Proposed Action is expected to benefit residents by providing a cleaner and longer-lasting wastewater treatment system. This information has been repeated and updated in the Final EA. The Final EA Sections 3.16 (Socioeconomic Characteristics) and 5.7 (Environmental Justice Executive Order 12898) have been updated to clarify that, despite the relatively high proportions of low-income, minority, and children residents in Pāhala compared to the County overall, the Proposed Action would not result in disproportionately high and adverse human health or environmental effects on these sensitive populations.

EPA acknowledges commenters’ concerns over hook-up fees, maintenance fees, and other potential fees. However, it is the responsibility of the County to determine how to finance their portion of the Proposed Action. Additional research and outreach regarding financing options for residents was provided by the County in response to comments from the community. On March 21, 2019, the County held a meeting in Pāhala which included a presentation to provide information on financing options available to residents whose lots would become accessible to the new collection system. The purpose of the meeting was to fulfill a County commitment made in October 2018 to research financing options available to the newly accessible residents of the Pāhala community by March 2019. This information has been included in the Final EA Section 7 (Public Participation).

## **Sources of Funding**

### Comment

- Did C Brewer give the County funding? (Comment 67)
- No consideration has been given of other funding types for the project. (Comment 23a)
- Should the County of Hawai‘i fund the whole project, including hook ups? (Comment 67)

### Response

The Draft EA Section 2.1.2 (Project Funding) discussed the two funding sources that would be used to support the Pāhala LCC Replacement Project: an EPA Special Appropriations Act Project (SAAP) grant and Clean Water State Revolving Funds. An EPA SAAP grant was awarded to the County in 2005, and subsequently amended. The total amount of the award is \$1.842 million.

The second source of funding for the project is the Hawai‘i Clean Water State Revolving Fund. The Hawai‘i Clean Water State Revolving Fund receives annual funding from the EPA, which the State of Hawai‘i Department of Health is then responsible for allocating among eligible projects. The Final EA Section 2.1.2 has been updated to include additional information about this source of funds.

As stated previously, the proposed project is expected to result in some costs to owners of lots that become accessible to the new wastewater collection system. A discussion of the County’s efforts to identify additional financing options for homeowners to pursue can be found in the section above (*Economic Impacts on the Community*). The Final EA Section 3.16 (Socioeconomic Characteristics) has been updated with this information.

Please refer to the Draft EA Section 2.1.4 (History of Wastewater Management in Pāhala) for a discussion of C. Brewer’s involvement. Additional information has been added to the Final EA Section 2.1.4 for clarity.

### **2.1.5 Archeological and Cultural Resources**

#### Comment

- The proposed plant may be located in proximity to an archeological or burial site. (Comment 33)
- There are burials and caves within the proximity of proposed site. Community members have witnessed seeing the caves and burials. It was deemed a site not to be used by the County back in 2008. (Comment 41)
- There are cultural and historic resources, including caves and bones, at the site. (Comment 42)
- There are many caves and unrecorded burial sites in Pāhala. There needs to be a thorough EIS, and in-depth testing, not just surface testing that was done, to document any archeological findings. (Comment 56)
- Lava tubes and burials were identified during previous development projects in Pāhala. No subsurface testing for these resources was completed on the site, and these areas could be affected during development or flooding of the site. (Comment 67)
- Possible burial sites are suspected to be present on or near the site. (Comment 68)
- Concerned about use of the current site due to the presence of historically sensitive areas. Elders should be consulted about these resources. (Comment 73)
- The location of the burial cave (believed to be in the southeastern corner of the site) should be ascertained and this area protected. Once the location of the cave has been identified, consultation with descendants, SHPD, and the Hawai‘i Island Burial Council can be completed to determine appropriate physical buffers for the facility. It is very important to ascertain that the burial cave is located at a higher elevation than the proposed facility to ensure that the cave is not subjected to contact with treated or untreated wastewater. (Comment 74)

## Response

As discussed in the Draft EA Section 3.15.1(a) (Archeological and Cultural Resources – Existing Conditions), after consultation with the State Historic Preservation Division (SHPD), the County initiated an Archeological Inventory Survey (AIS) to “fully document, map, date and collect [any] surface artifacts” located at the proposed site. An AIS plan was approved by the SHPD on August 20, 2018.

Since the publication of the Draft EA, the Draft AIS for the Pāhala Wastewater Treatment Plant and Sewer System Project was completed and submitted to the SHPD on March 11, 2019, for review. The AIS was generated based on a literature review and research, pedestrian surveys, and subsurface testing. The AIS report did not identify any pre-Contact features or lava tubes within the project area. The AIS report referenced the findings of a November 2016 survey which did identify a known lava tube access within former plantation land to the east of and outside of the treatment and disposal facility project site, and just north of Māmalahoa Highway that has been blocked. No impacts to this lava tube are expected since it is located outside of the treatment and disposal facility project site. The Draft EA Section 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility) stated the aerated lagoons would be lined with high density polyethylene liners to prevent water seepage through the bottom and sides of the lagoons. Thus, untreated wastewater would not enter the ground beneath the wastewater treatment and disposal facility.

To determine the location of the lava tube that may be what is referenced by commenters, the County sent a follow-up letter to Commenter 40, the Pele Defense Fund, requesting information about the known lava tubes in the project area via email to the address from which the comment was submitted and via certified mail on November 14, 2018 but received no response.

Overall, the AIS results supported a determination of “no historic properties affected” by the proposed project. This information is updated in the Final EA Section 3.15 and the Draft AIS report has been included as an Appendix to the Final EA.

Consultation regarding historic properties has been completed according to applicable laws and regulations. The Draft AIS report was provided to SHPD in accordance with the requirements of the National Historic Preservation Act (NHPA) and was made available to the public by the EPA on June 5, 2019 through a publicly available web posting on the project page for the Pāhala project (see: <https://www.epa.gov/uic/proposed-Pāhala-community-large-capacity-cesspool-replacement-project-draft-environmental>). In the AIS, the area of potential effect was determined to be 57.7 acres and includes the following:

1. The 14.9-acre wastewater treatment plant (WWTP) site, within which all project-related staging, including for the collection system and the treatment and disposal facility, will be located;
2. An approximately 1,500-foot (ft) long by 25-ft wide utility easement (about 0.94 acres) located entirely within Tax Map Key (TMK) [3] 9- 6-002:018 to connect the collection system line and other utilities to the WWTP;
3. The path of the new sewer collection lines, to be located within the 22- to 24-ft wide travel surface of select county streets;
4. Sewer line easements of similar width (22-24 ft) through TMKs [3] 9-6-005:036 and 044 connecting the collection lines to the proposed Pāhala WWTP site;
5. The existing LCC 1 and 2 locales (located in TMKs [3] 9-6-002:016 and 9-6-016:041, respectively), and an approximately 100-m (328-ft) long by 15-m (49-ft) wide corridor along

the existing sewer line easement in TMK [3] 9-6-002:016 between Maile Street and LCC 1; and

6. Numerous single-family residential/other properties with existing sewer laterals, some of which may need to be replaced/repaired/rehabilitated by the County.

In accordance with the NHPA (36 CFR § 800.4(d)), EPA reached a finding of no historic properties affected for this undertaking and requested SHPD concurrence with this determination on September 26, 2019. No response from SHPD has been provided to date. In accordance with 36 CFR § 800.4(d)(1)(i) and as specified in the September 26 letter, because no response was received within 30 days of SHPD receipt of the adequately documented finding, EPA has fulfilled their Section 106 responsibilities for this undertaking. However, construction would not proceed until SHPD has approved the Draft AIS.

Though pedestrian surveys were conducted throughout the APE to identify potential lava tubes and none were visually observed at the site, the AIS was not able to conclusively establish that lava tubes are not present within the area surveyed as part of the AIS. Therefore, in addition to the field methodology presented in the AIS, and to limit ground disturbance, the County is in the process of performing Ground Penetrating Radar and soil resistivity surveys as part of the project design phase, and would adjust the final design of the Proposed Action as needed to mitigate impacts to any potential lava tubes identified as a result of these surveys. The discussion in the Final EA Section 3.3 (Geology) has been updated to reflect this.

The Hawai‘i Island Burial Council was consulted as part of the Draft EA preparation process. As stated in the Draft EA Section 3.15 (Archeological and Cultural Resources), on March 29, 2018, the County also conducted outreach to Native Hawaiian Organizations as part of the Section 106 consultation for this project. Consultation letters were delivered to invite comments from organizations that may attach religious or cultural significance to properties affected by the Proposed Action. A total of 14 letters were mailed to various Native Hawaiian Organizations requesting comments (see the Draft EA Section 10); no responses have been submitted to the County. In addition, outreach for the Draft EA included talk story sessions that were open to all members of the public, including elders.

On September 26, 2018, a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers to advertise that on October 10, 2018, a public information meeting was to be conducted by the County in Pāhala at the Ka‘ū Gym Multi-Purpose Conference Room to discuss the Draft EA and that a second part of the meeting would also address Section 106 of NHPA. Although eight persons signed in to comment on Section 106, no comments or information were forthcoming regarding Section 106 during the October 10<sup>th</sup> meeting. This information is included in the Final EA Section 7 (Public Participation) and Section 3.15.

It is not true that the site of the Preferred Alternative (Site 7) was “deemed a site not to be used by the County back in 2008.” It appears that the commenter is referring to the 2007 Nā‘ālehu and Pāhala LCC Conversion project Final EA (the “2007 Final EA”), which evaluated a proposed project to install septic tanks to replace the existing LCCs. The 2007 Final EA did not evaluate Site 7 as an alternative location for the septic tank project and did not identify it as a site “not to be used by the County.”

### **2.1.6 Air Quality**

#### Comment

- Residents of Pāhala have a high rate of asthma and studies have shown that there are negative impacts on residents who live next to a sewage plant. Not only do we have the

chemicals left in the ground by C, Brewer, we have the dust and chemicals from the Macadamia Nut Co. and the vog from Tutu Pele. (Comment 41)

- The smell of the facility is a concern. (Comments 33, 56, 67, 68)
- The treatment plant could cause an increase in harmful airborne bacteria. (Comment 67)

#### Response

Odor and smell impacts were addressed in the Draft EA Section 3.14.2(a) (Air Quality – Impacts and Mitigation Measures) which stated “to mitigate potential nuisance odors, the headworks [of the wastewater treatment and disposal facility] would be equipped with an odor control system with a GAC scrubber to remove odor [...] the treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring” under normal operating conditions. This information has been repeated in the Final EA.

For other air quality impacts, the design and operation characteristics of the new wastewater treatment and disposal facility would limit pathways for off-site migration of aerosols. As stated in the Draft EA Section 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility), the lagoons would be equipped with high-speed floating aerators. The plant design would not result in migration of aerosols outside of the site boundaries. The land application system would use a piping system with slots at ground level to distribute treated and disinfected wastewater; because this process distributes disinfected water and does not create an aerosol, risk of exposure to pathogens through inhalation is minimal.

Furthermore, the wastewater treatment and disposal facility would be located at least 0.5 miles away from the developed area of the community, which provides a buffer to mitigate potential concerns associated with nuisance odors or aerosol migration that could arise outside of normal operating conditions.

### **2.1.7 Other Impacts**

#### Comment

- Is this project going to affect the whole community? (Comment 62)
- Will outside community waste be transported into Pāhala? (Comment 67)

#### Response

In the Pāhala community, between 176 and 177 lots would be affected directly by the new collection system of the Proposed Action (111 lots on the existing LCC system and 65 to 66 newly accessible lots). This information has been revised in the Final EA Section 2.3.2 (Construct New Wastewater Collection System). The collection system and the treatment and disposal facility are to serve only the Pāhala community.

#### Comment

- The sewer will attract pests. (Comment 67)

#### Response

The existing wastewater collection system is an aging system that has flaws and cracks that can provide access to pests such as rats and cockroaches. When the new collection system is installed, the existing system would be abandoned, and the subsequent lack of use would reduce available habitat and pest food sources. The new collection system would be more resistant to

developing cracks and openings, resulting in fewer opportunities for pests to access the sewer as compared to existing system.

Closure and abandonment of the existing LCCs would eliminate potential pest attractants. In addition, the wastewater treatment and disposal facility would be located farther from the Pāhala community than the existing LCCs, thus conveying sewage to a facility that would incorporate design elements and operation practices to reduce attractiveness to pests. These design elements and operation practices would include features such as appropriate removal and management of waste from screening mechanisms to reduce food sources; use of aerators in lagoons to agitate water sources that otherwise could attract mosquitoes; and intermittent dosing of effluent to avoid standing water in groves. The Proposed Action would not be expected to contribute to pest-related concerns in Pāhala. This information is included in the Final EA Section 3.13 (Fauna).

#### Comment

- The current site location causes concerns about impacts in the event of a natural disaster. Topics to be addressed include developing a hazard plan, response to fires and spills resulting from pump failure, and assuring sources of power and water at the site. (Comment 67)

#### Response

As stated in the Draft EA Section 3.4 (Seismic Hazard), the wastewater treatment and disposal facility would be designed and constructed to meet the requirements of the International Building Code, 2006 Edition (IBC) as specified in HCC Chapter 5 and would comply with seismic loadings established for the County of Hawai‘i. This would minimize the potential for an uncontrolled release of untreated or partially treated sanitary wastewater, emergency generator diesel fuel, or disinfection chemicals from the facility during a seismic event. Hazards related to hurricanes, such as wind, rain, and flood loads, would be taken into account during detailed design. In addition, the treatment processes would be appropriately designed to have capacity to accommodate upset conditions, including pump and other equipment failures by use of back-up generator for power as described below, alarm conditions for operators and a communication system.

Information pertaining to fire systems, water supply, and electrical systems is located in the Final EA Sections 3.21 (Public Services – Fire Protection), 3.22 (Infrastructure – Water System), and 3.24 (Infrastructure – Electrical and Communication Systems), respectively. As explained there, fire protection and related services would be provided to the treatment facility from a fire station located in Pāhala, and the treatment and disposal facility would include a fire protection line sized as required during design to be used in the event of a fire. Department of Water Supply and the Fire Department would have an opportunity to review construction plans for the Proposed Action during the project design phase. All alternatives would be designed according to NFPA 820 “Standard for Fire Protection in Wastewater Treatment and Collection Facilities.” In accordance with Hawai‘i Fire Department requirements, Fire Department access and water supply to the proposed Site 7 would be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by the County of Hawai‘i. This information is included in the Final EA Sections 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility) and 3.22.

Water service does not currently exist at Site 7. Water for the proposed wastewater treatment and disposal facility would be provided by extending the existing water main operated by the County of Hawai‘i DWS (located approximately 2,000 feet northeast of the proposed wastewater treatment and disposal facility) and by installing a service line to connect the new facility to that extended water main. The proposed site (Site 7) was deemed preferable to two other sites



considered (Sites 8 and 9) because, among other reasons, potable water and fire protection lines would need to be extended further to reach the latter two sites. Operation of the sewer system would not require a water source external to the proposed treatment and disposal facility. As stated in the Draft EA Section 3.22.2, construction plans would show the estimated maximum daily water usage calculations prepared by a professional engineer licensed in the State of Hawai‘i. After review of the calculations, DWS would determine if enough water is available and a water commitment could be issued.

It is anticipated that electrical power would be provided by Hawai‘i Electric and Light Company (HELCO) overhead power lines and a pole-mounted transformer. Backup power would be provided by a diesel generator and aboveground fuel tank with capacity to support three consecutive days of operation. In addition, the electrical service panel would support a connection to a portable trailer-mounted generator in the event of a power outage lasting longer than three days. This information has been repeated in the Final EA Section 3.24.

## **2.2 NEPA Processes**

Responses to comments regarding the federal NEPA process for the Proposed Action have been arranged into the following categories:

- Purpose and Need
- Scope of Proposed Action
- Cumulative Effects
- Federal and State Consultations
- NEPA Procedures

### **2.2.1 Purpose and Need**

#### Comment

- Why does the small community of Pāhala need a wastewater treatment plant (WWTP) when other communities have larger populations and are growing in size? (Comment 56)
- Why was the Pāhala community chosen to have the cesspool conversion done by 2021 when the rest of the state has until 2050? (Comment 67)
- If this is truly a means for Hawai‘i County to avoid fines from the federal government for the LCC violations, then that is what the focus of the proposal should be about. (Comment 61)

#### Response

As described in the Draft EA Section 2.1.3 (Large Capacity Cesspools), the two cesspools serving Pāhala community meet the criteria of being LCCs under federal law since they each serve multiple dwellings. These LCCs are in violation of the SDWA as long as they continue to operate. The SDWA Underground Injection Control (UIC) Program prohibited the construction of new LCCs as of April 2000 and required the closure of all existing LCCs by April 5, 2005 (see 40 CFR § 144.88). In order to close the LCCs serving the Pāhala community and comply with federal law, the County needs to develop an alternate means of wastewater treatment for those homes and buildings that are currently connected to the LCCs.

It is not true that the rest of the state has until 2050 to close LCCs—all LCCs across the nation, including those in the Pāhala community, were required under federal law to be closed by 2005. In referencing 2050, it appears that the commenter is referring to a Hawai‘i state law that was

passed in 2017 that requires the closure of all cesspools (LCCs and small capacity cesspools) by 2050. Unlike LCCs, which serve multiple dwellings and/or have the capacity to serve 20 persons or more per day, small capacity cesspools typically serve individual homes and are not regulated under federal law. This information has been clarified in the Final EA Section 2.1.3.

EPA and the County entered into an AOC in June 2017 since the County continued to operate the Pāhala LCCs after the 2005 closure deadline and after assuming ownership of the system from C. Brewer in 2010. This Administrative Order included an enforceable schedule for the County to close the Pāhala LCCs in order to bring the County into compliance with federal law. Because the LCCs cannot be closed until an alternate means of wastewater disposal is constructed, the schedule for closure of the LCCs included in the Administrative Order was developed based on the County’s estimate of the amount of time required to design and build a replacement means of wastewater disposal.

After careful review of different alternatives for wastewater treatment and disposal (see Section 2.5.4 (Treatment Alternatives) of this Appendix and the Final EA Section 2.8 (Alternatives Considered but Not Carried Forward)), the County identified the most appropriate solution given the community requirements as well as applicable Federal, State, and County regulations governing wastewater disposal systems. The wastewater treatment and disposal facility would be sized appropriately for the Pāhala community, based on the number of lots that would be connected to the new facility through the Proposed Action (anticipated to be approximately 176 to 177 lots), and wastewater flow projections for these lots, as determined by code. The size is also determined by the use and zoning of the lots and includes a standard allowance for industrial lots. For more information on the sizing of the proposed wastewater treatment and disposal facility, see Section 2.4.3 (Hawai‘i Department of Business, Economic Development and Tourism, Land Use Commission (LUC)) of this Appendix.

#### Comment

- There is no data to prove Pāhala community at status quo shows an impact in ground water contamination. (Comment 67)

#### Response

The purpose of, and need for, the project is to close the LCCs serving the Pāhala community in order to bring the County into compliance with federal law, and to prevent potential impacts to public health and the environment that may be caused by discharging untreated sewage into the ground in a residential neighborhood. Regulations promulgated under the SDWA required the closure of all LCCs nationwide by no later than April 2005. There is no requirement under these regulations to show actual impacts to groundwater. This is because the SDWA is designed to prevent endangerment of drinking water before it occurs—thus, to comply with the SDWA, the regulations require closure of all LCCs. The Draft EA Section 3.8.2 (Ground Water – Impacts and Mitigation Measures) stated that while use of the two LCCs has not resulted in documented impacts to groundwater or drinking water resources, abandonment of the LCCs would remove a potential source of such impacts and bring the facility into compliance with the SDWA. Abandonment of the existing wastewater collection system would not affect groundwater within the affected areas. This information is repeated in the Final EA Section 3.8.2.

### **2.2.2 Scope of the Proposed Action**

#### Comment

- The failure to consider aggregated and cumulative effects of the Pāhala and Nā‘ālehu projects is legally unacceptable. These two projects should be analyzed in a single impact

statement because of the connected nature and possible cumulative impacts of the projects. (Comment 4)

- The Pāhala and Nā‘ālehu projects should be considered together. (Comment 16)
- The Pāhala and Nā‘ālehu projects were separated to evade NEPA review. The Pāhala project is violating NEPA procedural requirements. (Comment 23a)
- NHPA Section 106 consultation should have been conducted for both the Pāhala and Nā‘ālehu projects together. (Comment 65)
- Demoruelle v. Beck evidence of misconduct in following NEPA/HEPA. (Comment 75)

### Response

NEPA defines actions as connected if they satisfy any of the following criteria:

- i. Automatically trigger other actions which may require environmental impact statements (EISs).
- ii. Cannot or will not proceed unless other actions are taken previously or simultaneously.
- iii. Are interdependent parts of a larger action and depend on the larger action for their justification. [40 CFR § 1508.25]

The proposed Pāhala LCC Replacement Project does not meet any of the above criteria. The proposed Pāhala LCC Replacement Project does not automatically trigger other actions which may require an EIS and is a stand-alone project which does not rely or depend on any other project. Therefore, the proposed Pāhala LCC Replacement Project is not considered connected to the Nā‘ālehu Large Capacity Cesspools Closure Project (Nā‘ālehu Project) for purposes of NEPA.

As stated in the Final EA Section 2.9 (Relationship to 2007 Final Environmental Assessment), in 2007 the County elected to evaluate the two projects in a single environmental review document under HRS 343 because at that time, both projects were expected to proceed along the same timeline and both were expected to be funded under the EPA SAAP grant. The County decided to not move forward with the proposed project as evaluated under that process for several reasons which are also described in the Draft EA Section 2.9.

Since then, the grant workplan for the EPA SAAP grant has been amended to include only the Pāhala community - LCCs Replacement Project. This decision was made based on two points: 1) the federal grant funds would only cover a portion of one of the projects and 2) it was expected that the Pāhala LCC Replacement Project could be completed faster than the Nā‘ālehu Project, and there was therefore a lesser likelihood that funds associated with the grant would be de-obligated before they could be spent. Consequently, the Nā‘ālehu Project will not receive any funding under the EPA SAAP grant.<sup>4</sup>

The funding of the Pāhala LCC Replacement Project under the SAAP grant is considered a federal action that requires environmental review under NEPA. Because funding from the EPA SAAP grant is allocated to the Pāhala LCC Replacement Project, and because the Nā‘ālehu Project is not a connected action, it is not appropriate to include the Nā‘ālehu Project as part of the Proposed Action examined in the Pāhala LCC Replacement Project EA. The EPA did consider the potential cumulative effects of other past, present, and reasonably foreseeable actions

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<sup>4</sup> In 2011, EPA reimbursed the County for approximately \$113,000 for preliminary designs for the Nā‘ālehu Project. The Nā‘ālehu Project will be completed with County and State funds and will not receive any additional EPA SAAP grant funds.

(including the Nā‘ālehu Project) as required by NEPA in the Draft EA Section 4 (Cumulative Effects) and additional information is included in Section 2.2.3 (Cumulative Effects) of this Appendix.

The two projects are also considered separate for purposes of the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to take into account the effects of federal undertakings on historic properties (see 40 CFR § 800.1(a)). Specifically, agency officials must assess whether historic properties occur within the “area of potential effect” for the project, and if so, whether they would be impacted by the project. NHPA regulations provide that agency officials should engage in consultation with the appropriate state historic preservation officer and consulting parties in order to determine whether the proposed project is expected to result in impacts to historic properties.

EPA and the County engaged in the NHPA Section 106 consultation process for the Pāhala LCC Replacement Project and determined the area of potential effect for the project did not extend outside the Pāhala area as described in Section 2.1.5 (Archeological and Cultural Resources) of this Appendix. Because Nā‘ālehu is located 11 miles from Pāhala and is well outside of any area expected to be affected by the Pāhala LCC Replacement Project, the Nā‘ālehu Project was not considered as part of the Pāhala LCC Replacement Project Section 106 consultation process. The Final EA Section 3.15 (Archeological and Cultural Resources) has been updated with additional information regarding the NHPA Section 106 Consultation process.

In accordance with state requirements, the Nā‘ālehu Project would undergo a similar consultation process to assess potential impacts on historic properties as part of the separate environmental review for that project.

### **2.2.3 Cumulative Effects**

#### Comment

- The project is evading NEPA requirements by not considering the cumulative impacts (including economic impacts on county with decreasing tax base) of both the Pāhala and Nā‘ālehu projects. (Comment 1)
- The project is evading NEPA and crosscutting environmental review requirements by not considering the cumulative impact of both the Pāhala and Nā‘ālehu projects. (Comment 2)
- The failure to consider aggregated and cumulative effects of the Pāhala and Nā‘ālehu projects is legally unacceptable. These two projects should be analyzed in a single impact statement because of the connected nature and possible cumulative impacts of the projects. (Comment 4)
- The Pāhala and Nā‘ālehu projects should be considered together. (Comment 16)
- The cumulative impacts of the Pāhala and Nā‘ālehu projects need to be considered together in one EIS. (Comment 23a)
- The cumulative impacts of the Pāhala and Nā‘ālehu WWTPs need to be considered. (Comment 27)
- The County and EPA have avoided consideration of the impacts of the Nā‘ālehu Project on the Pāhala WWTP. (Comment 43)

### Response

The community of Nā‘ālehu is located approximately 11 miles from Pāhala. As stated in the Draft EA Section 4 (Cumulative Effects), “due to its distance from Pāhala, the effects of [the Nā‘ālehu Project] are not expected to have a significant cause-and-effect relationship with the direct and indirect effects of the Proposed Action.” The Nā‘ālehu Project is undergoing separate community outreach and environmental review processes that have not yet been completed and therefore very little information regarding the impacts of that project is publicly available. However, information has been added to the Final EA Section 4 relating to the potential for cumulative effects between this project and similar construction projects within the Ka‘ū district. Please refer to Section 2.2.5 (NEPA Procedures) of this Appendix for a discussion of why an EA was prepared rather than an EIS for the Proposed Action. The Nā‘ālehu Project is not the subject of this EA.

### **2.2.4 Federal and State Consultations**

#### **Section 7, Endangered Species Act (ESA)**

##### Comment

- EPA has failed to comply with the Endangered Species Act (subject of attached legal documents). (Comment 4)
- The Project is in violation of the ESA and is causing concrete harm to the citizens of Hawai‘i. (Comment 14)
- The Project is in violation of environmental statutes and regulations including the Endangered Species Act. (Comment 14)
- COHDEM and its contractors are avoiding Section 7 consultation under the ESA for the Pāhala project. (Comment 57)

##### Response

The EPA has fulfilled its consultation requirements under Section 7 of the Endangered Species Act. A biological field survey was performed in August 2018 for the proposed wastewater collection system and the preferred site (Site 7) for the wastewater treatment and disposal facility. The field study did not identify any species of plants or wildlife that are currently listed or proposed for listing as threatened or endangered species under Federal or State of Hawai‘i laws, and determined that Federally delineated Critical Habitat is not present in the Pāhala area. EPA initiated informal consultation with the U.S. Fish and Wildlife Service (USFWS) by letter dated December 21, 2018. The EPA received concurrence from the USFWS on February 15, 2019 that the project is not likely to adversely affect federally listed threatened or endangered species. A full discussion of the Section 7 consultation efforts and actions is included in the Final EA Sections 3.12 (Flora), 3.13 (Fauna), and 5.6 (Endangered Species Act).

#### **Section 106, National Historic Preservation Act (NHPA)**

##### Comment

- The NHPA Section 106 consultation for the Pāhala project is not valid because the Nā‘ālehu project was not also considered. The consultation was also done hastily and without proper publication of notice. (Comment 65)
- The federal Section 106 and the Cultural Assessment of the Draft EA are inadequate. (Comment 40)
- Local Hawaiian groups and individuals were not pre-consulted before the Section 106. (Comment 65)

- EPA failed to reach out to local Hawaiian organizations. The following should be consulted (list of suggested affected organizations attached). (Comment 7)

#### Response

On March 8, 2018, the EPA notified all Native Hawaiian Organizations (NHOs) in the Pāhala area that the County had been authorized to act in EPA’s behalf when initiating consultation under 54 U.S.C. § 300101 and 36 CFR §800.2(c)4 for the Pāhala Large Capacity Cesspool Replacement Project. The County conducted consultation outreach to NHOs by directly contacting the federally recognized Native Hawaiian organizations listed in the Draft EA Section 10 (Consulted Parties). As stated in the Draft EA Section 3.15 (Archeological and Cultural Resources), consultation letters were delivered to invite comments from organizations that may attach religious or cultural significance to properties affected by the Proposed Action. The selection of NHOs for this outreach was developed using the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization Notification List (Updated December 4, 2017). Letters requesting comments under Section 106 Consultation (54 U.S.C. § 32706) were sent to a total of 14 NHOs on March 29, 2018. No responses were submitted to the County.

On September 26, 2018, a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers. The public notice was to advertise the October 10, 2018 public information meeting that was to be conducted by the County in Pāhala at the Ka‘ū Gym Multi-Purpose Conference Room to discuss the Draft EA. The notice stated the second part of the meeting would address Section 106 of the National Historic Preservation Act of 1966, as amended (2006). It was meant to involve consultation with NHOs and the Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, and cultural religious attachment to the proposed project area. A Section 106 sign-in sheet was provided to those wishing to provide comments. No comments were made during the October 10, 2018 public information meeting. This information is added to the Final EA Section 7 (Public Participation).

As explained in the Final EA, EPA has concluded Section 106 consultation with a determination of “no historic properties affected” by the Preferred Alternative. This information is updated in the Final EA Sections 3.15 and 5.14 (National Historic Preservation Act).

The area of potential effect for the Pāhala LCC Replacement Project does not extend to Nā‘ālehu, which is approximately 11 miles from Pāhala, meaning that there is no potential for the Pāhala LCC Replacement Project to impact historic properties in Nā‘ālehu. The Nā‘ālehu Project would go through a separate consultation process for historic properties in accordance with state requirements. Additional explanation for why these projects are considered separately is included in Section 2.2.2 (Scope of the Proposed Action) of this Appendix.

Please see Section 2.1.5 (Archeological and Cultural Resources) of this Appendix for further details on the Section 106 consultation for the Pāhala LCC Replacement Project. The Final EA Sections 3.15 and 5.14 have been updated to include additional information on the NHPA Section 106 Consultation process.

#### **Other Agency Coordination**

##### Comment

- The Hawai‘i Department of Education (HIDOE) requests consultation and coordination with the Facilities Development Branch, Public Works as early as possible to ensure a timely connection to the new collection system and closure of the on-site septic system. (Comment 72)

- The HIDOE requests consultation and coordination with the school and the HIDOE Transportation Services Branch Manager to minimize construction and traffic impacts to the school such as noise, fugitive dust and HIDOE transportation of students. (Comment 72)

#### Response

The Ka‘ū High and Pāhala Elementary School, including the Ka‘ū District Gym and Shelter, would become accessible to the proposed County sewer system with the installation of two new laterals at the property line on Hala Street and Kamani Street. While typically only a single lateral is provided for a lot, the additional lateral on Hala Street is being installed to accommodate the project and create a gravity flow connection. This information is included in the Final EA Section 2.3.2 (Construct New Wastewater Collection System). Impacts and mitigation measures for addressing construction-related dust, traffic, and noise are addressed in the Draft EA Sections 3.14 (Air Quality), 3.17 (Traffic), and 3.18 (Noise). The County would provide information about the construction schedule for the treatment and disposal facility and the collection system to the Facilities Development Branch Public Works Administrator on request. Further, the County would coordinate with the HIDOE Student Transportation Services Branch Manager and the School in order to minimize construction-related impacts to student transportation services. Please refer to the County response to Comment 72 for further information.

#### Comment

- I request consulting party status under NEPA and Hawai‘i Environmental Policy Act (HEPA) and all cross-cutting statutes. (Comment 4)
- I was not allowed to be a consulting party. I could have advised EPA and COH on proper procedures, but was never asked for my opinion or assistance. (Comment 65)

#### Response

A “consulting party” is a defined term specific to the NHPA that does not otherwise have meaning under NEPA. On October 19, 2018, EPA sent a letter to the commenter (Comment 4) indicating that, based on the information provided, the commenter did not meet the criteria for a consulting party under the NHPA. In addition, HRS 343 and HAR 11-200 have no requirements or definitions related to consulted party status for an EA.

All interested members of the public were invited to provide comments on the Draft EA and to attend the public information meeting on October 10, 2018. The public information meeting was conducted by the County in Pāhala at the Ka‘ū Gym Multi-Purpose Conference Room to discuss the Draft EA. This was immediately followed by a second meeting addressing Section 106 of the NHPA. A Section 106 sign-in sheet was provided to those wishing to provide comments.

### **2.2.5 NEPA Procedures**

#### Comment

- The two Ka‘ū WWTP projects are proceeding in violation of NEPA and HEPA. No EIS has been prepared or submitted for publication, and statutory and regulatory procedures for public participation have not been followed. (Subject of forwarded legal documents) (Comment 16)
- All wastewater systems with treatment units in Hawai‘i have had an EIS. The Pāhala project is intentionally evading this process. (Comments 15, 18, 53)
- A combined EIS for the Ka‘ū LCC Closure Project should be provided. (Comment 38)

### Response

EPA determined that an EA is the appropriate evaluation for the proposed Pāhala LCC Replacement Project because this federal action is not expected to significantly affect the quality of the human environment within the meaning of NEPA. It is not accurate that an EIS is prepared for all wastewater systems or wastewater treatment units in Hawai‘i. As described in EPA NEPA implementing regulations, types of actions that normally require the preparation of an EA include “certain grants awarded for special projects authorized by Congress through the Agency’s annual Appropriations Act.” See 40 CFR § 6.205(b). An EIS, on the other hand, is normally prepared for new regional wastewater treatment facilities or water supply systems for a community with a population greater than 100,000 (See 40 CFR § 6.207). As stated in the Draft EA Table 3.1, the total population of Pāhala is 1,341. The Pāhala LCC Replacement Project does meet the definition of a project normally requiring preparation of an EA and does not meet the definition for a project normally requiring preparation of an EIS.

Moreover, as described in the Draft EA and the Preliminary Finding of No Significant Impact (FONSI), the Pāhala LCC Replacement Project is not expected to significantly affect the quality of the human environment. As such, an EA is the appropriate vehicle for environmental review of this project, and no EIS is required.

Additional information concerning applicable public outreach requirements and EPA and County compliance with such requirements is available in Section 2.3.1 (Outreach) of this Appendix, and in Final EA Section 7 (Public Participation). Information concerning the separation of the Nā‘ālehu Project and Pāhala LCC Replacement Projects can be found in Section 2.2.2 (Scope of the Proposed Action) of this Appendix.

HRS § 343-5(a)(9)(A) states that “(a) Except as otherwise provided, an environmental assessment shall be required for actions that: (9) Propose any: (A) Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent...” For further discussion on the appropriateness of an EA for purposes of HRS 343, please refer to the County response to Comment 15.

### Comment

- The EPA and County are making an "irrevocable commitment of resources" to build the Pāhala and Nā‘ālehu plants. (Comment 23a)
- The project has taken "irrevocable siting action" before the environmental review is complete. (Comment 23a)
- The two WWTP projects in Ka‘ū are costing Hawai‘i taxpayers at least \$23,340,000 because the meter is now running and COHDEM has their contracts already in place. (Comment 52)

### Response

Neither EPA nor the County has made an irrevocable commitment of resources to the Pāhala LCC Replacement Project other than those required for planning and review of the project. As explained in both the Draft and Final EA, multiple sites and treatment technologies were evaluated for the Proposed Action, and a secondary wastewater treatment and land disposal system was deemed to satisfy the purpose and need for the Proposed Action (i.e., to close the LCCs in compliance with the SDWA by providing an alternate means of wastewater disposal). A Preliminary Engineering Report was prepared in order to facilitate both a comparison of different wastewater treatment systems and a discussion of site selection considerations. Property has not yet been acquired for the project, however, and final design of the facility has not been completed.



As such, there has been no irrevocable siting action or commitment of resources associated with the project.

Additional information on the County’s commitment of resources to this project is included in the County response to Comment 23a.

## **2.3 Public Involvement and Outreach**

Responses to comments regarding public involvement and outreach have been arranged into the following categories:

- Outreach
- Accessing the Draft EA
- Public Information Meeting Comments
- Nā’ālehu - Pāhala Large Capacity Cesspool (LCC) Conversion Project – 2007 Final EA Comments
- Public Agencies

### **2.3.1 Outreach**

#### Comment

- The community is concerned about the condemnation of property. (Comment 67)

#### Response

The Preferred Alternative wastewater treatment and disposal facility site (Site 7) is currently owned by B. P. Bishop Estate Trustees (commonly known as Kamehameha Schools). Kamehameha Schools has agreed to transfer a portion of the property for the purpose of building the wastewater treatment and disposal facility, and legally it can transfer the property to the County through a condemnation proceeding. Thus, while the Preferred Alternative would involve condemnation of property, it would only be used to acquire Site 7. The County intends to purchase easements necessary to close the LCCs and construct the collection system. Apart from this specific property, the Preferred Alternative is not anticipated to result in the condemnation of additional private property.

#### Comment

- The COHDEM refuses to provide Pāhala meeting records (attendees, agenda, outcomes) or Pāhala environmental review records (except the PER and Draft EA) to the local libraries or online. (Comment 23a)

#### Response

EPA has fulfilled NEPA requirements for outreach and document availability/review by making the Draft EA available to the public for review and comment. The Draft EA Section 7 (Public Participation) included summaries of the talk story sessions and outcomes of these meetings. In addition, though not required to do so, EPA has made key documents related to the project continuously available through its website (<https://www.epa.gov/uic/proposed-pahala-community-large-capacity-cesspool-replacement-project-draft-environmental>). Furthermore, there is no requirement to publish notices of public meetings in the Office of Environmental Quality Control (OEQC) *The Environmental Notice*. OEQC may publish such notices on a space available basis. Finally, all project-related documents that have been released to any person under the Freedom of Information Act (FOIA) are available through the centralized FOIA Online system.

Comment

- Resident Edward Andrade should have been consulted as he was the manager of the C. Brewer Sewage system for years. (Comment 41)

Response

All members of the Pāhala community were welcome to attend the five talk story sessions held in December 2017 prior to the release of the Draft EA; to provide comments on the Draft EA; and to attend the October 10, 2018 public information meeting after the release of the Draft EA concerning the project. As a member of the public, Mr. Andrade has provided comments on the Draft EA which are addressed in this Appendix.

Comment

- The entire town was not notified about the three information meetings. (Comment 33)
- There was no disclosure of the proposed project to the residents of Pāhala. (Comment 40)
- There was no disclosure or consultation with the residents of Pāhala. Poor communication resulted in low turnout for all the meetings. (Comment 41)
- I own property in Pāhala, but do not reside there, and would like to be kept informed about the Project. (Comment 59)
- The county is fast tracking the project without input from the community. (Comment 41)
- Communication with residents was not done properly and with respect, so not everyone was informed about meetings. A lot of older people do not understand what is going on. (Comment 42)
- The County failed to thoroughly inform all Pāhala residents who will be affected by this system. (Comment 55)
- The community needs more information about the project. Information was presented poorly in the community meetings. (Comment 63)
- More input by the county on how this project is going to be handled fairly to benefit the community. (Comment 63)
- The Pāhala DEA notice failed to include the true purpose of project, which is to place a secondary sewage treatment plant with four open sewage lagoons in remote Ka‘ū. (Comment 53)
- Residents were not given sufficient time to address concerns about the EA. (Comment 40)

Response

NEPA requires agencies to use “appropriate communication procedures to ensure meaningful public participation throughout the NEPA process,” and to “make reasonable efforts to involve potentially affected communities where the proposed action is expected to have environmental impacts.” See 40 CFR § 6.203(a)(5). For an EA, EPA’s NEPA regulations require that the EA and Preliminary FONSI be made available for review and comment at least thirty calendar days before making a decision on whether, and how, to proceed with a proposed action.

As described below, EPA has complied with these public participation requirements and guidelines throughout the scoping process and development of the Draft EA and Final EA. The

Draft EA Section 7 (Public Participation) identifies the community public outreach efforts the County conducted to solicit input while preparing the Draft EA. Prior to the issuance of the Draft EA, the County held five talk story sessions in December 2017 to solicit community input on reactions and perceived effects of the proposed project. Notice about the talk stories was provided to the Pāhala community through several means: direct mailing to properties currently connected to the LCCs, fliers were left at properties which are not currently connected to the LCCs but would have access to the proposed sewer (‘newly accessible properties’), fliers were provided to organizational leaders and posted in public venues in Pāhala, and several online announcements were made.

After collecting information on the anticipated scope and impacts of the proposed project, a Draft EA was prepared and published in *The Environmental Notice* issued by OEQC on September 23, 2018. The Draft EA was made available through the OEQC website, as well as through EPA’s website, for public review and comment. EPA and the County initially solicited written comments on the Draft EA during the 30-day period from September 23 - October 23, 2018. In response to a request for extension, EPA and the County extended the public comment period for the Draft EA to December 10, 2018.

The Draft EA was made available through the following public notices and methods of outreach:

- The EPA provided notice of the Draft EA on their website (<https://www.epa.gov/uic/proposed-pahala-community-large-capacity-cesspool-replacement-project-draft-environmental>);
- Notice of the publication of the Draft EA was published in *West Hawaii Today* and the *Hawaii Tribune Herald* on September 26, 2018.
- A public notice was published in the October 1, 2018 print and online editions of the Ka‘ū Calendar and made available on the Ka‘ū News Briefs web site <http://kaunewsbriefs.blogspot.com>;
- The Ka‘ū Calendar News Brief included an article on October 9, 10, and 11, 2018 with mention of an upcoming meeting (October 10, 2018 public information meeting); and
- Two notices for the Draft EA were published in *The Environmental Notice*:
  - September 23, 2018 – notice for the statutory 30-day public review and comment period for the Draft EA; and
  - November 8, 2018 – notice for republishing the Draft EA and extension of the public comment period for 30 days.
- Fliers were posted in public venues such as the community shopping center, realtor office, grocery store, library, and the Pāhala Community Center.
- Letters were mailed on September 10, 2018 containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 public information meeting to all property owners on record adjacent to the proposed collection system.

After the publication and distribution of the Draft EA, a public information meeting was held on Wednesday, October 10, 2018 at the Ka‘ū Gym Multi-Purpose Conference Room. The County provided a presentation and display boards in an open-house format prior to the meeting to facilitate public understanding of the proposed project, and meeting facilitators were available to answer technical questions concerning the project and offer clarification where necessary.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 public information meeting were mailed to all property

owners on record adjacent to the proposed collection system. This direct mailout included an invitation from DEM to workshops conducted prior to the October 10 public information meeting. The workshop for owners served by C. Brewer lines was held on October 8, and the mailout for this meeting also included any non-owners currently receiving a wastewater bill. The workshop for owners of newly accessible properties was convened on October 9. In addition to the direct mailout, online announcements for the October 8 and 9 workshops were available on the Ka‘ū News Briefs website.

A summary of this public involvement and outreach following the issuance of the Draft EA is included in the Final EA Section 7 (Public Participation). These efforts for public outreach and involvement exceeded NEPA outreach requirements.

For responses to comments on outreach related specifically to the HEPA HRS 343 process, please refer to the County’s individual responses to the above comments.

As explained at various points in the Draft EA, including in Draft EA Section 1 (Summary), and in the coversheet accompanying the Draft EA published in *The Environmental Notice*, the Proposed Action is to construct “four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen and an adjacent disinfection system to remove pathogens and four slow-rate land treatment basins for disposal of the treated effluent.”

#### Comment

- Why were residents who are not on the LCC system excluded from the decision-making process prior to December 2017? (Comment 55)

#### Response

On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā‘ālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meeting, an informational handout prepared by the County’s Wastewater Division provided a brief history of the project documenting that, in 2004, Mayor Kim’s office used a ballot system to get input from property owners regarding different wastewater treatment/disposal alternatives for those properties connected to the LCCs who would no longer be served by the C. Brewer system after LCC closure. As reported in the Draft EA Section 2.1.4 (History of Wastewater Management in Pāhala), 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handout indicated Mayor Kim’s office advised the property owners the County would move forward with a new system for Nā‘ālehu and Pāhala on November 5, 2004. Additionally, the handout stated public meetings were held in both Nā‘ālehu and Pāhala in November 2006 to discuss the wastewater system alternatives. The handout included that adequate land for the treatment and disposal system had not been identified in Pāhala. The Final EA Section 2.1.4 (History of Wastewater Management in Pāhala) has been updated with this information.

Subsequent to that, community outreach activities in the form of five talk story sessions took place in 2017 for the current Pāhala LCC Replacement Project and contributed to the development of the Draft EA. The community outreach program for the Pāhala LCC Replacement Project, as stated in the Draft EA Section 7 (Public Participation), began when the County held these five talk story sessions which were open to all residents and members of the public. This information is repeated in the Final EA.

### **2.3.2 Accessing the Draft EA**

#### Comment

- I had difficulties downloading the Draft EA. (Comments 1, 2)
- I was not provided a copy of the EA despite having requested consulting party status. (Comment 1)
- The Notice for the Pāhala DEA was sent to the wrong address. (Comment 3)

#### Response

The commenter responsible for comments 1, 2, and 3 received a copy of the Draft EA via U.S. Postal Service certified mail on or about September 27, 2018. The comment period ended December 10, 2018, giving the commenter ample time to provide comments on the Draft EA. Efforts to distribute the Draft EA for public review and comment exceeded NEPA outreach requirements that are described in the comment response on pages 25 through 27 above.

#### Comment

- Only one copy of the Draft EA was sent to the Pāhala library, limiting access to the document, especially for the elderly. (Comment 41)

#### Response

The Draft EA was prepared and published in *The Environmental Notice* issued by OEQC on September 23, 2018. The Draft EA was made available through the OEQC website, as well as through EPA’s website, for public review and comment. Upon public request, 11 printed copies of the Draft EA were made available at both the Nā‘ālehu and Pāhala libraries on November 7, 2018. The public comment period ended on December 10, 2018.

These efforts to distribute the Draft EA for public review and comment exceed the NEPA outreach requirements. This information is included in the Final EA Section 7 (Public Participation).

#### Comment

- There was no physical copy of the Draft EA available at the October 10, 2018 meeting. (Comment 18)

#### Response

Federal NEPA regulations do not require a project proponent to hold a public meeting on a Draft EA, nor do they require hard copies of a Draft EA be available at a public meeting. The October 10, 2018 public information meeting included a presentation and display boards to facilitate public understanding of the project. The Draft EA, which is a 300-page-plus document, was made available online and in the Pāhala and Nā‘ālehu public libraries in advance of the public information meeting for any person to review, copy, or download. In response to a request from a member of the community, additional copies of the document were made available at public libraries as described in the response to the previous comment.

### **2.3.3 Public Information Meeting**

#### Comment

- Oral comments should be collected at public meetings. Surely someone can take oral comments and make a transcription as OECQ has done? (Comments 9, 16)

- The written commenting process used during public meetings is not adequate for people with limited English. (Comment 10)
- Increments of project, if any, should be presented. What is presented is not complete. (in reference to the October 10, 2018 meeting). (Comment 62)
- Future subdivisions should be included in presentation (in reference to the October 10, 2018 meeting). (Comment 62)

#### Response

Unlike the process for preparing an EIS, there is no requirement under EPA’s NEPA regulations to hold public meetings concerning an EA or Proposed FONSI. As such, agency officials are not required to collect and respond to oral comments on a Draft EA. Despite not being required, the County held a public information meeting on the Pāhala LCC Replacement Project during the comment period for the Draft EA in order to maximize the public’s awareness of the proposal.

The Draft EA public information meeting included a presentation and display boards that showed the entire project being considered under the Proposed Action. Though the Pāhala LCC Replacement Project would be built in a manner consistent with good engineering practices so that it would not preclude expansion to treat additional flow associated with residences being added to the collection system, there are no current plans to do so. The Draft EA Section 6.2.2 (Ka‘ū Community Development Plan) discussed the Ka‘ū Community Development Plan and included a description of Policy 120, which is stated as “Extend the primary wastewater collection lines in Pāhala and Nā‘ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems.” Future subdivisions would be accommodated, as capacity allows, on a first-come, first-served basis. This information has been added to the Final EA.

Meeting facilitators verbally explained the Proposed Action and were available to answer technical questions concerning the project and its increments. As these meetings were not transcribed for the purpose of responding to oral comments, meeting facilitators made clear that persons seeking a formal response from the agencies to their comments should submit comments in writing to the County or EPA. The County provided staff at the October 10, 2018, public information meeting to personally assist commenters in preparing written comments, including those with limited English skills and those who preferred to dictate written comments instead of preparing the written comments themselves.

#### Comment

- The make-up of Pāhala is majority immigrants, where English is a second language. These residents do not fully understand the details of the project and legal jargon, so have not attended the community meetings. (Comment 56)

#### Response

The Draft EA Section 5.7 (Environmental Justice Executive Order 12898) indicated that Pāhala has a higher proportion of minority groups as compared to the County. The American Community Survey Data for 2012-2016 estimate that the majority of Pāhala residents (58.8 percent) speak only English at home, and that an additional 18.2 percent speak English “very well.”<sup>5</sup> All notices and public outreach materials prepared and distributed for the Pāhala LCC Replacement Project

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<sup>5</sup> U.S. Census Bureau, 2012-2016 American Community Survey. Table S1601 (Language Spoken at Home). U.S. Census Bureau’s American Community Survey Office, 2017. Web. October 16, 2019.

(see Section 2.3.1 (Outreach) of this Appendix for more information on outreach efforts) were developed to be as easily readable and understandable by the general public as possible.

On October 10, 2018, a public information meeting was conducted by the County in the Pāhala at the Ka‘ū Gym Multi-Purpose Conference Room to discuss the Draft EA. During this meeting, the County identified community volunteers attending the meeting who were proficient in Hawaiian, Tagalog, and English to assist anyone who identified as needing assistance. The OEQC rules have no provision for receiving oral comments. However, the facilitator at that meeting offered assistance in putting any oral comments attendees may wish to offer into writing. This information has been included in the Final EA.

### **2.3.4 Nā‘ālehu and Pāhala LCC Conversion Project – 2007 Final EA**

#### Comment

- The 2007 Nā‘ālehu and Pāhala Villages Large Capacity Cesspool Conversion Project called for the use of septic tanks for wastewater treatment. The county switched the plan from septic tanks to a lagoon system without public review. (Comment 30)
- Ballots were only sent to those homeowners that were connected to the C. Brewer system, not the whole community (in reference to COM 0293.004 2004-2006). (Comment 61)

#### Response

The Proposed Action described in the Pāhala LCC Replacement Project Draft EA was developed in response to new information and changed circumstances since the 2007 proposal that cast doubt on the viability of the proposal included in the 2007 Final EA.

The Draft EA Section 2.9 (Relationship to 2007 Final Environmental Assessment) describes the reasons for not implementing the project described in the 2007 Nā‘ālehu and Pāhala Large Capacity Cesspool (LCC) Conversion project Final EA. Specifically, after the County published the Final EA in 2007, it performed additional studies and evaluation of the proposed LCC-to-septic conversion project and eventually concluded that the proposed system would not be feasible, and likely would not meet regulatory requirements for a new wastewater treatment/disposal system. As stated in the Draft EA Section 2.8.2(a), based on current design criteria and current flow projections, an approximately 800,000-gallon community septic tank would be necessary to provide the extended detention times needed to optimize treatment performance, to avoid the need for frequent septage pumping, and to account for peak flow rates. A community septic tank of this size would require pumping on a 3-year interval. Septic tanks produce hydrogen sulfide, reduced sulfur compounds, and other odorous gases; a community septic tank would concentrate these emissions to a single point source, requiring treatment with a dual-stage scrubber to avoid nuisance odor conditions. Therefore, use of a community septic tank is not considered to be feasible. In addition, Draft EA, Appendix B (Preliminary Engineering Report), Section 7.5.1 states that the use of a community septic tank would require the Department of Health to issue a variance to HAR § 11-62, which requires WWTPs with design capacities greater than 100,000 gallons per day (gpd) to produce effluent containing less than 30 mg/L of both BOD<sub>5</sub> [5-day biochemical oxygen demand] and TSS [Total Suspended Solids] – septic tanks are not able to produce effluent of this quality.

On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā‘ālehu and Pāhala LCC Conversion project. As part of the meeting, an informational handout prepared by the County's Wastewater Division provided a brief history of the project documenting that, in 2004, Mayor Kim's office used a ballot system to get input from property owners regarding different wastewater treatment/disposal alternatives for those residents who would no longer be served by the C. Brewer system after LCC closure.

As reported in the Draft Section 2.1.4 (History of Wastewater Management in Pāhala), 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handout indicated Mayor Kim's office advised the property owners the County would move forward with new systems for Nā‘ālehu and Pāhala on November 5, 2004. Additionally, the handout stated public meetings were held in both Nā‘ālehu and Pāhala in November of 2006 to discuss the wastewater system alternatives. The handout included that adequate land for the treatment and disposal system had not been identified in Pāhala. This information is included in the Final EA Section 2.1.4.

The Pāhala LCC Replacement Project Draft EA was made available online and in public libraries in Nā‘ālehu and Pāhala beginning on September 23, 2018. The County and EPA solicited input on the Proposed Action via the public comment period that lasted from September 23 to December 10, 2018. Information concerning the decision to abandon the 2007 proposal has been added to the Final EA Section 2.9.

### **2.3.5 State and Local Agencies**

#### Comment

- The Department of Hawaiian Homelands acknowledges receiving the request for comments. After reviewing materials submitted, due to the project's lack of proximity to Hawaiian Home Lands anticipates no impacts to our lands or beneficiaries. We encourage agencies to consult with Hawaiian Homestead community associations when preparing EAs. Dated 9/27/2018. (Comment 35)
- The County of Hawai‘i Police Department has reviewed the draft EA and does not have any additional comments or concerns at this time. Dated 10/2/2018. (Comment 36)
- The Hawai‘i Department of Land and Natural Resources (Engineering Division, Division of Forestry and Wildlife, and Land Division) has reviewed the Draft EA for the Pāhala LCC Replacement Project and has no comments. Dated 10/22/2018. (Comment 77)
- The Hawai‘i Department of Land and Natural Resources (Division of Forestry and Wildlife and Land Division) has reviewed the Draft EA (generated in response to the extension of public comment period) for the Pāhala LCC Replacement Project and has no comments. Dated 12/7/2018. (Comment 71)

#### Response

EPA acknowledges receipt of letters from the above organizations and appreciates their review of the Proposed Action and Draft EA.

Pre-assessment consultation letters were sent to 14 Native Hawaiian Organizations, as stated in the Draft EA Section 3.15.1 (Archeological Resources – Existing Conditions). These organizations included the Pi‘ihonua Hawaiian Homestead Community Association. No responses were received from any Native Hawaiian Organization. This information is updated in the Final EA.

### **2.4 State and Local Processes**

Responses to comments regarding compliance with state and local processes have been arranged into the following categories:

- State of Hawai‘i Office of Planning
- Hawai‘i Environmental Policy Act (HEPA), HRS Chapter 343



- Hawai‘i Department of Business, Economic Development and Tourism, Land Use Commission (LUC)
- Ka‘ū Community Development Plan (CDP)

#### **2.4.1 State of Hawai‘i Office of Planning**

##### Comment

- The State of Hawai‘i Office of Planning indicates that the Final EA should include a discussion of the project's ability to meet all parts of the Hawai‘i State Planning Act (HRS Chapter 226), and examine the project's consistency with these statutes, or clarify where it is in conflict. A discussion of Priority Guidelines, or a determination that these guidelines are not applicable to the proposed action, should be included in an examination of Part III statutes. (Comment 32)
- The State of Hawai‘i Office of Planning requests that the Final EA should include a discussion of the project's compatibility with statewide sustainability goals and principles of sustainability (HRS § 226-108). (Comment 32)
- The State of Hawai‘i Office of Planning indicates that the option of a District Boundary Amendment could be considered as a land use approval option (could be used instead of a Special Permit) and discussed in the EA. (Comment 32)

##### Response

The State of Hawai‘i Office of Planning received a pre-assessment consultation letter on March 15, 2018 and provided a formal response on April 8, 2018 which included comments on the Proposed Action. These initial comments were incorporated into the project planning and the development of the Draft EA as appropriate. In addition to the pre-consultation response, the State of Hawai‘i Office of Planning provided comments on the Draft EA (those described above) that requested an expansion of the discussion in the Draft EA Section 6 (Plans, Policies, and Controls) to include the Proposed Action's ability to meet all parts of the Hawai‘i State Planning Act. Information and a brief discussion of sustainability principles from HRS § 226-108 have been added to the Final EA Table 6.1 in addition to information on other applicable sections of Part III of HRS § 226 as requested by the Office of Planning.

The State of Hawai‘i Office of Planning's comment concerning the option of a District Boundary Amendment is noted.

#### **2.4.2 Hawai‘i Environmental Policy Act (HEPA)**

##### Comment

- The project is in violation of HEPA and UIPA for disclosure of the August 15, 2018 environmental assessment records, and denial of requested records. (Comment 1)
- The COH/EPA/Contractors should fully explain why two new-build secondary sewage plants 11 miles apart in remote, rural Ka‘ū would not require an EISPN Act 172-12 notice. (Comment 2)
- The Pāhala and Nā‘ālehu projects are in violation of EIS requirements as established by HRS 343/ HAR 11-200 and 11-201. (Comment 13)
- The Pāhala and Nā‘ālehu projects should be considered together under HEPA 343. (Comment 16)

- The project is not in compliance with HRS 343 because of the failure to prepare a HEPA EIS, the methods of public outreach and participation, lack of availability of documents, and lack of TEN public notice for the two “talkstory” sessions. (Comment 23a)
- The Pāhala Draft EA notice failed to include the 9A trigger; the project should trigger HEPA 343 Sec5(a)(9). (Comments 16, 53, 58)
- Demoruelle v. Beck evidence of misconduct in following NEPA/HEPA. (Comment 75)

#### Response

The above-listed comments relate to compliance with the Hawai’i Environmental Policy Act, otherwise known as Chapter 343 of Hawai’i Revised Statutes or HRS 343. The Final EA Section 6 (Plans, Policies and Controls) includes discussion of state and local requirements applicable to this project. Comments related specifically to compliance with state requirements including HRS 343 are addressed by the County in its separate responses to the above comments.

For discussion of compliance with NEPA procedures, please see Section 2.2 (NEPA Processes) of this Appendix. Discussion of public outreach and notice efforts is included in Section 2.3 (Public Involvement and Outreach) of this Appendix and in the Final EA Section 7 (Public Participation).

Comments regarding the Nā’ālehu Large Capacity Cesspools Closure Project are outside the scope of the Proposed Action. The Nā’ālehu Large Capacity Cesspools Closure Project is currently undergoing a separate environmental review, coordinated by the County of Hawai’i Department of Environmental Management, in accordance with HRS 343 requirements.

#### **2.4.3 Hawai’i Department of Business, Economic Development and Tourism, Land Use Commission (LUC)**

##### Comment

- Describing the project as 14.9 acres is an attempt to evade LUC scrutiny, as LUC review is required for projects of 15 acres or more. (Comments 1, 6, 23a, 40 and 41)
- The project covered a minimum 667,500 sq. ft. [15.3 acres] plus utility access must be considered as part of the project impacts no matter who will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres. (Comment 23a)
- The LUC should be given a chance to review the project even if the property was not within their range. (Comment 42)

##### Response

Because the Proposed Action is located within an Agricultural District, under Hawai’i law a Special Permit is needed. As described in the Draft EA Sections 3.10.2 (Agricultural Lands – Impacts and Mitigation Measures) and 6.1.3 (State Land Use District), “under Chapter 205, HRS, use of agricultural lands for non-agricultural purposes greater than 15.0 acres requires approval of a Special Permit by the Land Use Commission.” The Final EA clarifies that, for the Preferred Alternative at Site 7, the County would apply for a Special Permit which requires approval by the County Planning Commission. For projects that would use agricultural lands for non-agricultural purposes greater than 15.0 acres, the County Planning Commission would then submit their decision to the State of Hawai’i Land Use Commission for their approval.

As stated in the Draft EA Section 3.10.2(a), “construction of the wastewater treatment and disposal facility at Site 7 would require removal of approximately 14.9 acres of macadamia nut trees.” The 14.9-acre site has been selected to provide the necessary land area for the facilities needed to treat the incoming flows and to dispose the treated effluent from the treatment process.

The proposed project site minimizes the use of the adjacent lands which contain a commercial macadamia orchard. A larger project site is not required. Please refer to the County response to Comment 23a for more information.

As stated in the Draft EA Section 2.10.3 (Hawai‘i Revised Statutes (HRS) Chapter 205 Considerations), within the agricultural district, public, private, and quasi-public utility lines are a permitted use. The area of the Proposed Action located within the ROWs and other easements within the residential areas of Pāhala is considered a permitted use within agricultural land and therefore does not add to the acreage of agricultural lands for purposes of the Special Permit for the LUC review. The County would therefore seek a Special Permit from the County Planning Commission. This information is repeated in the Final EA Section 2.10.3.

No attempt has been made to avoid review by the LUC. The County sent the LUC a pre-consultation letter for this project dated March 15, 2018 providing notice of the preparation of a Draft EA and inviting comments on the Proposed Action as part of the pre-assessment consultation process. No response was received. Also, the Department of Business, Economic Development and Tourism was directly notified (by mail) of the availability of the Draft EA.

#### **2.4.4 Ka‘ū Community Development Plan (CDP)**

##### Comment

- The Pāhala Draft EA shows no respect for the Ka‘ū CDP, specifically Policy 90, and does not follow its statutes. (Comments 46, 50, 65)

##### Response

Comments related to compliance with state and local requirements are addressed by the County in a separate response to the above comments. The Draft EA included a detailed discussion of the Ka‘ū Community Development Plan in Section 6.2.2 (Ka‘ū Community Development Plan). That section has been updated in the Final EA.

### **2.5 Project Location and Design**

Responses to comments regarding the location and design of the proposed project have been arranged into the following categories:

- Proximity to Schools
- Location of preferred Alternative
- Extent of Collection System
- Treatment Alternatives
- Technical Design

#### **2.5.1 Proximity to Schools**

##### Comment

- How far away will the Plant be from the Pāhala schools? (Comment 23a)
- I am very concerned about the short distance between the proposed site and the school. (Comment 26)

##### Response

As stated in the Draft EA Section 4 (Cumulative Effects), the Ka‘ū High School and Pāhala Elementary School are approximately one-half mile north of the wastewater treatment and

disposal facility at Site 7 under the Preferred Alternative. The facility would be separated from the schools by a macadamia nut orchard, the old Pāhala Sugar Mill maintenance yard, five streets and numerous private residences. The wastewater treatment and disposal facility would be enclosed with a 6-foot-high chain-link fence and posted to prevent public access. EPA does not anticipate that construction and operation of the proposed wastewater treatment and disposal facility would have any direct or indirect impact on the schools (e.g., due to visual, smell, or noise impacts), due to the distance between the proposed facility and the schools. This information has been added to the Final EA Sections 3.14 (Air Quality), 3.18 (Noise), and 3.19 (Visual Characteristics).

The schools currently discharge wastewater to eight (8) DOH-approved septic systems. At the time the septic systems were installed, two new laterals were also installed at the property line on Hala Street and Kamani Street to allow for eventual connection to the new collection system (see Draft EA Section 4.1.1 (Past, Present, and Reasonably Foreseeable Actions)). Upgrading the collection system in front of the school so that these laterals may be connected to the new collection system may result in temporary traffic impacts during construction but these impacts would be mitigated through the establishment of a traffic control plan which would be coordinated with HODOE transportation services (see the Draft EA Section 3.17.2 (Traffic – Impacts and Mitigation Measures)).

Construction of the project would also result in temporary noise impacts for all areas with construction equipment and trenching as described in Draft EA Section 3.18.2. All construction activities would comply with the Community Noise Control provisions of HAR 11-46. Lastly, the Proposed Action could result in short-term impacts to air quality due to construction activities as a result of fugitive dust or exhaust emissions from mobile construction equipment as described in Draft EA Section 3.14.2. A dust control plan would be implemented to include mitigation measures such as watering of active work areas. EPA does not anticipate any long-term impacts to the Kaʻū High School and Pāhala Elementary School as a result of construction activities.

## **2.5.2 Location of Preferred Alternative**

### Comment

- The plant should be sited below/south of the highway. (Comments 23a, 27, 55, 56, 62, 63, 67, 68, 69, 70, 73) – Commenters provided the following rationales for this comment: concern over flooding risk, concern that caves and burial sites may be present at the proposed location, concern about visual and odor impacts, and concern about safety and health.
- I am very upset with this whole idea of where you are intending to put the new plant. (Comment 34)
- The plant should be sited south of the highway and make use of the existing culvert that was installed by the sugar industry. (Comments 31, 33)
- Please move the proposed Pāhala sewage treatment plant to the makai (seaward side) of the highway. The proposed site is too close for comfort and life quality. (Comment 37)
- The site should be relocated below the highway to be further away from the town due to safety, environmental, historical, and aesthetic concerns. (Comment 41)

### Response

The Draft EA Section 2.7 (Development of Site Alternatives and Selection of Preferred Alternative) discussed the alternative sites for construction of a new wastewater treatment and disposal facility. One of the alternatives discussed, Site 9, is located below the highway. This alternative

scored lower than the Preferred Alternative location (Site 7) because it would require construction of additional access roads, a longer distance to available power and potable water, and a longer transmission line due to the further distance from the existing LCCs and collection system infrastructure. Site 9 would require approval by the State of Hawai‘i Department of Transportation. It also scored lower than Site 7 because of presence of and/or proximity to archeological/cultural sites. In addition, it was determined that, depending on the configuration of the wastewater treatment facility and the land application groves, this alternative could require trenching and construction of piping across south flowing branches of the Hi‘onamoa Gulch, classified as a riverine wetland (per the National Wetland Inventory), which occurs within the site. To avoid this potential impact for Site 9 and to minimize costs, the headworks, lagoons, and the subsurface constructed wetlands could be sited in the upper portion of the site (i.e., the area closest to the highway) which would result in other impacts. Further discussion has been added to the Final EA Sections 2.5 (Proposed Action – Site 9 Alternative) and 3.7 (Surface Water).

Two additional parcels located below the highway were identified in the Draft EA as Sites 4 and 5. Site 4 was eliminated from consideration because, among other reasons, it contained an unnamed gulch that would need to be crossed by influent and fire protection lines and, because of the soil type, it was estimated that 200 acres would be needed to accommodate the slow-rate land treatment basins (See Draft EA Section 2.8.1(d) (Other Site Alternatives)). Site 5 was eliminated from consideration for similar reasons, as described in Section 2.8.1(e) of the Draft EA. No other parcels below the highway were identified as potentially suitable for the project.

The location and configuration of the Preferred Alternative (Site 7) were designed to minimize aesthetic impacts of the project. As described in the Draft EA Section 3.19.2 (Visual Considerations and Light Pollution – Impacts and Mitigation Measures), the existing pine trees along Maile Street would continue to obstruct the view of the facility from Maile Street. The facility would be visible from Māmalahoa Highway (State Route 11); however, impacts to the view plane would be mitigated by the planted trees in the disposal groves and by the rise in elevation between the highway and the facility. In addition, as described in the Draft EA Table 6.1, the project “does not include facilities or improvements that would adversely affect public safety of this area of Hawai‘i.” Potential impacts of the project on historic properties are addressed in Section 2.1.5 (Archeological and Cultural Resources) of this Appendix.

### **2.5.3 Extent of Collection System**

#### Comment

- It was my understanding that the reason the sewage system was being expanded beyond what was required by the Feds was because it was part of the CDP. Can you please direct me to the section in the CDP that states this? (Comment 29)
- I really feel that the County of Hawai‘i should concentrate on only people involved with LCC’s first and foremost because of the Federal mandated regulations. We non-LCC are not in violation of any standards of the Federal Regulation’s requestings. (Comment 55)
- The County has decided to expand the new sewage system beyond those homes currently on LCCs, and beyond what is required by the federal government. (Comments 31 and 73)
- There are some homes which will have the sewer line running near their homes but are not part of the original C. Brewer LCC line. The homes across the street and connecting are not part of the LCC line either, so it is perplexing as to why this initial phase of the project is including lines in areas that are not necessary. (Comment 61)

## Response

The Draft EA Section 2.3.2 (Construct New Wastewater Collection System) discusses the construction a new sewer collection system in the Pāhala community to replace and expand upon the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in the Draft EA Section 6.2.1 (Hawaiʻi County General Plan), the current LCC collection system includes lines located the backyard of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from each landowner to enter them, through private property, to inspect, maintain, repair, or replace existing sewer facilities: all activities essential to an efficient, functioning system. As a result, the proposed new collection system would be located primarily within the public street rights-of-way and to close the LCCs, there would be parcels that become "newly accessible" to the collection system. The collection system is not being expanded under the Proposed Action beyond the area needed to close the LCCs. This information is repeated in the Final EA.

The collection system constructed as part of the Proposed Action would be designed to extend to all properties currently served by the LCC system. While the areal extent of the new collection system would mirror the old collection system, certain properties that are not currently served by the LCC system and that are adjacent to, or across the street from, the LCC properties, would become accessible to a sewer when the new collection system is installed. Under County code, properties that become accessible to a sewer are required to connect to sewer unless certain exceptions are met. While the Proposed Action does not include installation of laterals to connect these newly accessible properties to the new collection system, it is nonetheless foreseeable that these properties would be required to connect to the new system. These properties have therefore been included in the scope of the environmental review for this project.

The requirement for accessible properties to connect to sewer is discussed in detail in the Draft EA Section 2.3.2 and the Final EA Section 2.3.2. Comments related to state and local requirements, including the CDP, are addressed in the County's response to Comment 29.

### **2.5.4 Treatment Alternatives**

#### Comment

- If all the County had wanted was compliance with clean-water requirements, and with the least distress to the taxpayer and payer of sewage-system user fees, it probably would have explored alternative means of sewage treatment. Methods such as constructed wetlands generally are less capital and labor intensive than traditional treatment plants. (Comment 5)
- The DEA gives no consideration to any decentralized, more cost-effective project for rural areas such as in Kaʻū. There should be remedial community meetings to consider alternatives, including the original conversion to septic, to close the LCCs. (Comment 23a)
- Mobile sewage treatment systems should be considered to address Hawaiʻi's problem with cesspools. Mobile units could be used when cesspools are at capacity, and they do not require pipelines, which are subject to damage. (Comment 44)
- No alternatives, including micro-sewage projects, have been offered to taxpayers. (Comment 52)
- The sewage flow could easily be handled by one or two small packaged plants, affordably modular to accommodate growth, on a very small footprint of land with no noxious odors. (Comment 66)

- The type of plant to be used should be reconsidered due to the history of flooding from rain, storms, and hurricanes from the slopes of Mauna Loa which would overflow the open sewer reservoir. (Comment 76)

#### Response

The proposed treatment method for the Pāhala LCC Replacement Project consists of an aerated lagoon treatment system with a constructed wetland and disinfection, followed by land application for effluent management. The system is described in detail in the Draft EA Section 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility). In addition to the proposed treatment method, the County and EPA considered numerous treatment alternatives, including septic tank alternatives (see Draft EA Section 2.8.2(a)), alternatives for onsite wastewater systems (see Draft EA Section 2.8.2(b)) and other “effluent management options” (see Draft EA Section 2.8.3). As described in the Draft EA, all these alternatives were removed from consideration due to their lack of feasibility and other concerns as outlined in the Draft EA Section 2.8 (Alternatives Considered but Not Carried Forward).

Specifically, septic tank alternatives were rejected because it was determined that a community septic system large enough to receive the projected flow from the community would not be capable of achieving the effluent quality standards required by HAR § 11-62-23.1 (see Draft EA Section 2.8.2). In addition, individual septic systems for the lots currently served by the LCCs were deemed infeasible because many of the lots in Pāhala are too small to construct individual septic systems (see Draft EA Section 2.8.2).

The commenter referring to micro-sewage may have been referring to individual wastewater systems such as composting toilets which would be too small to meet the purpose and need of the Proposed Action. A discussion of alternative individual systems is available in the Preliminary Engineering Report in Appendix B of the Final EA.

Flood risks associated with the proposed wastewater treatment and disposal system are discussed in Section 2.1.1 (Flood Risk) of this Appendix, and in the Final EA Sections 2.3.1 (Acquire Site 7 and Construct New Secondary Wastewater Treatment and Disposal Facility) and 3.23 (Infrastructure – Drainage System).

### **2.5.5 Technical Design**

#### Comment

- The Brown and Caldwell engineer classified Pāhala wastewater flows (80,000 gallons a day) as municipal. EPA cites small wastewater flows (non-municipal) as under 1 million gallons a day. All consideration of packaged treatment plants were dismissed based on the engineer characterizing the Pāhala wastewater flow as municipal. Since a package plant that would be adequate to close the Pāhala LCCs would cost around \$4 million...this option would be given real consideration as a cost effective alternative. It would also require far less land and fit closer to the existing LCCs. Since packaged plants are modular, capacity could be expanded for future flows by just adding new units. The added cost of electricity and sludge removal would be offset by saving of \$10 million in borrowed SRF funds. (Comment 64)
- The proposed facility is too large. The Pāhala WWTP will be built to handle 380,000 gal/day when the actual flow for a larger population base in the 2007 FEA was 80,000 g/d. Underutilized plants can become a “negative removal efficiency” - meaning what the plant pumped out was more contaminated than what went in. (Comment 5)

- The engineers fail to justify the extremely high Pāhala wastewater flow rates which should have been based on City and County of Honolulu Sewer Standards with an average wastewater flow rate of 320 gal/day per lot. The LCC closure only required disconnecting from around one hundred households, so the flow rate is around 32,00 gal/day. (Comment 66)

#### Response

Per HAR 11-62, wastewater treatment works must be designed in accordance with County standards, or City and County of Honolulu standards if a county does not have design standards. The County of Hawai‘i does not have design standards; therefore, the City and County of Honolulu standards are applicable to the Pāhala LCC Replacement Project. The City and County of Honolulu updated their design standards in July 2017 and the 320-gpd standard is no longer applicable.

Based on these standards, the Pāhala LCC Replacement Project is designed to treat an average dry weather flow of 190,000 gpd including lots which are not in single family residential use or zoning, which is sufficient capacity to allow closure of the LCCs. Additional detail is provided in the Draft EA Appendix B (Preliminary Engineering Report). It should be noted that wastewater flows from a community are highly variable, and peak flow rates from small community wastewater collection systems are typically three to five times higher than the average flow rates. State and County design standards take this variability into account, and application of the standards results in conservatively designed facilities that are protective of human health and the environment under anticipated conditions. Information relating to applicable design standards has been added to the Final EA Section 2.3 (Proposed Action – Site 7 Alternative (Preferred Alternative)).

The wastewater treatment and disposal facility and the collection system would be designed to meet the purpose and need of the Proposed Action. The facility would be built to handle 190,000 gpd (average dry weather), not the full-buildout flow projections of 360,000 gpd associated with expansion to entire community. However, as a matter of good engineering practice, and to the extent practical, the wastewater treatment and disposal facility and collection system would be designed not to preclude expansion to treat future average dry weather flows up to 360,000 gpd should the County or community decide in the future that expansion is necessary in accordance with the requirements established in the Ka‘ū Community Development Plan Policy 120.

The proposed treatment system for the Pāhala LCC Replacement Project includes aerated lagoons that are more energy efficient than conventional activated sludge wastewater treatment processes. The aerated lagoon process is less sensitive to underloading conditions than conventional activated sludge wastewater treatment processes and would provide excellent treatment performance during low flow conditions. The “negative removal efficiency” effect is not applicable to the aerated lagoon technology. The Pāhala LCC Replacement Project does include a constructed wetland treatment system and the proposed land treatment tree groves provide an energy efficient “natural” technology that would use sunlight, vegetation, and soil properties to achieve the desired results.

#### Comment

- The consideration of the use of alternative energy sources (wind, solar, methane) would decrease emissions. Hooking up to HELCO is not looking to the future. Please look beyond the grid for energy. (Comments 31, 73)

#### Response

The 14.9-acre area for the wastewater treatment and disposal facility under the Preferred Alternative (Site 7) minimizes use of the adjacent macadamia nut farm. The Draft EA Figure 2.3



shows the project site as fully utilized by the four lagoons, the four planted groves used for slow-rate land application system, the subsurface flow constructed wetland, and the headworks and operation building. The remaining land area would not be sufficient to accommodate construction of facilities for an alternative energy source.

The Preferred Alternative does not include utilizing alternative energy systems such as photovoltaic solar or wind as a total replacement for connecting to the HELCO grid due to:

- The need for consistent power supply;
- Emergency backup power requirements;
- Up-front capital cost;
- Full utilization of the 14.9-acre proposed site for the treatment and disposal facility;
- Objective to minimize the amount of land area removed from agricultural production; and
- EPA-enforced project implementation schedule deadlines.

Partial augmentation of traditional power utilizing photovoltaic solar panel arrays on the headworks and operations building rooftops, however, is feasible and would be further analyzed during the detailed design phase after loads and demand patterns are better understood. Additional alternative energy systems can be added in the future if prioritized and funded by County Council, and the electrical systems would be designed to accept additional alternative energy input.

Methane gas is generated at wastewater treatment plants using a process called anaerobic digestion. The proposed wastewater treatment and disposal facility would be too small for anaerobic digestion to be economical; the design flow to the Pāhala wastewater treatment and disposal facility would be 190,000 gpd, and anaerobic digestion is only economically attractive for wastewater treatment and disposal facilities that treat at least 5 to 10 million gpd. In addition, the anaerobic digestion process requires primary clarifiers as part of the liquid treatment process, but primary clarifiers tend to be odorous in tropical climates, due to the relatively high wastewater temperatures. The proposed facility would rely on natural treatment systems that require relatively low energy input. Additional detail regarding the preliminary analysis of alternative energy options can be found in the Final EA, Appendix B (Preliminary Engineering Report).

#### Comment

- I am concerned with the placement of the sewer lines near the water lines of Pāhala. Is there some kind of spec sheet that shows how far away the sewer line will be to the water line? (Comment 61)

#### Response

As stated in Draft EA Section 3.22.1(a) (Infrastructure – Water System – Existing Conditions), “the water lines are primarily located along or under the roadways in the area.” The Draft EA Appendix A included a letter from the County of Hawai‘i DWS that stated the following:

“The Department requests that the construction plans show, and the proposed sewer lines be installed with, the proper horizontal and vertical clearances from our existing water system facilities and concrete jacketing at waterline crossings, where necessary, as recommended by the Department’s Water System Standards. In addition, backflow prevention devices must be installed where there are connections to our water system at wastewater processing and treatment facilities.”

The Pāhala LCC Replacement Project would not impact existing water lines in the community. This information was added to the Final EA Section 2.3.2 (Construct New Wastewater Collection System).

## **2.6 Other Comments**

Responses to other comments have been arranged into the following categories:

- Miscellaneous and Other Comments
- Nā‘ālehu Large Capacity Cesspools Closure Project

### **2.6.1 *Miscellaneous and Other Comments***

#### Comment

- A councilmember's name was listed incorrectly in the Draft EA. (Comment 8)

#### Response

Refer to the Final EA Section 10.1 (Pre-Assessment Consultation) for corrected spelling of the councilmembers name.

#### Comment

- The Draft EA incorrectly states that Pāhala is the largest town in Ka‘ū District. (Comment 61)

#### Response

Refer to the Final EA Section 2.1.1 (Pāhala Community) for a correction to the text which has been revised to state “The Ka‘ū district consists of several communities, including the Pāhala community, which has a population of approximately 1,341 persons.”

#### Comment

- The Draft EA list of preparers did not include the outreach subcontractors. (Comments 23a, 27)

#### Response

The public outreach subcontractor did not prepare the EA and therefore no correction the List of Preparers in the Final EA is required.

#### Comment

- What were the agreements made between C. Brewer and the County during the transition of turnover? (Comment 67)

#### Response

The Draft EA Section 2.1.4 (History of Wastewater Management in Pāhala), which described the history of wastewater management in Pāhala, includes the following information: “Around 2006, C. Brewer requested that the County construct and maintain a new and improved community sewer system. A County Council Resolution approved the C. Brewer request. In anticipation of C. Brewer’s dissolution, C. Brewer proposed, and the County agreed, to enter into a formal agreement to not only construct and maintain a new and improved community sewer system but to assume ownership of the existing system including the LCC’s by April 30, 2010.” As part of this agreement, for the majority of Pāhala properties connected to the LCCs, C. Brewer committed to complete the line (called a lateral) between the residences and the property line at the edge of

the public right-of-way adjacent to the new collection system. It was agreed, if the County did not complete its portion of the work by April 30, 2010, the County would assume pending and unfinished obligations to connect the new laterals installed by C. Brewer to the residences and new collection system when complete. Thus, because that date has passed and the County has not completed installation of the new collection system, this project includes connecting these C. Brewer laterals, which may now need to be replaced, or installing private laterals for currently connected properties if authorized by the property owner and approved by County Council. This information has been added to the Final EA Section 2.1.4.

Comment

- Since the Kealakehe WWTP is running so much over budget, why won't the Pāhala project? (Comment 27)

Response

The Kealakehe Aeration Upgrade and Sludge Removal Project is a repair and upgrade project that is outside of the original project scope for construction of that facility; comments regarding the cost of that repair and upgrade are not pertinent to the scope, cost, or impacts of the Proposed Action.

Comment

- A handout was distributed by then County Rep. Guy Enriques to everyone in the community. Why did the county waste money doing an EA regarding the same site? (Comment 41)
- The citizens of Ka‘ū have been significantly harmed by COHDEM and EPA failure to incorporate environmental review from the initial proposal of the WWTP projects in 2012 DEM's CIP 2012-13 Budget. (Comment 23a)
- The Nā‘ālehu/Pāhala 2007 Final EA/FONSI should have been supplemented or withdrawn prior to the publication of the Pāhala Draft EA/AFNSI notice in September 2018. (Comment 4)
- Why hasn't the 2007 Ka‘ū LCC project Final EA/FONSI been withdrawn under HRS? (Comment 27)

Response

In 2007, the County prepared a Final EA for a project to install septic tanks to replace the existing cesspools in order to comply with HRS 343. Before EPA performed its environmental review of the project as required under NEPA, the project was abandoned because it was determined to be infeasible based on further engineering review. Additionally, the parcel considered in the 2007 EA for construction of a septic tank treatment system (TMK 9-06-002:016) is not the same parcel as the Preferred Alternative (Site 7) of the current Pāhala LCC Replacement Project (TMK 9-6-002:018). A discussion of the history of the projects is included in the Final EA Section 2.9 (Relationship to 2007 Final Environmental Assessment).

Comments relating to HRS 343 publication procedures for the project proposed in 2007 are not germane to the Pāhala LCC Replacement Project that is currently the subject of EPA's review under NEPA. As explained in the Draft EA Section 2.9 and in Section 2.3.4 (Nā‘ālehu and Pāhala LCC Conversion Project – 2007 Final EA) of this Appendix, the EPA did not prepare or approve the 2007 County-led environmental review referenced in the comment. Comments related to compliance with publication requirements under HRS 343 are addressed by the County in their responses to the above comments.

## **2.6.2 Nā‘ālehu Large Capacity Cesspools Closure Project**

### Comment

- EPA and CODEM are avoiding NEPA/HEPA, ESA, NHPA, Section 106 and the environmental review for the Nā‘ālehu project. (Comments 1, 34, 43, 57, 65)
- EPA has separated the Ka‘ū LCC closure grant into two separate projects and refused to follow NEPA/ESA procedures that EPA followed for the Pāhala project DEA as for the Nā‘ālehu WWTP work plan. (Comment 4)
- I have concerns about the Nā‘ālehu plant, including its location. (Comment 5)
- Nā‘ālehu plant is sited too close to the school. The Nā‘ālehu DEA has been withheld since April 2017, and no EA has been published, preventing the opportunity for public review and comments. (Comment 23a)
- There was no public participation in the decision to site the Nā‘ālehu WWTP near the elementary school. (Comment 38)
- How can comments be made about the Nā‘ālehu WWTP? We will share this information at the weekly Ka‘ū community meeting about the WWTPs. (Comment 47)
- The Nā‘ālehu project is sited too close to the well, school and in PONC Land. (Comments 43, 47, 48, 52, 75)
- Is the Nā‘ālehu Preliminary Engineering Report available at the libraries? I did not know it had been published because two scheduled meetings about the Nā‘ālehu project have not been held. (Comment 48)
- Did the libraries receive copies of the Preliminary Engineering Report for the Nā‘ālehu sewage treatment plant? (Comment 54)
- EPA and COHDEM transferred funding away from the Nā‘ālehu project to evade NEPA, NHPA-/ESA requirements. (Comment 65)
- The estimated costs for the Nā‘ālehu project are suspicious. The large value of the administrative and legal expenses budget for suggests it may be a slush fund. (Comment 66)
- HI Department of Education requests to be included in the pre-draft assessment consultation and Draft EA for the Nā‘ālehu LCC Replacement Project. (Comment 72)
- COHDEM and its contractors are avoiding Section 7 consultation under the ESA for the Nā‘ālehu project. (Comment 57)

### Response

Comments regarding the Nā‘ālehu Large Capacity Cesspools Closure Project are outside the scope of the Proposed Action. As explained in the Draft EA Section 4.1.2 (Actions Considered but Excluded from Analysis), the Nā‘ālehu Large Capacity Cesspools Closure Project is a separate project from the Pāhala LCC Replacement Project and the two are not expected to result in any cumulative impacts given the considerable distance between the two towns. This is further clarified and supported in the Final EA Section 4 (Cumulative Effects). In addition, neither project is dependent on the other for completion, nor does approval or completion of one project make it more likely the other would be similarly approved or completed. The Nā‘ālehu Large Capacity Cesspools Closure Project is currently undergoing a separate environmental review, coordinated

by the County of Hawai‘i Department of Environmental Management, in accordance with HRS 343 requirements.

## 2.7 Comments Not Related to NEPA

### Comment

- EPA should consider a settlement because the third circuit will be considering the preliminary injunction. I am planning to file a personal injury claim. (Comment 17)
- The County should grandfather in the "newly accessible lots" with functional cesspools and septic tanks. (Comment 31)
- The plaintiff responds to the defendant's Opposition to the Motion for Preliminary Injunction. The Nā‘ālehu wastewater system Draft EA should be immediately released, and the County of Hawai‘i should cease any and all expenditures on consultant and subconsultant contractors and halt all planning and development activities on the Nā‘ālehu and Pāhala WWTP projects. (Subject of forwarded legal documents) (Comment 21)
- The community plans to file multiple lawsuits. (Comment 23a)
- Is there any impact on rapport when there will be endless lawsuits based on violation of NEPA/HEPA for the twin Ka‘ū WWTP projects? (Comment 27)
- Since the Kealakehe WWTP is the “most important” project in Kona, why isn’t the Ka‘ū twin WWTP projects treated as “important”? (Comment 27)
- I did not receive any confirmation that comments were mailed. (Comment 39)
- I am having trouble finding an attorney and no one has attempted to talk to me about the case. (Comment 21)
- We will be suing on this forever! (Comment 22)
- Residents of Pāhala have experienced negative psychological impacts since 2005 or 2007. (Comments 40, 41)
- The judge dismissed the Preliminary Injunction, and the COH Motion to Dismiss. The court case will move forward. (Comment 49)
- You have not addressed the problem of an [APA Hawai‘i Chapter] award for a Ka‘ū CDP that has been totally ignored. The judges who awarded it were misled. (Comment 50)
- I am available as a consultant to produce a Cultural Impact Assessment if the project proceeds to the EIS phase. (Comment 60)
- Will police be present at the public meeting? (Comments 11 and 16)
- The LCC households of Ka‘ū deserve reparations and should not pay for sewer service until the project is completed. (Comment 23a)
- Employee strikes (disputes). (Comment 67)

### Response

These comments are not relevant to the environmental review.

Comment

- A Brown & Caldwell sub-contractor has approached community members seeking personal information about me, which is criminal invasion. I will be contacting the Pele Defense Fund and the FBI. (Comment 19)
- I will not be consulting the Pele Defense Fund. I have been traumatized by the Brown and Caldwell sub-contractor inquiring about me. The County Council will request an audit of this 13 year fiasco or I will take evidence of malfeasance to the FBI. (Comment 20)

Response

These comments are not relevant to the environmental review. EPA has found no indication that illegal conduct has occurred.

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## 3 County of Hawai‘i Response to Comments

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The following is a compilation of all comment letters from agencies, organizations, and others who formally replied with comments to the Draft EA. Note that some of the comments were submitted as a letter and some via e-mail as shown by the date and time. As required by HAR § 11-200-9.1(c), all written comments and County of Hawai‘i responses are reproduced in this appendix.

(\*) denotes comment number shown in Table 1

### State Agencies

- (32) Office of Planning
- (72) Department of Education
- (35) Department of Hawaiian Home Lands
- (77) Department of Land and Natural Resources, Engineering Division
- (71; 77) Department of Land and Natural Resources, Land Division
- (71; 77) Department of Land and Natural Resources, Division of Forestry and Wildlife

### County of Hawaii Agencies

- (36) County of Hawai‘i Police Department

### Interested Parties

- (37) Ruby Javar
- (26) Tina Tuttle
- (27) Sandra Demoruelle
- (28) Dr. Noelani Hong 10/10/2018; 11:38 am
- (44) Dale A. Loper 9/29/2018; 7:46 am
- (29) Ngaire Gilmour 10/17/2018; 10:30 am
- (30) Jerome Warren
- (31) Ngaire Gilmour 10/20/2018; 12:40 pm
- (33) Edward Andrade, Jr.
- (41) Sophia M. Hanoa 10/23/2018; 4:47 pm
- (42) Jadelyn Kaapana-Moses 10/24/2018; 1:39 pm
- (38) Lila Lopes
- (34) Charles Tuttle and Tina Tuttle
- (43) Amanda McDowell and Anthony McDowell
- (40) Pele Defense Fund
- (55) Alfred Ibarra and Mary Ibarra
- (56) Walter T.L. and Debra A. Wong Yuen
- (63) Gwendolyn Sorensen 11/2/2018; 2:43 pm

- (62) Prodeincio Fuerte
- (59) Larry O. Navarro 11/19/2018; 11:27 am
- (60) Lisa Gollin 11/19/2018; 11:46 am
- (61) Tanya Ibarra 12/3/2018; 8:19 am
- (68) Dorothy Kalua
- (67; 69; 70) Pele Defense Fund (2 duplicates) 12/10/2018; 6:15 am; 6:26 am; 6:26 am
- (73) Ngaire Gilmour 12/10/2018; 5:01 pm
- (74) Keoni Fox 12/10/2018; 5:43 pm
- (76) Noelani Hong

- (1) Sandra Demoruelle 9/24/2018; 8:57 am
- (2) Sandra Demoruelle 9/24/2018; 10:26 am
- (3) Sandra Demoruelle 9/24/2018; 11:15 am
- (4) Sandra Demoruelle 9/24/2018; 1:21 pm
- (5) Sandra Demoruelle 9/25/2018; 8:32 am
- (6) Sandra Demoruelle 9/25/2018; 9:39 am
- (7) Sandra Demoruelle 9/25/2018; 12:28 pm
- (8) Sandra Demoruelle 9/25/2018; 12:39 pm
- (9) Sandra Demoruelle 9/28/2018; 9:54 am
- (10) Sandra Demoruelle 9/28/2018; 11:52 am
- (11) Sandra Demoruelle 9/28/2018; 1:21 pm
- (12) Sandra Demoruelle 9/28/2018; 1:43 pm
- (13) Sandra Demoruelle 9/29/2018; 5:50 pm
- (14) Sandra Demoruelle 10/1/2018; 10:29 am
- (15) Sandra Demoruelle 10/1/2018; 10:41 am
- (16) Sandra Demoruelle 10/3/2018; 8:17 am
- (17) Sandra Demoruelle 10/6/2018; 9:00 am
- (18) Sandra Demoruelle 10/10/2018; 10:50 pm
- (19) Sandra Demoruelle 10/12/2018; 10:20 am
- (20) Sandra Demoruelle 10/13/2018; 8:51 am
- (21) Sandra Demoruelle 10/21/2018; 4:12 pm
- (22) Sandra Demoruelle 10/24/2018; 4:03 pm
- (39) Sandra Demoruelle 10/23/2018; 2:48 pm
- (46) Sandra Demoruelle 10/31/2018; 8:03 am
- (45) Sandra Demoruelle 10/31/2018; 8:13 am
- (48) Sandra Demoruelle 10/31/2018; 11:39 am
- (47) Sandra Demoruelle 10/31/2018; 12:41 pm
- (49) Sandra Demoruelle 10/26/2018; 11:12 am



(50) Sandra Demoruelle 11/2/2018; 12:22 pm  
(51) Sandra Demoruelle 11/5/2018; 9:26 am  
(52) Sandra Demoruelle 11/6/2018; 11:51 am  
(53) Sandra Demoruelle 11/8/2018; 11:52 am  
(54) Sandra Demoruelle 11/13/2018; 12:40 pm  
(57) Sandra Demoruelle 11/16/2018; 10:03 am  
(58) Sandra Demoruelle 11/2/2018; 12:14 pm  
(64) Sandra Demoruelle 12/10/2018; 2:36 pm  
(65) Sandra Demoruelle 12/10/2018; 3:01 pm  
(66) Sandra Demoruelle 12/10/2018; 3:29 pm  
(75) Sandra Demoruelle 12/10/2018; 4:38 pm  
(23a) Sandra Demoruelle 10/22/2018; USPS



**OFFICE OF PLANNING  
STATE OF HAWAII**

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2358, Honolulu, Hawaii 96804

Telephone: (808) 587-2846  
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DTS201810160922NA

October 17, 2018

EM

Mr. William A. Kucharski  
Director  
Department of Environmental Management  
County of Hawaii  
345 Kekuaaoa Street, Suite 41  
Hilo, Hawaii 96720

RECEIVED  
OCT 22 2018

WILSON UKAMOTO, Director

Attn.: Dora Beck, Wastewater Division Chief

Dear Mr. Kucharski:

Subject: Draft Environmental Assessment - Pahala Community Large Capacity  
Cesspool Replacement, Paauau, Kau, Hawaii Island, Hawaii  
TMK: (3) 9-6-002: 018

Thank you for the opportunity to provide comments on the Draft Environmental  
Assessment (Draft EA) for the Pahala community large capacity cesspool replacement project.

It is our understanding that the County of Hawaii, Department of Environmental  
Management (DEM) proposes the construction of a wastewater system that would replace the  
large capacity cesspool currently serving the community of Pahala, in order to comply with U.S.  
Environmental Protection Agency regulations. The project will include a new wastewater  
collection system located primarily within public streets in the town of Pahala, and a treatment  
and disposal system on land owned by the County of Hawaii.

The collection system will consist of approximately 12,120 linear feet of underground  
gravity fed flow piping. The treatment and disposal facility will occupy about 14.9 acres and  
consist of a headworks and an odor control unit, an operations building, four lined aerated  
lagoons, a subsurface flow constructed wetland to remove nitrogen with an adjacent disinfection  
system to remove pathogens, and four slow rate land treatment basins for disposal of the treated  
effluent.

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

- i. Previous Comments  
Our pre-consultation response letter dated April 5, 2018 (DTS 201804051430R1),  
requested the following:

Mr./Ms. Name  
Date  
Page 2

- i. The Draft EA offer an examination of the project's consistency with the  
objectives and policies of the Hawaii Coastal Zone Management (CZM)  
Program, Hawaii Revised Statutes (HRS) § 205A-2.
- ii. Provide an analysis on stormwater control methods, drainage, and mitigation  
strategies to safeguard the nearby surface water resources and the  
coastal/marine ecosystem.

OP acknowledges that our comments cited above in our pre-consultation letter have  
been addressed in the Draft EA.

2. The following items will need further evaluation and discussion in the Final  
Environmental Assessment (Final EA).

- i. State Land Use District Unpermitted Use Considerations  
Section 2.10.3, pages 2-24 to 2-25 of the Draft EA examine State Land Use  
District issues, and address the incompatible land use of a wastewater  
treatment system within the State Land Use Agricultural District. Page 2-24  
of the Draft EA acknowledges that the project site is within the State Land  
Use Agricultural District, and wastewater treatment facilities are not a  
permitted use pursuant to HRS § 205-4.5(a)(7).

The Draft EA recognizes the need for a Special Permit. It states that DEM  
will submit a Special Permit application to the County of Hawaii Planning  
Commission. Another land use approval option that could be considered for  
this project is a District Boundary Amendment. The Final EA should indicate  
the option of a District Boundary Amendment, which if the petition area is  
less than 15 acres land use, can be processed and approved by the County of  
Hawaii.

- ii. The Hawaii State Planning Act  
Section 6.1.1, pages 6-1 to 6-4 addresses all of statutes associated with Part 1 –  
goals, objectives, and policies of the Hawaii State Planning Act in Table 6-1.  
Section 6.1.2, pages 6-4 to 6-5 examines applicable State Functional Plans. It  
provides analysis on the Agriculture Functional Plan and Historic Preservation  
Functional Plan, as applicable to this project.

As for Part III – Priority Guidelines, Table 6-1, page 6-4 provides discussion  
on only HRS § 226-101 - Purpose. On this matter, Table 6-1 states "The  
Pahala project does not include facilities or improvements that would  
affect overall priority guidelines of statewide concern."

The Final EA should include a discussion on the project's ability to meet all

Mr./Ms. Name  
Date  
Page 3

parts of the Hawaii State Planning Act, as listed in HRS Chapter 226, examine the project's consistency with these statutes, or clarify where it is in conflict. The examination on Part III statutes should be expanded to include a discussion on all of the Priority Guidelines. If DEM finds that the priority guidelines are not applicable to the proposed action, the Final EA should affirmatively state such determination for each of these statutes (as was conducted for Part I statutes in Table 6-1) followed by discussion paragraphs.

iii. Principles of Sustainability

Item #2 of our April 5, 2018 pre-consultation response letter requested that the Draft EA include an examination on this cesspool removal and replacement project, and its compatibility with Statewide sustainability goals.


OP finds that removal of cesspools is consistent with the principles of sustainability, and HRS § 226-108 – Priority Guidelines on sustainability is applicable to this proposed action. The closure and replacement of cesspools with more environmentally friendly wastewater collection and treatment systems, corresponds with the principles of sustainability. Wastewater collection and treatment systems can lead to higher water quality levels for nearby surface water resources, and is beneficial for the vitality and health of the coastal and marine ecosystem.

The Final EA, should include a discussion on this project's compatibility with the principles on sustainability, HRS § 226-108. For more information on State sustainability goals for the environment and natural resources, please review the Hawaii 2050 Sustainability Plan.

The report on this plan is accessible through the State Office of the Auditor's website at <http://files.hawaii.gov/auditor/Reports/2018/2018H2050.pdf>.

We have no further comments on this matter. If you have any questions, please contact Joshua Hekeia of our office at (808) 587-2845.

Sincerely,



Leo R. Asuncion  
Director

c: ✓ Earl Matsukawa, Wilson Okamoto Corporation



10349-01  
March 6, 2020

ref (32)

Ms. Mary Alice Evans, Director,  
Office of State Planning  
235 South Beretania Street, 6<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - October 17, 2018

Dear Ms. Evans:

Thank you for your October 17, 2018 comment letter (DTS201810160922NA) regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

1. No response required.
2. i. State Land Use Unpermitted Use Consideration  
A District Boundary Amendment is an option to the County Special Permit. However, a District Boundary Amendment to Urban would result in a spot designation where the surrounding area is currently designated as Agricultural by the State Land Use Commission and by the County in both the General Plan and Ka'ū Community Development Plan. Also, this same surrounding area zoning designation is Agriculture (A-20a or A-1a) or MG-1a in the case of the adjacent macadamia nut facility. Overall, this spot zoning designation is not preferable in lieu of the Special Permit. This information will be included in the Final EA Section 2.10.3.
- ii. The Hawaii State Planning Act  
The Final EA will include the following discussion of Part III Priority Guidelines.
- iii. Principles of Sustainability  
The Final EA will include the following discussion on this project's compatibility with the principles on sustainability, HRS § 226-108.

The Final EA will include the following in Table 6.1:

**PART II. PLANNING COORDINATION and IMPLEMENTATION**

Part II does not apply to the Pāhala Community Large Capacity Cesspool Replacement project.

**PART III. PRIORITY GUIDELINES**

Objectives and Policies of the Hawai'i State Plan	Discussion
<p><b>§226-101 Purpose.</b> The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.</p>	<p>The Pāhala project will support applicable overall priority guidelines, as follows:</p>
<p><b>§226-102 Overall direction.</b> The State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.</p>	<p>The Pāhala project will affect short-term economic development and jobs during the construction period. The Pāhala project will not affect economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education and climate change adaptation. Removal of cesspools is consistent with the principles of sustainability.</p>
<p><b>§226-103 Economic priority guidelines.</b> (a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy.                      (e) Priority guidelines for water use and development:                      (1) Maintain and improve water conservation programs to reduce the overall water consumption rate.                      (2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.</p>	<p>The Pāhala project will stimulate economic development and jobs during the construction period.</p>
<p><b>§226-104 Population growth and land resources priority guidelines.</b> (a) Priority guidelines to effect desired statewide growth and distribution:</p>	<p>The Pāhala project will not affect population growth but may help protect the environment and improve water quality in nearby surface water resources.</p>

<p><b>§226-105 Crime and criminal justice.</b> Priority guidelines in the area of crime and criminal justice:</p>	<p>The Pāhala project will not affect crime or criminal justice in the Pāhala area.</p>
<p><b>§226-106 Affordable housing.</b> Priority guidelines for the provision of affordable housing:</p>	<p>The Pāhala project will not affect affordable housing in the Pāhala area.</p>
<p><b>226-107 Quality education.</b> Priority guidelines to promote quality education :</p>	<p>The Pāhala project will not affect education in the Pāhala area.</p>
<p><b>[§226-108] Sustainability.</b> Priority guidelines and principles to promote sustainability include:                      (5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.</p>	<p>The Pāhala project will close 2 large capacity cesspools, replacing them with secondary treatment and disposal systems, thereby protecting ground water resources for future generations, potentially benefitting the health and vitality of the area coastal and marine ecosystem.</p>
<p><b>[§226-109] Climate change adaptation priority guidelines.</b> Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy.</p>	<p>The wastewater treatment and disposal facility will be designed to contain the 100-year, 24-hour storm event while maintaining sufficient freeboard to account for the uncertainty of climate model projections..</p>

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
 Project Manager

cc: W. Kucharski, COH DEM  
 D. Beck, COH WWD  
 S. Mendonca, COH WWD  
 K. Rao, EPA; C. Lekven, BC; P. Goodwin, ERG



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2380  
HONOLULU, HAWAII 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

December 7, 2018

Ms. Dora Beck  
County of Hawaii  
Department of Environmental Management  
345 Kekuaaoa Street, Suite 41  
Hilo, Hawaii 96720

Re: Republished Draft Environmental Assessment for the Pahala Large Capacity  
Cesspool Replacement, Pahala, Kau, Hawaii TMK: 9-6-002:018

Dear Ms. Beck:

The Hawaii State Department of Education (HIDOE) has the following comments for the Republished Draft Environment Assessment (DEA) for the proposed Pahala Large Capacity Cesspool Replacement (Project). According to the DEA, the proposed Project is to construct a new wastewater treatment facility and collection system to replace the existing large capacity cesspools currently serving the Pahala Community in the Kau District, Island of Hawaii.

The DEA notes that Kau High and Pahala Elementary School (School) will connect to the new wastewater treatment system (WWTS) and that the existing on-site septic system will be closed. The project implementation timeline, provided in Appendix B, has a May 20, 2021 deadline to complete the construction of the wastewater treatment plant (WWTP) and a June 30, 2021 deadline to complete the connection of the existing collection system to the WWTS. Construction of the new wastewater collection system will be done in two phases with no time frame provided.

We request consultation and coordination with the Facilities Development Branch, Public Works Administrator, as early as possible, to ensure a timely connection to the WWTS and closure of the on-site septic system. This future connection of the School to the WWTS and closure of the on-site septic system requires HIDOE to request funds from the Legislature to prepare the required environmental reports as well as to design and construct necessary onsite improvements.

The School will be subject to short term construction related impacts. Impacts from noise and fugitive dust are anticipated with the installation of the new wastewater collection, system adjacent to the School. Student transportation services will be impacted from changes to traffic patterns. The HIDOE currently has five school buses transporting students, residing in the Kau District, to and from School. We request consultation and coordination with the School prior to and during construction in order to further identify and minimize impacts in general and during schools hours. We also request consultation and coordination with the HIDOE Student Transportation Services Branch Manager, James Kauhi, to identify and minimize impacts to existing HIDOE transportation services.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

10249-01  
12/12/18  
DR. CHRISTINA M. KISHIMOTO  
SUPERINTENDENT  
CC: RC COII  
EPA ERG  
REGISTRATION  
HAWAII STATE DEPARTMENT OF EDUCATION

Ms. Dora Beck  
December 7, 2018  
Page 2

The HIDOE became aware of this DEA after reviewing the November 8, 2018 issue of The Environmental Notice prepared by the Hawaii State Office of Environmental Quality Control. A review of the DEA confirmed that the HIDOE was not an agency consulted for the pre-draft assessment consultation and the initial publication of DEA for this project. The HIDOE is aware that a similar project is required to replace the Naalehu large capacity cesspool. The HIDOE requests to be included in the pre-draft assessment consultation and DEA for the Naalehu large capacity cesspool replacement project.

Thank you for the opportunity to comment. Should you have questions, please contact Robyn Loudermilk, School Lands and Facilities Specialist of the Facilities Development Branch, Planning Section, at 784-5093, or via email at robyn\_loudermilk@notesnotes.k12.hi.us.

Respectfully,

Kenneth G. Masden II  
Public Works Manager  
Planning Section

KGM:ril

- c: Sharon Beck, Principal, Kau High and Pahala Elementary School
- Gaudencia Watarida, Administrative Services Assistance, Kau-Keaau-Pahoa Complex
- ✓Earl Matsukawa, Wilson Okamoto Corporation
- Office of Environmental Quality Control
- James Kauhi, Student Transportation Services Branch
- John C.H. Chung, Facilities Development Branch



10349-01  
March 6, 2020

ref (72)

Mr. Kenneth G. Madsen II, Public Works Manager  
Planning Section  
Department of Education  
State of Hawai'i  
P.O. Box 2360  
Honolulu, HI 96804

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - December 7, 2018

Dear Mr. Madsen:

Thank you for your December 7, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management (DEM) Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Final EA Section 2.3.2 will include the following:

As stated in Section 4.7.2 of the *County of Hawai'i, Department of Public Works, Final Environmental Assessment and Finding of No Significant Impact, Ka'ū Gym and Shelter, Pāhala, Ka'ū District, April 2012*: "In accordance with Section 21-5, Hawai'i County Code (HCC), Ka'ū High and Pāhala Elementary School, including the Ka'ū District Gym and Shelter, will be required to connect to the County sewer system when access becomes available. The State Department of Education will be responsible for coordinating and constructing the connection to the sewer system via a branch main on Hala Street and properly closing their onsite system."

Further, the Ka'ū Gym and Shelter Final EA states: "The Ka'ū High and Pāhala Elementary School, including the Ka'ū District Gym and Shelter, will become accessible to the proposed County sewer system with the installation of two new laterals at the property line on Hala Street and Kamani Street. While typically only a single lateral is provided for a lot, the additional lateral on Hala Street is being installed to accommodate the project and create a gravity flow connection."

Information regarding project schedules, including US Environmental Protection Agency (USEPA) compliance dates, project updates and milestones can be found on the USEPA website

10349-01  
Letter to Mr. Kenneth G. Madsen II  
Page 2  
March 6, 2020

at: <https://www.epa.gov/uic/county-hawaii-administrative-order-consent-closure-cesspools-pahala-and-naalehu>.

The County will also provide information about the construction schedule for the treatment and disposal facility and the collection system to the Facilities Development Branch Public Works Administrator on request. Impacts and mitigation measures for addressing construction-related dust, traffic and noise are addressed in the Draft EA Sections 3.14.2, 3.17.2 and 3.18.2.

Further, the County will coordinate with the HDOE Student Transportation Services Branch Manager and the School in order to minimize construction-related impacts to student transportation services. This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

DAVID Y. IGE  
GOVERNOR  
STATE OF HAWAII

DOUGLAS S. CHIN  
LT GOVERNOR  
STATE OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1879  
HONOLULU, HAWAII 96805

September 27, 2018

Wilson Okamoto Corporation  
1907 S. Beretania St., #400  
Honolulu, Hawaii 96826



Dear Sirs:

Subject: Publication of Draft Environmental Assessment (DEA) on the proposed Pahala Community Large Capacity Cesspool (LCC) Replacement Project

The Department of Hawaiian Home Lands acknowledges receiving the request for comments on the above-cited project. After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Lands, we do not anticipate any impacts to our lands or beneficiaries from the project.

However, we highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)ative Hawaiian organizations when preparing environmental assessments, to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

Mahalo for the opportunity to provide comments. If you have any questions, please call Rae Ann Hyatt at 620-9480 or contact via email at [raeann.p.hyatt@hawaii.gov](mailto:raeann.p.hyatt@hawaii.gov).

Sincerely,

M. Kaleo Manuel  
Acting Planning Program Manager

10349-01

JORIE M. K. MASAGATANI  
CHAIRMAN  
HAWAIIAN HOMES COMMISSION  
10/1/18  
WILLIAM J. ATLA, JR.  
DEPUTY TO THE CHAIRMAN

cc: BC  
COH  
EPA JS  
ERG EM



WILSON OKAMOTO  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

10349-01  
March 6, 2020

ref (35)

M. Kaleo Manuel, Acting Planning Program Manager  
State of Hawai'i  
Department of Hawaiian Home Lands  
91-5420 Kapolei Parkway  
Kapolei, HI 96707

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – September 27, 2018

Dear Mr. Manuel:

Thank you for your September 27, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. The Final Environmental Assessment (EA) will note that due to the lack of proximity to Hawaiian Home Lands properties, the Department of Hawaiian Home Lands does not anticipate any impacts to the lands or beneficiaries from the project.

The Draft EA Section 10.1 lists the Native Hawaiian Organizations consulted in preparation of the Draft EA. This information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

**From:** Nakamura, Darlene K <darlene.k.nakamura@hawaii.gov>  
**Sent:** Wednesday, December 12, 2018 9:56 AM  
**To:** Public Comment  
**Subject:** FW: Request for Comments - Pahala Large Capacity Cesspool Extended DEA  
**Attachments:** Pahala Large Capacity Cesspool Replacement Project.Extended DEA 12.12.18.pdf

10349-01  
12/12/18  
cc: PC, COH  
EPA, ERG

Aloha,

Attached are additional comments from DLNR's Engineering Division

Mahalo,  
Darlene

---

**From:** Nakamura, Darlene K  
**Sent:** Monday, December 10, 2018 10:07 AM  
**To:** PahalaEA@wilsonokamoto.com  
**Subject:** Request for Comments - Pahala Large Capacity Cesspool Extended DEA

To: Wilson Okamoto Corporation

Attached are DLNR's comments to the above-entitled subject matter.

Thank you,  
Darlene

--  
This message has been scanned for viruses and dangerous content using Worry-Free Mail Security, and is believed to be clean. [Click here to report this message as spam.](#)



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

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

December 12, 2018

Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

via email: [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

Gentlemen:

**SUBJECT:** Draft Environmental Assessment – Extension Public Comment Period for the **Pahala Large Capacity Cesspool (LLC) Replacement Project** located at Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated December 7, 2018, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at (808) 587-0417. Thank you.

Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosure  
cc: Central Files



DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

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

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: Draft Environmental Assessment - Extension Public Comment Period for the  
Pahala Large Capacity Cesspool (LCC) Replacement Project, Pahala,  
District of Ka'u, Island of Hawaii; (3) 9-6-002:018

November 14, 2018

MEMORANDUM

TO:  
FROM

DLNR Agencies:

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

TO  
FROM

FROM: Russell Y. Tsuji, Land Administrator  
 SUBJECT: Draft Environmental Assessment - Extension Public Comment Period for  
 the Pahala Large Capacity Cesspool (LCC) Replacement Project  
 LOCATION: Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018  
 APPLICANT: County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **December 6, 2018**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on The Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: Carty S. Chang  
 Print Name: Carty S. Chang, Chief Engineer  
 Date: 12/7/18

cc: Central Files

RECEIVED 11/14/2018 ENGINEERING

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- o Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: Carty S. Chang  
 CARTY S. CHANG, CHIEF ENGINEER  
 Date: 12/7/18



10349-01  
March 6, 2020

ref (77)

Mr. Russell Y. Tsuji, Land Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawai'i  
Post Office Box 621  
Honolulu, HI 96809

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of, Ka'ū, Hawai'i  
Response to Comment, e-mail December 10, 2018

Dear Mr. Tsuji:

Thank you for your December 12, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

10349-01  
Letter to Mr. Russell Y. Tsuji  
Page 2  
March 6, 2020

This information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

December 7, 2018

Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

via email: [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

Gentlemen:

SUBJECT: Draft Environmental Assessment – Extension Public Comment Period for  
the **Pahala Large Capacity Cesspool (LLC) Replacement Project**  
located at Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018

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

At this time, enclosed are comments from the (a) Division of Forestry & Wildlife and (b) Land Division – Hawaii District on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at (808) 587-0417. Thank you.

Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosures  
cc: Central Files

10349-01  
12/12/18  
SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
cc: BC COA  
EPA G26

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

November 14, 2018

**MEMORANDUM**

DLNR Agencies:

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

From:  
To:

re:

FROM: Russell Y. Tsuji, Land Administrator  
SUBJECT: Draft Environmental Assessment – Extension Public Comment Period for  
the **Pahala Large Capacity Cesspool (LLC) Replacement Project**  
LOCATION: Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018  
APPLICANT: County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **December 6, 2018**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on The Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Print Name: GORDON C. HEIT

Date: 12/13/18

cc: Central Files

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



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

2018 NOV 15 P 1:08

RECEIVED  
LAND DIVISION  
HILO, HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

November 14, 2018

**MEMORANDUM**

**DLNR Agencies:**

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

*TO: FROM*  
**FROM:** Russell Y. Tsuji, Land Administrator  
**SUBJECT:** Draft Environmental Assessment – Extension Public Comment Period for the **Pāhala Large Capacity Cesspool (LLC) Replacement Project**  
**LOCATION:** Pāhala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018  
**APPLICANT:** County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **December 6, 2018**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on *The Environmental Notice* in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

**Attachments**

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: 

Print Name: **DAVID C. SMITH, Administrator**

Date: 11/28/18

cc: Central Files

19283

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



**WILSON OKAMOTO  
CORPORATION**

INNOVATORS • PLANNERS • ENGINEERS

10349-01  
March 6, 2020

ref (71; 77)

Mr. Russell Y. Tsuji, Land Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawai'i  
Post Office Box 621  
Honolulu, HI 96809

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment - December 7, 2018

Dear Mr. Tsuji:

Thank you for your December 7, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Final EA will note the Land Division - Hawai'i District and the Division of Forestry and Wildlife had no comments.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

October 22, 2018

Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

via email: [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

Gentlemen:

SUBJECT: Draft Environmental Assessment for the **Pahala Large Capacity Cesspool Replacement Project** located at Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018

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

At this time, enclosed are comments from the (a) Engineering Division, (b) Division of Forestry & Wildlife, and (c) Land Division – Hawaii District on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at (808) 587-0417. Thank you.

Sincerely,

  
Russell Y. Tsuji  
Land Administrator

Enclosures  
cc: Central Files

10349-01  
12/24/18  
SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

cc: EC COH  
EPA ERG



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

September 27, 2018

MEMORANDUM

TO:  
FROM

DLNR Agencies:

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

TO  
FROM

FROM: Russell Y. Tsuji, Land Administrator  
SUBJECT: Draft Environmental Assessment for the **Pahala Large Capacity Cesspool Replacement Project**  
LOCATION: Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018  
APPLICANT: Wilson Okamoto Corporation

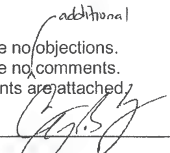
Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 19, 2018**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on The Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

Attachments

- ( ) We have no objections.
- (✓) We have no comments.
- ( ) Comments are attached.

Signed:   
Print Name: Cary S. Chang, Chief Engineer  
Date: 9/22/18

cc: Central Files

18 SEP 27 PM 02:49 ENGINEERING SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

19192

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SOH DLNR

SOH DLNR

06:39:31 a.m. 10-18-2018

1 / 1



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

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

September 27, 2018

MEMORANDUM

TO: FROM:

**DLNR Agencies:**

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

FROM: TO:  
SUBJECT:

Russell Y. Tsuji, Land Administrator  
Draft Environmental Assessment for the **Pahala Large Capacity Cesspool Replacement Project**

LOCATION:  
APPLICANT:

Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018  
Wilson Okamoto Corporation

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 19, 2018**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on The Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: [Signature]

Print Name: **DAVID G. SMITH, Administrator**

Date: 10/3/18

cc: Central Files



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

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

September 27, 2018

MEMORANDUM

FROM: TO:

**DLNR Agencies:**

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

FROM:  
SUBJECT:

Russell Y. Tsuji, Land Administrator  
Draft Environmental Assessment for the **Pahala Large Capacity Cesspool Replacement Project**

LOCATION:  
APPLICANT:

Pahala, District of Ka'u, Island of Hawaii; TMK: (3) 9-6-002:018  
Wilson Okamoto Corporation

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 19, 2018**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on The Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: [Signature]

Print Name: **GORDON C. HEIT**

Date: 10/14/18

cc: Central Files

→ 10/18/18 To: Darlene Nakamura  
From: Gordon-HDLO

2018 OCT -1 P 12:34

RECEIVED  
LAND DIVISION  
HILO, HAWAII



10349-01  
March 6, 2020

ref (71;77)

Mr. Russell Y. Tsuji, Land Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawai'i  
Post Office Box 621  
Honolulu, HI 96809

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - October 22, 2018

Dear Mr. Tsuji:

Thank you for your October 22, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Final EA will include the Department of Land and Natural Resources Engineering Division had no additional comments, the Division of Forestry and Wildlife had no comments, and the Land Division - Hawai'i District had no objections.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Harry Kim  
Mayor



**County of Hawai'i**

**POLICE DEPARTMENT**  
349 Kapi'olani Street • Hilo, Hawai'i 96720-3098  
(808) 935-3111 • Fax (808) 961-2189



10349-01  
10/5/18  
Paul K. Ferreira  
Police Chief  
CC: BC EPA  
COH ERG  
Kenneth Bugado Jr.  
Deputy Police Chief  
EM

October 2, 2018

Mr. Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawai'i 96826

**SUBJECT: PUBLICATION OF DRAFT ENVIRONMENTAL ASSESSMENT ON THE PROPOSED PÄHALA COMMUNITY LARGE CAPACITY CESSPOOL (LCC) REPLACEMENT PROJECT**

Dear Mr. Matsukawa:

Thank you for allowing us the opportunity to provide input during the 30-day public notice commenting period for the Environmental Assessment (EA) on the proposed Pähala Community Large Capacity Cesspool Replacement Project.

The Hawai'i Police Department has reviewed the draft EA and does not have any additional comments or concerns at this time.

Should you have any questions or concerns, please contact Captain Miles Chong, Commander of our Ka'u District, at phone number (808) 939-2520 or via email at [Miles.Chong@hawaiicounty.gov](mailto:Miles.Chong@hawaiicounty.gov).

Sincerely,

PAUL K. FERREIRA  
POLICE CHIEF

MC  
RS180278



10349-01  
March 6, 2020

ref (36)

Chief Paul Ferreira, Police Chief  
County of Hawai'i  
Police Department  
349 Kapiolani Street  
Hilo, HI 96720

Attention: Captain Miles Chong, Commander Ka'u District

Subject: Draft Environmental Assessment (EA) for the Pähala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 2, 2018

Dear Chief Ferreira:

Thank you for your October 2, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment for the Pähala Large Capacity Cesspool Replacement project. The Final Environmental Assessment (EA) will note that the County of Hawai'i Police Department has reviewed the Draft EA and does not have any comments or concerns at this time.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG





1907 South Beretania Street, Suite 400  
 Honolulu, Hawaii 96826  
 T (808) 946-2277 F (808) 946-2253  
 W <http://www.wilsonokamoto.com>  
 Attention: Mr. Earl Matsukawa

**SUBJECT: DRAFT EA: PĀHALA COMMUNITY  
 LARGE CAPACITY CESSPOOL (LCC)  
 REPLACEMENT PROJECT  
 INFORMATION MEETING, OCTOBER 10, 2018**

*proposed pāhala*  
 Please move sewage treatment plant makai (seaward side) of the highway/below Pāhala town.

The fines to county (taxpayers) regarding ~~the~~ project deadlines shouldn't be reason to build at current proposed site. This site is too close for comfort + life quality.

*I also have no # to hook up to sewage plant hook*  
 PLEASE PRINT: Name: Ruby Javar Phone: \_\_\_\_\_

Organization: \_\_\_\_\_  
 Address: P.O. Box 847 Pāhala, HI 96777  
 Email: \_\_\_\_\_

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).



10349-01  
 March 6, 2020

ref (37)

Mr. Ruby Javar  
 P.O. Box 847  
 Pāhala, HI 96777

Subject: Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project  
 District of Ka'ū, Hawai'i  
 Response to Comment – October 10, 2018

Dear Mr. Javar:

Thank you for your October 10, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool (LCC) Replacement project. Our responses follow:

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the

10349-01  
Letter to Mr. Ruby Javar  
Page 2  
March 6, 2020

subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

The comment referencing fines is not specifically a comment to the content of Draft EA, and the potential for penalties to be levied against the County by the EPA for failure to close the LCCs is unrelated to the site selection process.

The Draft EA Section 2.3.2 states the new collection system would be subject to the County of Hawai'i Code (HCC) Chapter 21, Sewers. Specifically, HCC Chapter 21, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a)Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.”*

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, Department of Environmental Management voluntarily convened two additional public meetings in Pāhala, one on October 9, 2018 and the second on March 21, 2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

The Draft EA Section 7 will be revised to add that the County held additional meetings in Pāhala including one to provide information on financing sources available to owners of parcels which would become accessible to the County collection system. The purpose of the March 21, 2019 meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pāhala Community. At the meeting, Department of Environmental Management provided the preliminary results of the County investigation into funding sources and options available for newly accessible property owners once the new treatment and disposal facility and wastewater collection system have been designed, permitted and constructed.

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March 6, 2020

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawaii Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawaii Legislature, Senate Bill 221 SD1, which could amend Hawaii Revised Statutes (HRS) Chapter §342D to establish a low interest loan program to offer financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

The Draft EA Section 3.16 discusses the socioeconomic characteristics of and impacts on the Pāhala community.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



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W <http://www.wilsonokamoto.com>  
Attention: Mr. Earl Matsukawa

**SUBJECT: DRAFT EA: PĀHALA COMMUNITY  
LARGE CAPACITY CESSPOOL (LCC)  
REPLACEMENT PROJECT  
INFORMATION MEETING, OCTOBER 10, 2018**

*I am very concerned about the  
short distance of the proposed site  
in Pāhala being so close to the school.*

(include additional sheets as necessary)

PLEASE PRINT: Name: Tina Tuttle Phone: 769-3569

Organization: \_\_\_\_\_

Address: P.O. Box 727177

Naalehu, HI 96772

Email: ttuttle1962@gmail

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).



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10349-01  
March 6, 2020

ref (27)

Ms. Tina Tuttle  
P.O. Box 727177  
Naalehu, HI 96722

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – October 10, 2018

Dear Ms. Tuttle:

Thank you for your October 10, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Elementary School Complex, the portion of campus closest to the treatment and disposal facility within the Ka'ū High and Pāhala Elementary School campus, lies more than ½ mile directly or about 1 mile away from the treatment and disposal facility by road. From the school, one must travel on a portion of the school parcel and on 5 streets to reach the fenced wastewater treatment and disposal facility. The intervening streets access or abut residential parcels and other land uses. The distance and intervening land uses show the treatment and disposal facility is not located in close proximity to a school facility. This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

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W <http://www.wilsonokamoto.com>  
Attention: Mr. Earl Matsukawa

**SUBJECT: DRAFT EA: PĀHALA COMMUNITY  
LARGE CAPACITY CESSPOOL (LCC)  
REPLACEMENT PROJECT  
INFORMATION MEETING, OCTOBER 10, 2018**

10349-01  
10/17/18  
Attached  
Comments  
M1-11  
with supporting  
documents  
cc: BOE  
COH  
EP&E  
ERG

M1-11 Comments submitted  
by Sandra Demoruelle  
at meeting

(include additional sheets as necessary)  
PLEASE PRINT: Name: Sandra Demoruelle  
Organization: \_\_\_\_\_  
Address: Box 588  
Naalehu HI 96772  
Email: naalehu.theatre@yahoo.com

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).



Pahala DEA  
meeting  
September 23, 2018

Submitted by Sandra Demoruelle  
Oct 10 2018  
The Environmental Notice

**HAWAII**  
Pāhala Large Capacity Cesspool Replacement--Draft EA (AFNSI)

HRS §343-5(a) Trigger (1) Propose the use of state or county lands or the use of state or county funds  
(QA) Wastewater Treatment Unit  
District(s) Ka'u  
TMK(s) (3)  
Permit(s) var  
Proposing/ Determining Agency De Do 34: 720  
Consultant Wil Ear  
Status Star  
Failure to stale  
true nature of project  
18  
St., Suite 400, Honolulu, HI 96826  
7 / fax: (808) 946-2253. [PAHALA@wilsonokamoto.com](mailto:PAHALA@wilsonokamoto.com)  
ment period starts. Comments are due by October 23, 2018. Please send comments to the proposing/determining agency and copy the consultant.

The County of Hawai'i Department of Environmental Management proposes to construct wastewater system improvements replacing the large capacity cesspools (LCCs) currently serving Pāhala, in order to comply with U.S. Environmental Protection Agency (EPA) regulations. The project is located on public streets in ZIP code 96720. The project involves the construction of a new wastewater collection system located primarily within the area bounded by the County (TMK: 9-6-002: 018). The project involves the construction of approximately 1,000 feet of 8 to 12-inch diameter underground gravity flow collection system on land to be acquired by the County (TMK: 9-6-002: 018). The project also involves the construction of approximately 1,000 feet of 8 to 12-inch diameter underground gravity flow collection system on land to be acquired by the County (TMK: 9-6-002: 018). The project also involves the construction of approximately 1,000 feet of 8 to 12-inch diameter underground gravity flow collection system on land to be acquired by the County (TMK: 9-6-002: 018).

The collection system will be installed in Maile, about 14.9 acre subsurface flow slowrate land to enclose the entire project area. The treatment and disposal facility would occupy unit, an operations building, four lined aerated lagoons, an adjacent disinfection system to remove pathogens, and four feet of the treated effluent. A perimeter security fence would water collection system would be abandoned.

Kohala Shoreline  
HRS §343-5(a) Trigger  
District(s)  
TMK(s)  
Permit(s)  
Proposing/ Determining Agency Planning Department, County of Hawaii  
Bethany Morrison, (808) 961-8138, [bmorrison@hawaii.gov](mailto:bmorrison@hawaii.gov)  
101 Aupuni St., Suite 3, Hilo, HI 96720  
Applicant Kohala Shoreline, LLC, c/o Carlsmith Ball LLP  
Jennifer Lim, (808) 523-2557, [jlim@carlsmith.com](mailto:jlim@carlsmith.com)  
1001 Bishop St., Suite 2100, Honolulu, HI 96813  
Consultant Geometric Associates  
Ron Terry, (808) 969-7090, [rterry@hawaii.com](mailto:rterry@hawaii.com)  
P.O. Box 396, Hilo, HI 96721

Status The Draft EA and Anticipated Finding of No Significant Impact, originally published on July 8, 2015, are being withdrawn. The Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed Kohala Shoreline, LLC Project, notice of which was published on July 8, 2015, in The Environmental Notice, are being withdrawn. The project proposed in that Draft Environmental Assessment was a subdivision makai of Akoni Pule Highway, on a 37.88-acre parcel located 3 miles north of Kawaihae. Kohala Shoreline LLC's original development concept, as described in the DEA-AFONSI, was a 9-lot residential subdivision, with several building sites makai of the Ala Loa. The project also proposed a downzoning from Single-Family Residential (RS-15) to Residential and Agricultural (RA-3a) to permit less dense development. Kohala Shoreline LLC is no longer pursuing that project and for that reason the DEA-AFONSI is being withdrawn. Kohala Shoreline LLC intends to pursue a less dense project that has been substantially reduced in scale and moved away from the shoreline. A Draft EA for the reduced and reconfigured project is in preparation.

M3

Beck et al.

# Exhibit 12 Hawai'i Notices

AUGUST 23, 2007

... were prior to the fire. The owners of the units and other owners have suffered hardship due to the loss of property value, loss of use, the loss of potential income, and special assessments. As the project would take place entirely within an existing condominium complex on top of an existing foundation and first floor, very few impacts would occur, and all can be mitigated.

lots in Pahala and 162 lots in Na'alehu would be serviced by this cesspool conversion project.

(512) 96 the Vol filed as

Submitted 10/10/2018 by Sandra Demoruelle  
Why hasnt the Kau LCC Project FEA/FONSI 2007 been withdrawn under HRS?

## Nā'ālehu Pahala Large Capacity Cesspool Conversion Project (HRS 343 Final EA-FONSI)

**District:** Ka'u  
**TMK:** Pahala - (3) 9-06-014, (3) 9-06-015, (3) 9-06-016, and (3) 9-06-020; Nā'ālehu - (3) 9-05-024, (3) 9-05-025, and (3) 9-05-026  
**Proposing Agency:** Department of Environmental Management, County of Hawai'i - 25 Aupunani Street, Hilo, Hawai'i 96720 - Ms. Doris Beck - (808) 961-8028



**Determining Agency:** Same as above  
**Consultant:** SSFM International, Inc. - 501 Summer Street, Suite 620, Honolulu, Hawai'i 96817 - Mr. Jared K. Chang - 531-1308

**Public Comment Deadline:** September 24, 2007  
**Permits Required:** NPDES, DOH Existing Well Registration and Underground Injection Control, Grading, Work within the Right-of-Way, Noise (only if required)

The County of Hawai'i, Department of Environmental Management - Technical Services Section (DEM), is proposing to provide sewer collection system and treatment improvements to serve the existing communities of Pahala and Nā'ālehu Villages in the Ka'u District, Island of Hawai'i. These improvements would allow for the conversion of existing large capacity "gang" cesspools (LCC) currently serving these communities. A total of 127

LCCs allow ground mental concerns due to their likelihood of releasing diseases and other contaminants to ground water, streams, and the ocean.

The County is supporting these efforts by providing a new sewer collection system within existing public roadways and an IWS for its treatment. C. Brewer would provide for the connection of individual lots to the County's wastewater collection system.

Alternative sewer collection systems are being developed that are currently served by the C. Brewer system for each community and evaluated to determine the system most feasible and practicable to implement. These collection systems will be integrated with the IWS being developed for proper treatment of wastewater.

This project may be funded by Federal Funds through the State of Hawai'i's Clean Water State Revolving Fund (SRF) Program, which would constitute a federal action, and will require the project to meet all NEPA and Hawai'i SRF program requirements.

## Maui Notices

### Baldwin High School, Library (HRS 343 FEA-FONSI)

**District:** Wailuku  
**TMK:** 3-8-007:004,047  
**Proposing Agency:** Department of Education, Facilities Development Branch, 1151 Punchbowl Street, Room 501, Honolulu, Hawai'i 96813  
**Approving Agency:** Same as above.

**Consultant:** Gerald Park Urban Planner, 1221 Kapiolani Boulevard, Suite 211, Honolulu, Hawai'i 96814, (808) 596-7454  
**Status:** Final environmental assessment (FEA) and Finding of No Significant Impact (FONSI)  
**Permits Required:** Air conditioning and ventilation, NPDES, noise, historic preservation, building, electrical, plumbing, grading, excavation and stockpiling

The Department of Education, State of Hawai'i, proposes to construct a new school library at Henry Perrine Baldwin High

M4

### LIST OF PREPARERS

#### Eastern Research Group, Inc. (ERG):

Braden Rosenberg  
Patrick Goodwin  
J. J. Johnson  
April Eilers  
Kettie Rupnik

#### Wilson Okamoto Corporation:

Earl Matsukawa  
John Sakaguchi

#### Brown & Caldwell:

Craig Lekven

Why aren't the "Public participation-out reach" sub contractors listed as preparers?  
Eplan - Bernadette Senelly  
BTC Michelle Sorenson

Signed:  
Sandra Demoruelle  
Submitted on Oct 10, 2018  
at Pahala PEA meeting



**Proposed Pahala WWTP Project**

**Community Outreach Program**

**First Stage**

11.10.2017

**Long-Term Program Objectives**

- **Understand Pahala** in terms of history, feelings about other projects, relationship with DEM, internal relationships, influences, needs, strengths, challenges, etc.
- **Share Information**
  - o Technical (where is the project located, what is the schedule, what technology is planned?)
  - o Policy-related (how much will this cost me? how much will it cost my neighbor? Do I have to pay for my own connection?)
- **Establish constructive rapport**
  - o between project team (DEM + consultants) and residents
  - o among various community interests
  - o between community and public agencies
  - o among public agencies
- **Provide solution-based forums**, small and large, in which participants are encouraged to answer the question HOW CAN WE MAKE THIS WORK?

*Is there any impact on the ~~part~~ support when there will be endless lawsuits based on violation of the NEPA?*

**First Stage**

**Target outcomes** Assure residents we are there to **listen**  
 Help residents **understand** what is being proposed  
 Establish a **point of departure** to move towards **future** actions and solutions  
**Meet EPA deadline** of December 15 to hold initial public meeting

**Approach** An **inclusive** process that:  
 • Focuses on **those most affected**  
 • Respects **existing community influences** (leaders and organizations)  
 • Provides **the rest of Pahala** an opportunity to join in the conversation

**3 Tiers of Community Contacts**

1. Properly owners, or DEM bill payer on record (~100)
2. Community organizations and businesses- preliminary list
  - a. O Kau Kakou (community volunteer group)
  - b. Churches
    - i. Pahala Holy Rosary Church

*HEPA Procedural Statutes for the turn key WWTP Projects? Submitted 10/10/18 by Sandra Demouille*

- ii. Pahala Assembly of God
  - iii. River of Life
- c. Kupuna of Pahala
  - d. Pahala Filipino Club
  - e. Kau Rural Clinic Association
  - f. Catholic Charities Hawaii
  - g. Coffee companies
    - i. Allii Hawaiian Hula Hands Coffee
    - ii. Rusty Hawaiian Coffee
    - iii. Kau Royal Coffee

3. General public
  - a. <http://kaunewsbriefs.blogspot.com/>
  - b. Fliers

**Sequence of Activities – Talk story sessions to be held on December 12, 13, 14**

1. Schedule three evening meetings (6:00 PM) and one (or two) morning sessions (10:00 AM)
  - a. Possible venues include Pahala Community Center, Pahala Holy Rosary Church, Pahala School and Public Library (Cisco Villa with DEM to help coordinate)
  - b. Light refreshments: water, pastry
  - c. Accommodate up to twelve, although we will not turn people away
2. Send letters to property owners directly affected by the proposed action. These letters will summarize project and invite them to the meeting.
  - a. Need contact information, i.e. names, addresses, from DEM asap.
  - b. Content: brief project description, purpose of meeting
  - c. Invitation: List meeting times. They select one time and RSVP (phone and email).
  - d. Letter sent by Brown & Caldwell local office with RSVP and questions directed to Earthplan (email or phone). Earthplan will draft letter
  - e. To encourage RSVP, letter will include self-addressed postcards.
3. Contact organizational leaders by phone and email (recommendations on contacts from Maile David, Susan Kim [Governor office] and Cisco Villa).
  - a. Provide project description, purpose of meeting and schedule.
  - b. Ask leaders to coordinate RSVP and contact Earthplan.
4. Inform general public.
  - a. Contact Julia Neal who maintains <http://kaunewsbriefs.blogspot.com/>. Ask her to publish schedule for general public with specific information on RSVP.

- b. Post notice in other locations as appropriate
- 5. Convene talk story sessions.
  - a. 1.5 hours
  - b. Earthplan facilitate, B&C historical and technical perspectives.
  - c. Handout: 1-sheet (two sided) information sheet with map, proposed action, schedule, contact information. B&C and Earthplan to prepare.
  - d. Talk story session approach
    - i. Describe the best qualities of Pahala
    - ii. Describe her challenges
    - iii. Tell me about how you deal / have dealt with sewer
      - 1. History
      - 2. Successes and challenges
    - iv. Project description
      - 1. What do you think?
      - 2. How do we move forward?
    - v. Project team: Earthplan and B&C
- 6. Prepare a report summarizing First Stage and recommending next steps.



HILO — Costs have climbed for repair work on the Kealakehe Wastewater Treatment Plant, with the County Council voting Wednesday to add another \$5 million to the \$18 million estimated cost of the project.



HILO — Costs have climbed for repair work on the Kealal Wastewater Treatment Plant, with the County Council vo Wednesday to add another \$5 million to the \$18 million estimated cost of the project.

The extra money, borrowed from the state water pollution control revolving fund, is needed to replace badly eroded liners several of the lagoons, county Environmental Management Director Bobby Jean Leithead Todd said.

The aeration upgrade and sludge removal project, which began 2014, is anticipated to be completed later this year. All five lagoons will be undergoing aeration equipment upgrade and/or sludge removal. The project also involves upgrading the blower the equipment that supplies the air to the aeration equipment that is the backbone to the entire treatment system, by replacing them with energy efficient units that will reduce electrical costs the plant.

The contractor is working on one lagoon at a time to keep the plant operational to continue processing wastewater received from the Kona sewer system.

"This is the most important project in my district, even though it's not very glamorous," said North Kona Councilwoman Karen Eoff. "But it is serious."

(<http://www.westhawaii.com/2018/10/09/news/no-charges-for-officer-suspected-of-stealing-drug-evidence/>)

2 Gecko butt-dials 'bazillion' times from Kona monk seal hospital (<http://www.westhawaii.com/2018/10/09/fi-butt-dials-bazillion-times-from-kona-monk-seal-hospital/>)

3 'Berlin Wall' plan splits Leilani homeowners (<http://www.westhawaii.com/2018/10/09/news/berlin-wall-plan-splits-...>)

*M#7*  
 Since the Kealakehe WWTP is running so much over budget, why won't the Pahala project?  
 18/10/09/h  
 8/10/09/h

*AB*  
 Since WWTP is the "most important" proj in Kona why isn't the Kaula WWTP projects treated as "important"?  
 Submitted by Sandra Demosable

Oct 10, 2018  
 Pahala DEAF meeting

Eoff is one of several in West Hawaii looking forward to the day the county's first-ever wastewater reuse project is installed at that location. That's the second phase of the project, and it's still uncertain how much it will cost or how long it will take.

It can't happen soon enough for Stephen Holmes, a former councilman for the City and County of Honolulu and state conservation chairman for the Sierra Club, which took Maui County to court over its wastewater discharge issues. Holmes said the club was "geared up" to sue Hawaii County, but decided to give the county more time to fix its problem after talking with Eoff, now-former Managing Director Wally Lau and others.

"They are making movement in that direction," Holmes said. "These things never go as fast as you'd like."

The administration is currently in the process of contracting with a consultant for the approximately \$1.6 million for planning and designing, Leithead Todd said. That includes geotechnical investigations, surveys, required permits, community meetings and an environmental impact statement. Once that work's done, the county will have a better idea of the design cost to produce construction plans and specifications for contractor bidding.

The county has been talking about a reuse plant to send much-needed water to thirsty West Hawaii parks and golf courses for almost two decades. The project, which could cost upward of \$50 million for a distribution system, includes piping the water to Old Kona Airport Park and the long-anticipated Kealakehe Regional Park. The water would be stored in a tank uphill, and gravity would feed the water to its destination, she said.

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Not only should the county capture that precious resource, every drop of water that's filtered, cleaned and put to good use is that much less pollution threatening the nearshore waters off the Kona Coast, Holmes and Eoff said.

"It's a resource. It has value," Holmes said. "That's why you don't dump it in a hole in the ground."

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From the Web



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(<http://www.westhawaiitoday.com/2016/02/04/hawaii-news/another-troubling-story-about-brett-kavanaugh-emerges/>)



NASA Desperately Trying to Rescue Hubble Space Telescope

(<http://www.westhawaiitoday.com/2016/02/04/hawaii-news/nasa-desperately-trying-to-rescue-hubble-space-telescope/>)



Cheerleader Pummala Gini Who Challenges Her to Fight

(<http://www.westhawaiitoday.com/2016/02/04/hawaii-news/cheerleader-pummala-gini-who-challenges-her-to-fight/>)



Ford Polygraph Regarding Kavanaugh Assault Revealed

(<http://www.westhawaiitoday.com/2016/02/04/hawaii-news/ford-polygraph-regarding-kavanaugh-assault-revealed/>)



The Brutal Truth Behind the Brett Kavanaugh Scandal

(<http://www.westhawaiitoday.com/2016/02/04/hawaii-news/the-brutal-truth-behind-the-brett-kavanaugh-scandal/>)



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Jobs (<http://jobs.westhawaiitoday.com/>) Homes (<http://realestate.westhawaiitoday.com/>)

Archives (<http://www.westhawaiitoday.com/archive/>) Search

50 West Hawaii Today (<http://www.westhawaiitoday.com>)

Wednesday, Oct. 10, 2016 | 77.54° shower, rain (<http://www.westhawaiitoday.com/weather/>)

Hawaii News (<http://www.westhawaiitoday.com/category/hawaii-news/>)

Kealakehe sewer plant upgrades costly

By Nancy Cook Lauer West Hawaii Today ncook-lauer@westhawaiitoday.com | Thursday, February 4, 2016, 11:30 a.m.

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Email ([mailto:?subject=Kealakehe sewer plant upgrades costly&body=http://www.westhawaiitoday.com/2016/02/04/hawaii-news/kealakehe-sewer-plant-upgrades-costly/](mailto:?subject=Kealakehe%20sewer%20plant%20upgrades%20costly&body=http://www.westhawaiitoday.com/2016/02/04/hawaii-news/kealakehe-sewer-plant-upgrades-costly/))

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Most Popular

1 No charges for officer suspected of stealing drug evidence



**M6** The DEA has no cost analysis for borrowing 95% of

6. "One Thing"

88 the cost of 20 mill, COST PRICE SUPER

At the end of the sessions, each participant was asked to share the "one thing" that they wanted to share with DEM. The following sessions lists comments.

6.1 December 12, 6 PM

I hope the department come back and respond to issues brought up tonight.

The devil is in the details. Don't make the same mistakes. Like the laterals on our street. When you connect sewage pipes, do not use sharp angles. Otherwise like Maui, it blocks up. The mayor of Maui asked me to come help fix this.

Keep taxes down.

I need to know the price because I have two properties with cesspools

Would love the County to look below the highway

I want DEM to look at all these meetings and take heart to heart. They have listened so far. Coming out early. Have faith in the director and appreciate that he listens. The cost impact is a big deal and I want them to reinvestigate funding to help. If the County can foot the cost to connect to main line, that would be a huge help.

I would like to see County help subsidize residents.

Biggest thing is cost. Lot of people have trouble meeting expenses. Not a lot of jobs.

Do archaeological study sooner than later. Gym project got held up.

I hope the conversation keeps going.

The cost is not just about the present. I am worried about what my kids will have to pay later on. That blue line coming through our yard - we didn't ask for that. We should be exempt if the County wants to raise property taxes to pay for this. The purple properties are projected to be hooked up later. Some people think not affect them.

Cost. And the director should be out here listening. They make you two come here and there is only the tape he's listening to. He gets paid a lot of money. He should look at us in the face.

6.2 December 13, 10 AM

The site not big enough for future growth.

Use land on either side of Maile Road.

Go to the other side of Belt Road; or old mill site.

IMPORTANT IN KAUAI

Submitted by Sandra Demarcelle 10/19/18

**M9** Below Hwy site

FUTURE COSTS!

I just wanted to come here and find out. I wasn't on the gang system. Now I understand sure enough, something's up. I'm on the system. How long before whole community part of system? Only handling half the community. Doesn't solve the problem.

Think long term.

Where is construction road on Maile Street?

6.3 December 13, 6 PM

Make it cheaper. Cut the cost.

The cost concerns me.

Be more transparent. Tell the truth. Be honest. Open lines of communication as soon as possible. We understand the County is under time constraints, but you cannot expect others to be.

I agree. We need to know. We are a small community. Nobody talks to us.

Cost. Keep it low.

Everything is going up and up and up. We don't know how much it will cost. I'm afraid of that.

When will next round of meetings take place?

What is problem with siting below the highway?

The County built the gym and in the gym, there were bones. What did they do with bones if they find on this site?

General comment at the end: Appreciate meetings

6.4 December 14, 10 AM

Why are we now paying monthly if the thing not so good?

Why do we have to pay if they're not using the lines in our yard?

Why don't they move to the other side (east) of Maile Road so it's not below the town?

If they allowed us to use cesspool to begin with and change to septic tanks and want us to absorb the cost because they want to change, why don't they help us out?

Like my daughter, she has a big bill she pays monthly. What's going to happen in 2021? We live in the back of the school. Below the elementary. Not in the blue. We have our own cesspool. We'll have to get our own line to connect to the street?

**M10** Doesn't solve the problem.

**M11** Be honest with each other by erasing

Cumulative impacts of two Naalehu + Paheala WWTPs 11 miles apart.

Below Hwy

I strongly encourage them to look at the property below Maile Road. It appears on paper that it's not that much different. It's interesting with waterways and lava that you wouldn't even know when they are cracks because of percolation. Running under Belt Road, is there any chance if they did expand with those yellow things, could that be expanded to the other side of the road? What's ideal for the county is not always ideal for the town.

#### 6.5 December 14, 6 PM

How much will this cost me?

I want the County to be responsible for this project. Let us know. Inform us and be honest and respectful to people.

This is about trust. Plus take into consideration we have a lot of elderly at these meetings. We need to get young people involved. Take it to school. Let kids give feedback.

I can help Cisco get people to meeting.

Project life expectancy? Pipes given slope and pressure. Mains. More detail.

I like this system. You can deal with waste environmentally. I'm excited.

I'm all about cost to individual homeowners.

As a homeowner, what kind of responsibilities is the County expecting of me?

How much will it cost?

Keep coming back to talking to people.

Thank you to both of you. A lot of time people come with arrogance and they will fix us. So thank you.



10349-01  
March 6, 2020

ref (27)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – October 10, 2018

Dear Ms. Demoruelle:

Thank you for your October 10, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

M-1

Hawaii Revised Statutes (HRS) Section 343-5 **Applicability and requirements** (a) states "Except as otherwise provided, an environmental assessment shall be required for actions that: (1) Propose the use of state or county lands or the use of state or county funds..." as well as, "(9) Propose any: (A) Wastewater treatment unit..."

However, Hawaii Administrative Rules (HAR) Title 11, Chapter 200, which implements HRS Chapter 343, differentiates between "agency actions" - those proposed by an agency to utilize state or county lands or funds; and, "applicant" actions" – those for which an applicant requires approval from an agency.

The Pāhala Large Capacity Cesspool Replacement project is a proposal by an agency (Department of Environmental Management) to use County funds, thereby "triggering" the need for an EA.

The September 23, 2108 Environmental Notice provided the following project description: "The County of Hawai'i Department of Environmental Management proposes to construct wastewater system improvements replacing the large capacity cesspools (LCCs) currently serving Pāhala, in order to comply with U.S. Environmental Protection Agency (EPA) regulations. The project improvements would include a new wastewater collection system located primarily within public streets in the Pāhala community, and a treatment and disposal system on land to be acquired by the County (TMK: 9-6-002: 018). The project would be partially funded by an EPA grant and by the Clean Water State Revolving Fund loan program.

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Letter to Ms. Sandra Demoruelle  
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The collection system would consist of approximately 12,150 linear feet of 8 to 12-inch diameter underground gravity flow piping in Maile, 'Ilima, Huapala, Hīnano, Hala, Puahala and Pīkake Streets. The treatment and disposal facility would occupy about 14.9 acres and consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen with an adjacent disinfection system to remove pathogens, and four slow rate land treatment basins for further treatment and disposal of the treated effluent. A perimeter security fence would enclose the entire facility. The existing LCCs and associated wastewater collection system would be abandoned."

M-2- N/A

M-3

Hawaii Administrative Rules Title 11 Department of Health Chapter 200 §11.1(d) does not include a requirement to withdraw a determination. Nor, is there a time stated for such a withdrawal.

M-4

The public outreach subcontractor did not prepare the Draft EA.

M-5

This is not a comment on the content of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

M-6

The quoted statement was from the Councilmember for the Kona district, in relation to the Kealakehe Aeration Upgrade and Sludge Removal project. The Kealakehe Aeration Upgrade and Sludge Removal project is not the subject of this Draft EA. The County of Hawai'i Department of Environmental Management considers the Pāhala Large Capacity Cesspool Replacement project important.

M-7

As stated in the article, additional funding for the Kealakehe Aeration Upgrade and Sludge Removal project was requested to replace the "badly eroded liners in several of the lagoons". The liner replacement was outside of the original project scope. Expanding the scope of any project generally necessitates additional cost in order to complete the work associated with that expanded scope.

M-8

Hawai'i Administrative Rules (HAR) Title 11 Chapter 200-10 **Contents of an environmental assessment** does not include a requirement for evaluating the fiscal impacts of a project on a County's budget or ability to obtain funding.

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M-9

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA, Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be repeated in the Final EA.

M-10

The Draft EA Section 2.2 sets forth the purpose of the Pāhala Large Capacity Cesspool Replacement project: "The purpose of the actions considered in this Environmental Assessment (EA) is to provide the infrastructure necessary to enable the County to comply with the SDWA and fulfill the compliance provisions of the AOC between EPA and the County with respect to closure of the Pāhala LCCs". The remaining portions of the Pāhala community are not serviced by the LCCs and hence not included in the Pāhala Large Capacity Cesspool Replacement

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project. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection system.

The Draft EA Section 2.3.1 states the treatment and disposal facility will be designed to provide an average dry weather flow capacity of 190,000 gallons per day, which will be sufficient capacity to allow the closure of the two LCCs. In addition, the Draft EA Appendix B states the wastewater treatment plant (WWTP) designed not to preclude treating future average dry weather flows up to 360,000 gpd to meet the future needs of the community, in accordance with the requirements established in the Ka'ū Community Development Plan Policy 120.

M-11

The Draft EA Section 4 discusses Cumulative Effects including the scope of analysis and also actions considered but excluded from analysis.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

**From:** B. Noelani Hong <noealoha@gmail.com>  
**Sent:** Wednesday, October 10, 2018 11:38 AM  
**To:** Public Comment  
**Cc:** B. Noelani Hong; josh green senator; kaiali'i Senator Kahele; Representative Tulsi Gabbard  
**Subject:** proposed site pahala waste water treatment plant

10349-01  
10/16/18

cc: BC, COH  
EPA, ERG

dear EA consultant mr okamoto,

what will prevent the "lagoon style treatment plant" from overflowing and running downhill over hwy 11 and lower lands in the event of heavy rains and flooding? hurricanes and tropical storms cause tremendous flooding from the slopes of mauna loa and have broken the roads and bridges along hwy 11. the bridge on hwy 11, at pahala entrance, ka'u hospital broke several years ago due to heavy rains and many bridges and roads on the road to wood valley, as well as the upland road from pahala to na'alehu also broke. with climate changes, i'm guessing that we will be facing more frequent heavy rains and flooding. This may present a serious health hazard, if the treatment plant overflows from excessive ground water.

if unable to address my question, pls forward my email to the appropriate county/state personnel. thank you.

Dr. Noelani Hong

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10349-01  
March 6, 2020

ref (28)

Dr. B Noelani Hong  
Via email: noealoha@gmail.com

**Subject:** Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project District of, Ka'ū, Hawai'i  
Response to Comment - October 28, 2018 11:38 a.m.

Dear Dr. Hong:

Thank you for your October 28, 2018 11:38 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follow:

The County is aware of two existing culverts that allow stormwater to flow across the Māmalahoa Highway in the vicinity of the project. The first is a box culvert located at the intersection with Maile Street that conveys stormwater under the highway. The second culvert is located approximately 600 feet east of the Maile Street intersection and was used to convey sugar mill flume water across the highway for disposal.

The Draft EA Figure 2.3 shows the intersection of Maile Street and Māmalahoa Highway lies at about 580 feet above mean sea level (MSL). The Draft EA Figure 2.2 shows the Pā'au'au Gulch crosses under Māmalahoa Highway near the hospital about 0.88 miles north of that intersection and lies at approximately 780 feet MSL or about 200 feet higher in elevation than the culvert at the Maile Street and Māmalahoa Highway intersection. Due to this distance and the elevation difference, surface flows at Site 7 would not affect the gulch. Similarly, the Kaimani Street and Māmalahoa Highway intersection lies about 0.84 miles north of the proposed facility site and at about 780 feet MSL. Surface flows at the facility would also not affect that intersection. Figures 2.2 and 2.3 will be repeated in the Final EA.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2- percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent

annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain."

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

Draft EA Section 3.23.2 (a) states:

"The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins."

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pahala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT

owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facility will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 Floodplain Management, Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event, as shown in the department of public works "Storm Drainage Standards".

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1 states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows during. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

10349-01

Letter to Dr. B Noelani Hong

Page 4

March 6, 2020

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read 'Keola Cheng', written in a cursive style.

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

**Earl Matsukawa**

10344-01  
10/16/18

cc: BC, COH  
EPA, ETRG

**From:** Dale A. Loper <z75dloer\_sv9@dallop.us>  
**Sent:** Saturday, September 29, 2018 7:46 AM  
**To:** Dora.Beck@hawaiicounty.gov  
**Cc:** Public Comment  
**Subject:** Pāhala Large Capacity Cesspool Replacement--Draft EA (AFNSI)

I urge you to rethink these large expense of land of money when there is an alternative to Hawaii's problem with cesspools.

Mobile system can be uses to travel to site where cesspools are at capacity.

Small systems at residential in rural areas with the need to pipelines( subject to breakage and or damage)

<http://www.busse-gt.com/>

Welcome ...

Green Technologies Inc. was founded by Ralf-Peter Busse, Ingo Schaefer and Anja Busse. Ralf-Peter Busse is the owner and manager of Busse GmbH Germany that developed the Busse MBR system and holds the patent. An independent engineering firm Busse GmbH has over 25 years of experience in the area of plant construction, especially the commissioning of industrial and waste water treatment systems. As a result of this extensive know-how the membrane activated sludge treatment process for the treatment of on-site waste water was developed.

Ingo Schaefer has been working since 2002 to increase the interest and awareness for the decentralized waste water treatment with membrane technology in the US and to get the Busse system certified, approved and established in North America. He is a US citizen based out of Chicago, Illinois.

Anja Busse owns and manages the German company Busse Innovative Systems GmbH that produces the Busse MBR systems and distributes them within Europe.

The Busse Innovative Systems GmbH is the current production facility for Busse MBR systems certified by NSF International. In the future it is planned to also establish a production facility in the US to manufacture the Busse small scale waste water treatment systems with MBR for the North American market.

MBR sewage treatment systems designed for 250 to 2000 Gal/d

The small scale sewage treatment system BusseGT with membrane bioreactor technology (MBR) turns domestic waste water into useable non-potable water that meets all reduction standards.

**Wastewater Recycling**

The domestic waste water from decentralized and centralized buildings is recycled by the Busse membrane bioreactor technology and can be re-use as non-potable water, for example for toilet flushing or garden irrigation.

Closing this ecological loop is not only protects the environment and saves drinking water resources but also results in cost savings.

**Special Applications**

The application range of the BusseGT systems compasses solutions for yachts, theatre & restaurant ships, house boats, hotel resorts, campgrounds, historical buildings, like castles and palaces as well as mobile container systems. The MBR technology is even used for waste water free fish farming.

**Container plant**

The modular structure makes the Busse MBR systems fit for installation in a container as a mobile solution for waste water recycling at any place in the world. Turn-key MBR system can be delivered in small sizes from 4 to 100 inhabitants. A water holding tank next to the building is used as a pre-cleaning chamber.

**MBR module for underground installation**

The system consists of an MBR module which is made out of polyethylene and has to be installed partly below ground. It is easily accessible. A pumping station with aerated coarse matter separator is part of the system. This pumping unit has to be installed in an existing waste water holding tank.

**Systems for ships and house boats**

Due to its compact and modular structure the Busse MBR system can be adapted for installations on house boats, theatres, museums and restaurant ships, river boats as well as larger yachts. The effluent from the system can be re-used for flushing toilets, cleaning the deck or can be discharged directly into the surrounding waters.

**MBR sewage treatment systems designed for 250 to 2000 Gal/D**

Small scale BusseGT systems for complete installation in houses for 250 / 500 / 750 Gal/d

Due to its small footprint and odourless operation the BusseGT small scale sewage treatment systems can be installed in the basement of a house. The waste water from the household enters the system by gravity flow. No expensive earthmoving is necessary.

Small scale BusseGT systems in combination with existing septic tanks for 250 / 500 / 750 Gal/d

If the waste water cannot enter the system by gravity flow an outside in ground waste water buffer tank is needed or an existing septic tank can be used. The tank is then equipped with a pumping unit with an aerated coarse matter separator and serves as the first stage of the system. The pre-cleaned water is then pumped into the MBR stage of the BusseGT.

Small scale sewage treatment systems BusseGT for 1000 Gal/d



Compartments in different sizes and made of different materials are available to build the BusseGT system types for 16 and 24 inhabitant equivalents. Depending on the size and floor plan of the building tanks in sizes of 1000, 1500, 2000 or 3000 liters can be selected for use in the system.

Small scale sewage treatment systems BusseGT for 1500 Gal/d

Due to its modular structure the BusseGT allows for individual solutions that can be adapted to almost any room. Even longer distances between the existing in ground septic tank and the room where the MBR stage is installed pose no problems.

Small scale sewage treatment systems BusseGT for 2000 Gal/d

The odourless and extremely quiet operation of the BusseGT systems allow for an installation inside of buildings that are designed for living and working. The installation inside closed rooms makes the maintenance service and operational inspection of the systems very easy.

Dale A. Loper  
z75dloter\_sv9@dallop.us

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10349-01  
March 6, 2020

ref (44)

Mr. Dale A. Loper  
z75dloter\_sv9@dallop.us

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - September 29, 2018 7:46 a.m.

Dear Mr. Loper:

Thank you for your September 29, 2018 7:46 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows.

As stated in the Draft EA Section 2.1.4, in 2003, C. Brewer requested assistance from the County to close the large capacity cesspools (LCCs) in Pāhala. Further, "Voting took place via mail for the Pāhala community to choose the preferred sewer improvement alternative resulting in 87 percent of the returned ballots in favor of installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County."

The Draft EA Section 2.3.1 states the treatment and disposal facility will be designed to provide an average dry weather flow capacity of 190,000 gallons per day. In addition, the Draft EA Appendix B states the wastewater treatment plant (WWTP) will be designed not to preclude expansion to treat future average dry weather flows up to 360,000 gpd to meet the future needs of the community, in accordance with the requirements established in the Ka'ū Community Development Plan Policy 120. The information provided in your message shows units with a treatment capacity of 250 to 2,000 gallons per day. Thus, these systems do not have sufficient capacity to accommodate the flows for the Pāhala Large Capacity Cesspool Replacement project.

Use of a system of 250 to 2,000 gallons per day to treat the wastewater generated by each privately-owned parcel in the community currently served by the LCCs would likely necessitate siting multiple units within private property. As outlined in the Draft EA, Appendix B Section 7.5.4, issues associated with individual wastewater systems include:

- locating the treatment units within developed private parcels, many of which are small (less than 10,000 square feet) and significantly improved,
- insufficient land area within developed private parcels to effectively use/dispose of treated effluent without impacting adjacent parcels, and

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Letter to Mr. Dale A. Loper  
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March 6, 2020

- soil conditions and subsurface geology unsuitable for effluent disposal compliant with Hawai'i Administrative Rules (HAR) Title 11 Chapter 62-34 requirements, potentially necessitating the import of suitable fill soils or elevated mound systems.

This information will be repeated in the Final EA.

Additional issues include: access for construction equipment, ownership of the units, and operation and maintenance of the units either by the County of Hawai'i on private property or by individual property owners in this remote location.

This information will be added to the Final EA, section 2.8.2.

Based on the above, use of small capacity treatment units for this project does not appear to be a practical and feasible option for the County.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

**From:** ngaire gilmour <ngaire.joy@gmail.com>  
**Sent:** Wednesday, October 17, 2018 10:30 AM  
**To:** Public Comment  
**Subject:** A question regarding the DRAFT EA:PAHALA Attn: Earl Matsukawa

10349-01  
10/21/18

cc: BC CDM  
EPA ERG

Aloha,  
I appreciate any time you can afford me with my question so I may submit an accurate comment.

In preparing my comments for the Pahala draft EA I came upon something that I need your assistance in clarifying.  
It was my understanding that one of the gentlemen presenting said the reason the sewage system was being expanded beyond what was required by the FEDS was because it was part of the CDP.

Can you please direct me to the section in the CDP that states this? All I could find (admittedly, I did not read it in its entirety) was 5.8.2, Policy 120 that states: "Extend the primary wastewater collection lines in Pahala and Na'alehu so that infill development projects can connect wastewater systems built for new subdivisions to the County system".  
Obviously, this does not speak to what is being referred to as "Newly Accessable Lots".

Thanking you in advance for getting back to me as soon as possible, as I wish to submit my comments in a timely fashion.

Ngaire Gilmour  
96-3190 Pakalana St.  
Pahala, HI 96777

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10349-01  
March 6, 2020

ref (29)

Ms. Ngaire Gilmour  
[ngaire.joy@gmail.com](mailto:ngaire.joy@gmail.com)

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - October 17, 2018 10:30 a.m.

Dear Ms. Gilmour:

Thank you for your October 17, 2018 10:30 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Community Large Capacity Cesspool (LCC) Replacement project.

The Draft EA Section 6.2.2 discusses the Ka'ū Community Development Plan (CDP): "Section 5 of the CDP prioritizes improvements in infrastructure, facilities, and services, including Section 5.8 which applicable to ...Environmental management facilities, including expanded sewer lines, ...". As you noted, Policy 120 is to "Extend the primary wastewater collection lines in Pāhala and Nā'ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems."

The collection system will be consistent with Policy 120 as the improvements for the Pāhala (LCC) Replacement project have been designed not to preclude accommodating the Pāhala community. Similarly, the treatment and disposal facility has been designed not to preclude accommodating the wastewater flows from the collection system from the Pāhala community.

The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the Pāhala large capacity cesspools (LCC). The Draft EA Section 2.3.2 discusses the construction of a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current collection system includes facilities located in the backyards of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from individual landowners to enter them, through private property, to inspect, maintain, repair or replace existing sewer facilities: all activities essential to an efficient, functioning system. As a result, the proposed new collection system would consist of a total of approximately 12,150 linear feet (LF) (2.3 miles) of corrosion-resistant polyvinyl chloride (PVC) piping located almost entirely within the right of way (ROW) of eight public streets.

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Letter to Ms. Ngaire Gilmour

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March 6, 2020

Also as outlined in the Draft EA, Section 2.3.2, the new collection system would be subject to the Hawai'i County Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.”*

Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

The above information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

10399-01  
10/21/18  
cc: BC  
COM  
EPA  
ERG

Jerome Warren  
P.O. Box 951  
Naalehu, HI 96772  
(808) 929-8192  
17 OCT 2018

Earl Matsukawa  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

**SUBJECT: DRAFT EA: PAHALA COMMUNITY LARGE CAPACITY CESSPOOL (LCC) REPLACEMENT PROJECT**  
INFORMATIONAL MEETING, OCTOBER 10, 2018

**COMMENTS [Continued]**

Back in 2004 the large capacity septic tank system was approved by the Ka'u homeowners who are on the old plantation gang-cesspools.

In 2007, Hawaii County published a Final Environmental Assessment for Naalehu and Pahala Villages Large Capacity Cesspool Conversion Project. The plan implements septic tanks for wastewater treatment. Then the County switched the plan without telling the public. They abandoned the septic tank system and started planning for a lagoon system and started planning for a lagoon system without public review.

*Jerome Warren*



1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826  
T (808) 946-2277 F (808) 946-2253  
W <http://www.wilsonokamoto.com>  
Attention: Mr. Earl Matsukawa

**SUBJECT: DRAFT EA: PĀHALA COMMUNITY LARGE CAPACITY CESSPOOL (LCC) REPLACEMENT PROJECT**  
INFORMATIONAL MEETING, OCTOBER 10, 2018

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\_\_\_\_\_

(include additional sheets as necessary)

PLEASE PRINT: Name: Jerome Warren Phone: (808) 929-8192  
Organization: Self  
Address: P.O. Box 951  
Naalehu HI 96772  
Email: NONE

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).

Draft Environmental Assessment on the  
Proposed Pahala Community Large Capacity Cesspool (LCC) Replacement Project

Public Information Meeting 10/10/2018

PERSONAL NOTES



10349-01  
March 6, 2020

ref (30)

Mr. Jerome Warren  
P.O. Box 951  
Naalehu, Hawaii 96722

Subject: Draft Environmental Assessment (EA)  
Pāhala Large Capacity Cesspool Replacement Project  
District of, Ka'ū, Hawai'i  
Response to Comment - October 19, 2018

Dear Mr. Warren:

Thank you for your October 19, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Draft EA, Section 2.8.2(a), discusses use of a community septic tank as follows:

"Community Septic Tank. Based on current design criteria and current flow projections, an approximately 800,000-gallon community septic tank would be necessary to provide the extended detention times needed to optimize treatment performance, to avoid the need for frequent septage pumping, and to account for peak flow rates. A community septic tank of this size would require pumping on a 3-year interval. Septic tanks produce hydrogen sulfide, reduced sulfur compounds, and other odorous gases; a community septic tank would concentrate these emissions to a single point source, requiring treatment with a dual-stage scrubber to avoid nuisance odor conditions. More significantly, a community septic tank would not be capable of achieving the effluent quality standards (less than 30 mg/L of both BOD5 and TSS) specified in HAR 11-62-23.1. Therefore, use of a community septic tank is not considered to be feasible."

Further details for the use of community septic tanks are also provided in the Draft EA, Appendix B, Section 7.5.1 and 7.5.2 including the need for a DOH variance from HAR 11-62-23.1 requirements (which must be renewed every five years), and the need to provide for wastewater treatment and disposal capacity to meet the rest of the community's current and future needs.

The Draft EA Section 2.9 discusses the relationship between the current project and the 2007 Final EA for the Naalehu-Pāhala Large Capacity Cesspool (LCC) Conversion project. As stated in Section 2.9:

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Letter to Mr. Jerome Warren  
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“After the issuance of the Final EA and Negative Declaration/FONSI in 2007, the County conducted additional study and evaluation of the proposed LCC conversion project. The County eventually concluded that the LCC conversion project described in the 2007 Final EA would not meet the need to provide a collection system and a treatment and disposal facility, close the LCCs, and provide for the future needs of the Pāhala community. This determination was based on several factors...”

The Draft EA Section 2.8.2 (a) discusses the conversion of LCC1 to a seepage pit for septic tank effluent disposal, as documented below:

- “Converting LCC to Seepage Pit. Converting LCC 1 to a seepage pit regulated as an injection well (LCC 2 could not be converted as it is on private land) would lead to numerous potential compliance issues with HAR 11-23-07, which regulates injection wells. The condition and structure of LCC 1 is unknown, and HAR 11-62-25 requires all new and proposed effluent disposal systems are required to have a backup system. No such system could be feasibly constructed as new injection wells are not allowed.”

Pāhala is located mauka of the UIC line, as such conversion of one or more LCC to a seepage pit for disposal of septic tank effluent would be subject to HRS 340E and Hawai‘i Administrative Rules Title 11, Department of Health, Chapter 23, Underground Injection Control (HAR Chapter 23). In 2018, H.B. No. 1934, H.D. 1, S.D. 2 was enacted as Act 131 which amended Section 340E-2 to add:

*“The director shall promulgate regulations establishing an underground injection control program. Such program shall prohibit any underground injection which is not authorized by a permit issued by the director; provided that the director shall not issue permits for the construction of sewage wastewater injection wells unless alternative wastewater disposal options are not available, feasible, or practical;”*

The Draft EA Section 2.8.2 (a) also discusses the leachfield option considered for septic tank effluent disposal as outlined below: “Leachfield Disposal. To meet DOH’s leachfield design criteria, a minimum of 30 acres of land would be required to meet loading rate and redundancy requirements. Achieving even distribution of effluent over a leachfield of this size would be challenging. Therefore, leachfield disposal is not considered to be feasible.”

The above information will be repeated in the Final EA.

The Draft EA Section 7.0 provides information regarding the community outreach program for the current proposed action, including meetings starting in December 2017.

The Draft EA Section 2.1.4, History of Wastewater Management in Pāhala, will be expanded in the Final EA to provide the following additional information:

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Letter to Mr. Jerome Warren  
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Field investigation conducted on February 4, 2009 on the property conveyed by C. Brewer for a treatment/disposal site in Nā‘ālehu showed unacceptable percolation rates, making converted seepage pit or leach field options less desirable in this area.

On December 13, 2008 a community meeting sponsored by Councilman Guy Enriques was held at the Nā‘ālehu Community Center to discuss the Nā‘ālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meeting, an informational handout prepared by the County’s Wastewater Division stated that adequate land for the treatment and disposal system had not been identified in Pāhala. A preliminary location for a treatment and disposal site below the Old Pāhala Mill site was not acceptable due to reports of archaeological sites in the area, and outlined the benefits of a lagoon type treatment and disposal system. At an April 25, 2010 community meeting at the Pāhala Community Center, which was also sponsored by Councilmember Enriques, the meeting informational handout stated the County was investigating available properties for siting wastewater treatment/disposal facility in Pāhala. The handout also stated that all properties accessible to the new sewer system would be required to connect in accordance with Hawaii County Code Chapter 21.

Also, although not specific to the Pāhala project, it was stated at a July 22, 2016 2:00 p.m. presentation at the Nā‘ālehu Community Center that the County had purchased the parcel containing the makahiki grounds in Nā‘ālehu for a lagoon type wastewater treatment/leach field disposal system.

The Draft EA Section 7 provides information regarding the five “talk story” sessions held in December 2017. Section 7 identifies the various issues, concerns, environmental impacts and mitigations measures which were addressed in the Draft EA.

On September 26, 2018, a public notice was published in both the Hawaii Tribune Herald and West Hawaii Today to advertise the October 10, 2018 public information meeting conducted by the County in Pāhala at the Ka‘ū Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA and process for submitting comments. A public notice was also published in the October 1, 2018 online and print editions of the Ka‘ū Calendar and made available on the Ka‘ū News Briefs web site <http://kaunewsbriefs.blogspot.com>. All materials circulated, posted and published for the October 2018 meetings included the electronic link to the Draft EA at <http://health.hawaii.gov/oeqc/>.

The Draft EA was made available online on the County of Hawai‘i and EPA websites and in public libraries in Nā‘ālehu and Pāhala beginning on September 23, 2018. Upon public request, 11 printed copies of the Draft EA were made available at both the Nā‘ālehu and Pāhala libraries on November 7, 2018. The County’s transmittal requested the library make the copies available for checkout. The Draft EA was also posted on the County of Hawaii and EPA websites at:

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Letter to Mr. Jerome Warren  
Page 4  
March 6, 2020

[http://records.co.hawaii.hi.us/weblink/1/edoc/96064/Pahala%20FINAL%20DRAFT%20EA%20and%20Appendices\\_508\\_9-11-18.pdf](http://records.co.hawaii.hi.us/weblink/1/edoc/96064/Pahala%20FINAL%20DRAFT%20EA%20and%20Appendices_508_9-11-18.pdf)  
<https://www.epa.gov/uic/proposed-pahala-community-large-capacity-cesspool-replacement-project-draft-environmental>

At the October 10, 2018, public information meeting, the County provided staff to personally assist commenters in preparing written comments on the Draft EA. In addition, during this meeting, the County identified community volunteers attending the meeting who were proficient in Hawaiian, Tagalog, and English to assist anyone who identified as needing assistance in providing written comments on the Draft EA.

The public notice also stated that a second part of the meeting on October 10, 2018 would address Section 106 of the National Historic Preservation Act (NHPA) involving consultation with Native Hawaiian Organizations and Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, or cultural religious attachment to the proposed project area. Eight persons placed their names on a sign-in sheet to contribute during the Section 106 part of the meeting; however, no comments or information from the public were forthcoming during this meeting.

Appropriate portions of this historical information related to public outreach regarding closure of the Pāhala LCCs will be included in the Section 7 of the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

**Earl Matsukawa**

**From:** ngaire gilmour <ngaire@hotmail.com>  
**Sent:** Saturday, October 20, 2018 12:40 PM  
**To:** Public Comment  
**Subject:** Comments on Draft EA for Pahala LCC Replacement Project  
**Attachments:** Large Capacity Cesspool EA 10.20.18.odt

Please find my comments in the attached document.  
Mahalo,  
Ngaire Gilmour

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10349-01  
10/22/18  
CC RC COH  
EPA ERG



Ngaire Gilmour,  
PO Box 843,  
Pahala, HI 96777  
ngaire\_@hotmail.com

October 20, 2018

Wilson Okamoto Corp.,  
1907 South Beretania St, Suite 400,  
Honolulu, HI 96826

Attention: Mr. Earl Matsukawa

**Subject: Draft EA: Pahala Community Large Capacity Cesspool (LCC) Replacement Project**

1. My first concern is regarding 'newly accessible lots' for the near future as well as more long term.
  - a) Homes on gang cesspools (LCC) will be grandfathered onto the new sewage system, as they should be, but (it is my understanding) the County has decided to extend the system beyond the LLC's and beyond what is required by the Federal Government at this time.
    - Ⓢ This will require 'newly accessible lots' to join the new sewage system at the lot owner's expense'.
  - b) I fully support a project that will benefit the environment, as this will, but the impact of the cost of connecting on each 'newly accessible lot' will have a devastating financial impact on a community that is working very hard to get by.
    - Ⓢ Pahala is not a community of income properties. For the most part, the homes in this community are single family, passed down through the generations, and often housing multiple generations. For the County to consider penalizing these owners because they were on independent systems that were installed legally will only bring confrontation and opposition to a plan that, in the long run, will be beneficial. This could cause the County to loose support for the project in the community, rather than it being perceived as a welcome benefit.
  - c) The County should consider grandfathering in all existing 'newly accessible lots' with functional cesspools and septic tanks.
2. It was disappointing to be informed that there will be no independent energy source for the sewage facility. Solar, wind and methane are all possibilities, but just "hooking up to HELCO" is not looking to the future. Please look beyond the 'grid' for energy.
3. Please consider the suggestion made at the meeting on 10/10/18 to look at the possibility of moving the project across the highway, using the current tunnel that runs under the highway that was installed by the sugar industry.

10349-01  
10/22/18  
cc: BC COH  
EPA ERG



10349-01  
March 6, 2020

ref (31)

Ms. Ngaire Gilmour  
ngaire.joy@gmail.com

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - October 20, 2018 12:40 p.m.

Dear Ms. Gilmour:

Thank you for your October 20, 2018 12:40 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

1.
  - a) The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the Pāhala large capacity cesspools (LCC). The Draft EA Section 2.3.2 discusses the construction a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current LCC collection system includes lines located the backyard of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from each landowner to enter them, through private property, to inspect, maintain, repair, or replace existing sewer facilities: all activities essential to an efficient, functioning system. As a result, the proposed new collection system will be located within the public street rights-of-way and to close the LCCs, there will be parcels that become "newly accessible" to the collection system. The collection system is not being expanded under the proposed action beyond the area needed to close the LCCs. This information will be repeated or included in the Final EA.
  - b) The Draft EA Section 2.3.2 discusses Hawai'i County Code, Chapter 21, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*"(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.*

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Letter to Ms. Ngaire Gilmour  
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The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened two additional public meetings on October 9, 2018 and March 21, 2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

This information will be added to the final EA Section 7.

- c) County Council approval would be required to grandfather or fund connections of newly accessible properties to the new collection system.

2.

Although the project does not currently include alternative energy systems such as photovoltaic, solar or wind power as a total replacement to the HELCO grid, feasible alternatives utilizing energy systems can be added in the future if prioritized and funded by County Council. A source of methane is not currently available in the Pāhala area, natural gas distribution infrastructure is not in place in this remote location, and the Proposed Alternative, utilizing natural, low energy, treatment systems does not provide for wastewater-related methane production and capture.

3.

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected

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Letter to Ms. Ngaire Gilmour  
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March 6, 2020

configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

The above information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



**WILSON OKAMOTO**  
CORPORATION  
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1907 South Beretania Street, Suite 400  
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W <http://www.wilsonokamoto.com>  
Attention: Mr. Earl Matsukawa

PAGE 1 of 2  
10349-01  
10/22/18  
CC: BC COH  
EPA ERG

**SUBJECT: DRAFT EA: PĀHALA COMMUNITY  
LARGE CAPACITY CESSPOOL (LCC)  
REPLACEMENT PROJECT  
INFORMATION MEETING, OCTOBER 10, 2018**

COMMENTS BY EDUARDO ANDRADE JR.

1. I'M NOT IN FAVOR OF THE LOCATION OF THE WASTE  
TREATMENT PLANT.

REASON: A. PĀHALA HAS ONLY TWO ENTRANCES FROM  
HIGH WAY 11. SHOULD WE BE BLOCK IN WHEN  
THE BIG RAINES FLOOD ONE SIDE WE HAVE THE  
OTHER. WATER THAT RUNS FROM PĀHALA TOWN  
ENDES UP AT THE LOCATION OF THE TREATMENT  
PLANT. IF SOMETHING SHOULD HAPPEN AND  
YOU WILL FLOOD THE HIGH WAY. THAT IS DANGEROUS.

B. I BELIEVE THERE IS A CAVE WHERE PEOPLE WERE  
PLACED ON SELVES. AS GROW UP IN PĀHALA I SAW  
THIS BURIAL PLACE. I DON'T REMEMBER THE LOCATION.  
ALL I REMEMBER, IT WAS BETWEEN THE HUSKING PLANT  
AND THE PLANT SITE, SOMEWHERE. I HAVE AN INFORMATIONAL  
HANDOUT DATED APRIL 25, 2010? IT SAID THAT BELOW  
THE MILL WAS NOT A GOOD LOCATION BECAUSE OF THE ARCHAEO-  
LOGICAL SITE.

(include additional sheets as necessary)

PLEASE PRINT: Name: EDUARDO ANDRADE JR Phone: 928-0808  
Organization: HOME OWNER & BE MILL SUPT. FOR C. BREWER  
AND MAINTAIN THE SEWAGE FOR PĀHALA & NEARBY  
Address: P.O. BOX 514  
PĀHALA HI 96777  
Email: \_\_\_\_\_

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).

PAGE 2 of 2



**WILSON OKAMOTO**  
CORPORATION  
INNOVATORS • PLANNERS • ENGINEERS

1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826  
T (808) 946-2277 F (808) 946-2253  
W <http://www.wilsonokamoto.com>  
Attention: Mr. Earl Matsukawa

**SUBJECT: DRAFT EA: PĀHALA COMMUNITY  
LARGE CAPACITY CESSPOOL (LCC)  
REPLACEMENT PROJECT  
INFORMATION MEETING, OCTOBER 10, 2018**

REASONS: SMALL - I DON'T WANT TO ENTER THROUGH THEIR  
SMALL SEWAGE.

DO I WOULD LIKE TO SEE YOU RELOCATE THE PLANT  
BE LOW THE HIGH WAY. THEY TOLD ME IT WILL COST  
BIG BUCKS TO GO UNDER THE HIGH. I KNOW IT WOULDN'T  
BECAUSE THERE IS A CULVERT THAT IS LOCATED NEXT TO  
THE ENTRANCE OF MAC NUT HUSKING PLANT. THAT CULVERT  
WAS MADE AND USED TO TRANSPORT TRASH TO FILL THE  
WASTE LAND. ITS THEIR USE IT. SO PLEASE THINK ABOUT  
IT. BE LOW THE HIGHWAY WILL NOT ENDANGER THE  
HIGH IF ANYTHING SHOULD HAPPEN. BELOW THE HIGHWAY  
WILL BE A GOOD SITE.

ALL OF PĀHALA WAS NOT NOTIFIED ABOUT THESE 3 MEETINGS

(include additional sheets as necessary)

PLEASE PRINT: Name: EDUARDO ANDRADE JR Phone: 928-0808  
Organization: HOME OWNER  
Address: P.O. BOX 514 PĀHALA HI 96777  
Email: \_\_\_\_\_

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).



10349-01  
March 6, 2020

ref (33)

Mr. Edward Andrade, Jr.  
P.O. Box 514  
Pāhala, Hawaii 96777

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Kaʻū, Hawaiʻi  
Response to Comment - October 19, 2018

Dear Mr. Andrade:

Thank you for your October 19, 2018 comment letter regarding the County of Hawaiʻi Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

A.

The County is aware of two existing culverts that allow stormwater to flow across the Mamalahoa Highway in the vicinity of the project. The first is a box culvert located at the intersection with Maile Street that conveys stormwater under the highway. The second culvert is located approximately 600 feet east of the Maile Street intersection and was used to convey sugar mill flume water across the highway for disposal.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawaiʻi Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project

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proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawaiʻi Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.2.3.2 (a) states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Mamalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pāhala public meetings held in December 2017 and October 2018, the State of Hawaiʻi Department of Transportation (DOT) Hawaiʻi District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Mamalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facility will not be located within the area of the culvert.

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As stated in the Draft EA, the on-site stormwater management system will meet the requirements of Hawai'i County Code (HCC), Chapter 27 Floodplain Management, Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event, as shown in the Department of Public Works Storm Drainage Standards.

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1 states the aerated lagoons will be lined with liners to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

B.

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked

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to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3 provides the Preliminary Site Plan for the new treatment and disposal facility, shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019, a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary and outside of the area of potential effect considered in consultation with SHPD as required by the National Historic Preservation Act.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/webink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

A geophysical survey of the proposed area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the Final EA.

C.

The Draft EA Section 3.14.2 states:

"Wastewater treatment plants can be a source of nuisance odors to the surrounding community if not properly designed or operated. Typically, nuisance odors are most commonly associated with anaerobic (without oxygen) conditions and with processing of residual solids. Incoming raw sewage flows to the proposed wastewater treatment and disposal facility would first be routed to the headworks, which is the facility where the solids are removed from the flows.

To mitigate potential nuisance odors, the headworks would be equipped with an odor control system with a granulated activated carbon (GAC) scrubber to remove odors. A package GAC scrubber passes the odorous air through a bed of activated carbon, which

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adsorbs the odorous constituents within the pore spaces of the carbon. The County currently operates GAC scrubbers at other facilities, and it has been proven to be an effective means of odor control both locally and nationwide. The treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring. The disposal groves would be irrigated with fully-treated and aerobic secondary effluent from the treatment process; irrigation with secondary effluent is not associated with development of nuisance odor conditions.”

This information will be included in the Final EA Section 3.14.2.

D.

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal

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facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

On September 26, 2018, a public notice was published in both the *Hawaii Tribune Herald* and *West Hawaii Today* which stated a public meeting was to be held on October 10, 2018 for the Pāhala Community Large Capacity Cesspool Replacement Project Draft EA. A public notice was also published in the October 1, 2018 print and online editions of the *Ka'ū Calendar* and made available on the Ka'ū News Briefs web site <http://kaunewsbriefs.blogspot.com>. Fliers were also posted in public venues such as the community shopping center, realtor office, grocery store, library, and the Pāhala Community Center.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 meeting were mailed to all property owners on record adjacent to the proposed collection system. This direct mailout included an invitation from DEM to workshops conducted prior to the October 10 public meeting. The workshop for owners served by C. Brewer lines was held on October 8, and the mailout for this meeting also included anyone with a current sewer account. The workshop for owners of newly accessible properties was convened on October 9. In addition to the direct mailout, online announcements for the October 8 and 9 workshops were available on the Ka'ū News Briefs website.

This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

**Earl Matsukawa**

**From:** Sophia Hanoa <hanoa.sophia@aol.com>  
**Sent:** Tuesday, October 23, 2018 4:47 PM  
**To:** Public Comment  
**Subject:** Draft EA PAHALA COMMUNITY LARGE CAPACITY CESSPOOL (LCC) Sophia Hanoa

10899-01  
10/25/18  
CC: BC COH  
EPA ERCS

October 23, 2018

Attention Mr. Earl Matsukawa,

My name is Sophia Hanoa, I was born in Pahala and currently a resident. I am in opposition of the EA and proposed site selected for the sewage wastewater treatment plant for the following reasons.

1. No disclosure or consultation with the residents of Pahala.
  - a. In December of 2018 five meetings were held in Pahala. The County failed to address and communicate with residents resulting in low turn out for all meetings.
  - b. I attended the last meeting because I was notified by a neighbor 30 minutes prior to the fifth meeting. There, the few residents voiced their opinions about not being notified.
  - c. At the meeting we were assured that this was just a display of things that the County was working on. No site was chosen. Everything is still up in the air. We were told that the team would return in April to update the community. They never did.
  - d. In September 2018 some of the residents received notification about scheduled meetings and a draft EA being released on the 23rd. Again, poor communication, resulting in low turn out for meetings.
  - e. One copy of the Draft EA was sent to the Pahala Library. I was not able to check it out because it was a reference item. How was the community to review the EA? Especially the elderly.
2. The proposed site has significant value to the community.
  - a. There are burials and caves within the proximity of proposed site. Community members have witnessed seeing the caves and burials. It was deemed a site not to be used by the County back in 2008.  
A handout was distributed by then County Council Rep. Guy Enriques to everyone in the community. Why did the County waste money on doing an EA regarding the same site?
  - b. Not only is Maile street the original road in and out of Pahala. It serves as an emergency exit. If the County fences off that property, will the road be closed if there's an emergency? Will Mamalahoa Highway be closed too?  
If the gulch near the hospital overflows the people will be locked in. What happens to the patients who receive dialysis?
3. The proposed site should be relocated below Mamalahoa Highway, further away from the town, for reasons of safety, environmental hazards, historically and aesthetically.
  - a. The County should have consulted with resident Edward Andrade. He was the manager of the C. Brewer Sewage system for years. No one consulted him. He says the best place for the Sewage Plant would be below the highway.  
C. Brewer had a drain going under the highway that was used by the Sugar Plantation. Flooding here in Pahala would be hazardous for the residents should the sewage plant be at the proposed site as all of the flood waters from the town end up at the proposed site.
  - b. The residents of Pahala have a high rate of asthma. Not only do we have the chemicals left in the ground by C. Brewer, we have the dust and chemicals from the Macadamia Nut Co. and the vog from Tutu Pele.  
There have been studies showing negative impacts on residents who live next to a sewage plant.
  - c. Ka'u High School is the oldest school here on the island and second in the State. Ka'u Hospital is just around the bend from the proposed site. Why should the people here in Pahala have to see a sewage plant when entering our town?
  - d. Kamehameha Schools owns the proposed site and they also own the site below the highway.
4. The County has not been honest with the residents of Pahala and has caused undue psychological and financial stress while dividing the community since 2007 until present.
  - a. The County is fast tracking this project without input from the community. Residents have been forced to pay sewage fees since 2007 and are still connected to their original cesspools.
  - b. Some residents won't have any cost for this conversion project, while others will have to pay 20,000 to tie into the system and also pay to cover their existing cesspools. The elderly are on fixed incomes.

- c. It was stated at the meeting in October that the residents will have to come up with their own funds and that some of them will have to be hooked up by 2021 and the rest by 2050.
- d. It was stated at the same meeting that this was not a segmented project of a whole, yet according to documents, Na'alehu and Pahala was a joint venture. No one told the community otherwise and that funding was changed from Na'alehu to Pahala.
- e. Documents show that the County purposefully chose a site under 15 acres so that they would not have to deal with the land use commission. This must be investigated. The land use commission states 15 acres or prime agricultural land which is what the proposed site is listed as on the County map.

I believe that what I have stated should be taken into consideration. I do know that a sewage plant is needed. It should be placed in a proper area, with the least negative impact on the community. We care about our quality of life here and it is our responsibility to make wise decisions for the generations to come. I hope you do too.

Mahalo,  
Sophia M. Hanoa



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ref (41)

Ms. Sophia Hanoa  
[sohia.hanoa@aol.com](mailto:sohia.hanoa@aol.com)

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Kaʻū, Hawaiʻi  
Response to Comment - October 23, 2018 4:47 p.m.

Dear Ms. Hanoa:

Thank you for your October 23, 2018 4:47 p.m. comment message regarding the County of Hawaiʻi Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Community Large Capacity Cesspool Replacement project. Our responses follow:

1. a. b. c. d. The Draft EA Section 7 documents the 5 public meetings held in Pāhala December 12, 13 and 14, 2017 to discuss the Pāhala Large Capacity Cesspool Replacement project. As documented in the Draft EA, the community outreach program for the current project was designed as “talk story” sessions to optimize community conversations in informal sessions. Further, as documented in the Draft EA, invitations and announcements for the talk story sessions were intended to reach all audiences, as follows:

- Property owners with C. Brewer lines on their property were mailed letters from DEM inviting them to these sessions. The letters included stamped, mail-in postcards to facilitate the RSVP process.
- Fliers were hand-delivered to “newly-accessible” properties.
- Organizational leaders were provided copies of fliers announcing meetings and asked to circulate among their members.
- Fliers were posted in public venues, such as the post office, the Pāhala Community Center and the Kaʻū Hospital.
- Several online announcements were included in Kaʻū News Briefs available at <http://kaunewsbriefs.blogspot.com>.

This information will be repeated in the Final EA.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 meeting were mailed to all property owners on record adjacent to the proposed collection system. On October 26, 2018 letters were mailed to property owners on record adjacent to the proposed collection system informing them of the extension of the public comment period to December 10, 2018.

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On September 26, 2018, a public notice was published in both the *Hawaii Tribune Herald* and *West Hawaii Today* which stated a public meeting was to be held on October 10, 2018 for the Pāhala Community Large Capacity Cesspool Replacement Project Draft EA. A public notice was also published in the October 1, 2018 online and print editions of the *Kaʻū Calendar* and made available on the Kaʻū News Briefs web site <http://kaunewsbriefs.blogspot.com>.

This information will be included in the Final EA.

The Draft EA Section 7 will be revised to add that, on March 21, 2019, the County held another meeting in Pāhala which included a presentation to provide information on financing options available to owners of parcels which would become accessible to the County collection system. The purpose of the meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pāhala Community by March, 2019.

1. e. On, November 7, 2018, the County of Hawaiʻi hand delivered eleven copies of the Draft EA to the Pāhala Public Library and eleven copies to the Nāʻālehu Public Library. The County’s transmittal requested the library make the copies available for checkout. This information will be included in the Final EA Section 7.

All materials circulated, posted and published for the October 2018 meetings included the electronic link to the Draft EA at <http://health.hawaii.gov/oeqc/>. The Draft EA was also posted on the County of Hawaii and EPA websites at:

- [http://records.co.hawaii.hi.us/weblink/1/edoc/96064/Pahala%20FINAL%20DRAFT%20EA%20and%20Appendices\\_508\\_9-11-18.pdf](http://records.co.hawaii.hi.us/weblink/1/edoc/96064/Pahala%20FINAL%20DRAFT%20EA%20and%20Appendices_508_9-11-18.pdf)
- <https://www.epa.gov/uic/proposed-pahala-community-large-capacity-cesspool-lcc-replacement-project-draft-environmental>

This information will be included in the Final EA.

2. a. The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it



will be possible to avoid at least one known historic property. The Draft EA Figure 2.3, which provides the Preliminary Site Plan for the new treatment and disposal facility, shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on-site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with SHPD as required by the National Historic Preservation Act.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/weblink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the final EA.

On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā'ālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meeting, an informational handout prepared by the County's Wastewater Division provided a brief history of the project documenting that, in 2004, Mayor Kim's office used a ballot system to get input from property owners regarding different wastewater treatment/disposal alternatives for those property owners connected to the LCCs who would no longer be served by the C. Brewer system after LCC closure. As reported in the Draft EA Section 2.1.4, 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handout indicated that Mayor Kim's office advised the property owners the County would move forward with new systems for Nā'ālehu and Pāhala on November 5, 2004. Additionally, the handout stated public meetings were held in both Nā'ālehu and Pāhala in November 2006, to discuss the wastewater system alternatives. The handout included that adequate land for the treatment and disposal system had not been identified in Pāhala. The

handout also stated that all properties accessible to the new sewer system would be required to connect in accordance with Hawaii County Code Chapter 21.

2. b. As shown in Figure 2.3 the 14.9-acre treatment and disposal facility project site does not extend into Maile Street. Similarly, Figure 2.3 shows the 14.9-acre treatment and disposal facility does not extend into Māmalahoa Highway. The site fencing will not extend into the Maile Street or Māmalahoa Highway rights-of-way. The Draft EA Figure 2.3 shows the intersection of Maile Street and Māmalahoa Highway lies at about 580 feet above mean sea level (MSL). Figure 2.3 will be repeated in Final EA.

The Draft EA Figure 2.3 shows the intersection of Maile Street and Māmalahoa Highway lies at about 580 feet above mean sea level (MSL). The Draft EA Figure 2.2 shows the Pā'au'au Gulch crosses under Māmalahoa Highway near the hospital about 0.88 miles north of that intersection and lies at approximately 780 feet MSL or about 200 feet higher in elevation than the culvert at the Maile Street and Māmalahoa Highway intersection. Due to this distance and the elevation difference, surface flows at Site 7 would not affect the gulch. Similarly, the Kaimani Street and Māmalahoa Highway intersection lies about 0.84 miles north of the proposed facility site and at about 780 feet MSL. Surface flows at the facility would also not affect that intersection. Figures 2.2 and 2.3 will be repeated in the Final EA.

3. The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of

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the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

3. a. Mr. Andrade has provided comments to the Draft EA.

The County is aware of two existing culverts that allow stormwater to flow across the Māmalahoa Highway in the vicinity of the project. The first is a box culvert located at the intersection with Maile Street that conveys stormwater across the highway. The second culvert is located approximately 600 feet east of the Maile Street intersection and was used to convey sugar mill flume water across the highway for disposal.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

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The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.23.2 (a) states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pahala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facility will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 Floodplain Management, Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to “comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water

disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event as shown in the department of public works "Storm Drainage Standards".

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1, states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

3 b. Without specific citations it is not possible to confirm the issue related to negative impacts to residents near wastewater treatment plants.

3 c. The proposed site plan is included in the Draft EA as Figure 2.3. As noted in Section 2.3.1, "disposal of the treated and disinfected effluent would be accomplished through land treatment in four groves of native, water-tolerant trees occupying a total area of approximately 8.0 acres." This 8.0 acre planted area, combined with the sloping site topography and existing Cook pine trees (*Araucaria columnaris*) on Maile Street, will provide a visual buffer from both the Māmalahoa Highway and Maile Street. As outlined in Section 3.19.2 of the Draft EA, the Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. The wastewater collection system would be installed below the streets and therefore would not impact views. Above-ground structures may include the operations building, headworks and UV cover structures, and berms around the basins. The existing pine trees along Maile Street, most of which would remain with no changes, would continue to obstruct the viewplanes from Maile Street. The facility site would be adjacent (mauka) to, and

visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane would be mitigated by the planted trees in the basins and by the rise in elevation between the highway and the facility.

3. d. The Draft EA Section 2.3.1 states Site 7 is owned by Kamehameha Schools and Section 2.5 states Site 9 is owned by Kamehameha Schools. The Final EA will clarify that the current landowner is BP Bishop Estate Trustees (Kamehameha Schools).

4. a. As outlined above and in the Draft EA Section 2.1.3, the County has been discussing the need for a new collection system, treatment and disposal facility to replace the existing collection system and LCCs, which have been prohibited by the U.S. Environmental Protection Agency, with the community since 2004. The County has not fast-tracked this project. Although not a comment specific to the content of the Draft EA, for clarification, fees currently paid by Pāhala residents serviced by the existing County-owned collection and LCC disposal system are collected for operation and maintenance of that system. All properties connected to County of Hawai'i wastewater collection systems pay fees as outlined in County of Hawaii Code (HCC) Chapter 21 Section 21-36.1. Currently, users connected to gang cesspools (LCCs) pay a reduced charge per unit as compared to rates charged to other user categories.

4. b. and c. The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the Pāhala large capacity cesspools (LCC). The Draft EA Section 2.3.2 discusses the construction of a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current collection system includes facilities located in the backyards of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from individual landowners to enter them, through private property, to inspect, maintain, repair or replace existing sewer facilities: all activities essential to an efficient, functioning system.

As a result, the proposed new collection system would consist of a total of approximately 12,150 linear feet (LF) (2.3 miles) of corrosion-resistant polyvinyl chloride (PVC) piping located almost entirely within the right of way (ROW) of eight public streets.

Also as outlined in the Draft EA, Section 2.3.2, the new collection system would be subject to the Hawai'i County Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*"(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice."*

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Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened two additional public meetings on October 9, 2018 and March 26, 2019 to gain further input from newly accessible property owners and present funding options for them to pursue. This information will be added to the final EA.

The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent is to provide an industry standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community to eliminate underground injection from LCCs it operates to help protect underground drinking water sources. Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently using cesspools for sewage disposal.

4. d. The Draft EA Section 2.9 provides information regarding the 2007 Final EA for the Nā'ālehu- Pāhala Large Capacity Cesspool Conversion project. There is no statement in the 2007 Final EA that the project was a joint venture.

4. e. The Pāhala wastewater treatment plant (WWTP) 14.9-acre project site has been developed to provide the necessary land area for the facilities needed to treat the incoming flows and to dispose the treated effluent from the treatment processes. The project site minimizes the use of

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the adjacent lands which contain a commercial macadamia orchard. A larger project site is not required. The special permit requirement applies to the proposed WWTP parcel only, not to the proposed utility easement. The County will apply for the required special permit through the Planning Commission. This information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

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10/25/18  
cc: BC CDH  
EPA ERG

**Earl Matsukawa**

**From:** Jade Moses <mamajpapab71@gmail.com>  
**Sent:** Wednesday, October 24, 2018 1:39 AM  
**To:** Public Comment  
**Subject:** Comment on the Pahala Sewer Waste Water treatment Plant

I received a piece of mail letting me know that there was a meeting to be taking place sometime in October 9 and 10 regarding the sewer system that was to be put into the Pahala area. The meeting was to take place at the new gym in a smaller room. So I went, but was soooo disappointed and upset. I listened, but what I heard was meetings had started since 2004, the County had taken over the connections of the sewer line that C. Brewer had connected to the homes in the Pahala area and had the pipings for those that was hooked up to the lines were the only ones that the pipes were being prepared for hooks up with the new sewer line that being put into the Pahala area and the Private people that had their own cesspools were not included in that because the agreement was only those that was hooked up the pahala lines would be taken cared of by the County of Hawaii.

As for those that had their own private cesspools would have to find their own contractors to help them with their own hooks ups between the hook up from the house to the lines, then from there to the line to the new sewer lines, and also we would be responsible also to close and cover our cesspools, and if you are lucky, would be one of the homeowners that might also need a pump. I asked about prices and how much this cost, but no one knew nothing about it. I on the other had found that it would run the homeowner between 20,000.00 to 50,000.00 and maybe more for them to get completely hooked up to the sewer lines, then on top of that we would have to pay the county for that honor, and all of that would have to be done before the year 2021. We were also told, if you are a private owner, you are responsible for getting our home hooked up to their system, which we would also pay for.

I was told that the agreement with County and C. Brewer was only for the line that were hooked up to C. Brewer only. I was really upset

First of all, We were NEVER EVER told about any meetings that were held here in Pahala regarding the system. I found out that there was one in 2004, and again later on during the years. There was also a Study done for the location in 2008 and was found not too be suitable because of the history, so since then nothing happened. Then I heard there was a meeting in December of 2017 and then again a meeting in October with some of the C. Brewer people, then a meeting with the owners that owned their Own Cesspools, then a general meeting with everyone. Somehow, not everyone got notifications regarding these meetings, I by chance received a notice in my mail box, not everyone did. Communication with the people that live in the area was not being done properly, so not everyone, not everyone knew.

Well, a lot of the people that own their own private cesspools, are low income and elderly people that are being asked to pay, I want to share how upset and down graded I felt. My father Died working for C. Brewer, my brother died when the cane truck fell on him, and many of the families worked there till they closed and also a lot of them retired from there, but did not live long enough to enjoy their retirement, they died of Emphysema, or heart attacks or some other type of illness. Then going to one of these meetings to find out that we were short changed, and now we would have to pay for all the hook ups that need to be done to be able to have the sewer system work properly, but yet some of the people do need to pay for hook ups, County of Hawaii is taking care of their portion because they were already hooked up to the line with C Brewer and we were not, and also we were not notified since all of this started since 2004.

Then there is a question as to the home that were owned by C. Brewer workers then sold, and you have people from away that has purchase the home and is living in there now, and their home is being hooked up as well for free, but yet a lot of these homeowners that have private Cesspools need to front their own money for their own hooks up. Then there is another question. We are a very small and close nit community and I feel that by County paying for some and not others brings up the point about separation issues. It is like separating the town, which is not true. If you worked for C. Brewer, owned your home through C. Brewer, if County works with some, they should be helping all.

There is a lot of us that are over 60 and above that still live in our homes, We have a lot of people on fixed incomes and cannot afford to do this on their own, and then there is a lot of the older people that do not understand what is going on, and I feel that they should not be taken advantage of because of their age, and they truly do not understand, but do what they are told to do because they are scared.

The people in this community comes from households that only knew C. Brewer and that it went on generations by generations, and when they closed these people had to find other means, and that would also include, commuting to work, which would be from pahala to hilo, pahala to kona or anywhere they could find a job, even driving to hilo then catching the buses to work at Waikoloa. And now choices to make regarding the sewer system.

The respect for the community was NOT taken under consideration properly, Talking and speaking with the people that live in the area is another issue that was not done. If you will be putting the system in the Pahala area, you need to speak with the people from Pahala, not from Honokaa, not from Hilo, not from Kohala etc. Every area is different and not the same. There is history, bones, caves and other history buried in this town. Also, research should have been done before each meeting so that people would have a better understanding as to what kind of help they might be able to get as far as working with County of Hawaii, or for anything that needed to be done so that they would be able to see the bigger picture more thoroughly as to the aspects of the situation. Research should have done and anything that would help the people with options, and finding out what they could do to help the WHOLE community, not just a few. EVERYONE that grew up here, worked for C. Brewer one time or another. We are all important to each other here in Pahala, we do not single anyone out, we all live together so, everything should have been thought through about EVERYONE in Pahala not just the ones that was hooked up to the system prior to County taking over. Also meetings should have been told ahead of time, and the time for the meetings should have been done when everyone was in town, and not on a week night, everyone works and they also commute to work. All that should have been considered for the people in order to have gotten all or much of the in put from the Pahala People for the Pahala Waste Treatment plant. Also no discussion was even given to future development which we were aware that they has been talk.

Really upset, no disclosure to people and with that comes no time from the community for their input, and County denied reports of cultural sites, historical sites. I feel the hook up funding should have been made available at time of meeting, and also, previous agreement with C. Brewer and County was not known until was told. That is where the division of community comes into play I think the LUC should have been given a chance to review it even if the property was not within their range.

I thank you all for the opportunity to give you my complaint and my input. It is very disturbing and I feel we were not given the chance to defend ourselves,

Just a little note, my family was living up next to the shopping center. Before the shopping center was built, our home was where the road is right now. My home was moved by C Brewer down to where we live now, on the corner of Huapala and Hinano. When we were living up by the shopping center, we were hooked up to their line, but when they moved us to make room for the road to make a shopping center, they helped us make a cess pool until further notice, and we have been like that to present. I just wanted to share that.

Mahalo  
Jadelyn Kaapana-Moses  
Residence since 1959

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10349-01  
March 6, 2020

ref (42)

Jadelyn Kaapana Moses  
[mamajapab71@gmail.com](mailto:mamajapab71@gmail.com)

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Kaʻū, Hawaiʻi  
Response to Comment October 24, 2018 1:39 a.m.

Dear Ms. Moses:

Thank you for your October 24, 2018 1:39 a.m. comment message regarding the Draft Environmental Assessment (EA) for the County of Hawaiʻi Department of Environmental Management Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

We appreciate you taking the time to attend meetings and encourage you to continue your engagement. The purpose of this letter is to address your emailed comments as they relate to the content requirements of the Draft EA.

Section 2.1.4 of the Draft EA provides a history of wastewater management for Pāhala. As stated, in 2003 C. Brewer requested assistance from the County to close their large capacity cesspools as required by the Environmental Protection Agency. Section 2.14 discussed that, around 2006, C. Brewer requested that the County construct and maintain a new and improved sewer system for the Pāhala community. A County Council Resolution approved the C. Brewer request. In anticipation of C. Brewer's dissolution, the company proposed, and the County agreed in April 2007, to enter into a formal agreement to construct and maintain a new and improved community sewer system or assume maintenance and required service of the existing systems by April 30, 2010. The Final EA will clarify that C. Brewer committed to complete the line (called a lateral) between the residences and the property line at the edge of the public right-of-way adjacent to the new collection system for specific private properties in Pāhala and Nāʻālehu. It was agreed, if the County did not complete its' portion of the work by April 30, 2010, it would assume pending and unfinished obligations to connect the new laterals installed by C. Brewer to the residences and new collection system when complete. Thus, the project includes connecting these C. Brewer laterals, which may now need to be replaced.

As outlined in the Draft EA Section 2.1.3, the County has been discussing the need for a new collection system, treatment and disposal facility to replace the existing collection system and LCCs, with the community since 2004.

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On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā'ālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meeting, an informational handout prepared by the County Wastewater Division, provided a history of the project documenting that, in 2004, Mayor Kim's office used a ballot system to get input from property owners regarding different wastewater treatment/disposal alternatives for those property owners connected to the LCCs who would no longer be served by the C. Brewer system after LCC closure. As reported in the Draft EA Section 2.1.4, 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handout indicated that Mayor Kim's office advised the property owners the County would move forward with a new system for Nā'ālehu and Pāhala on November 5, 2004. Additionally, the handout stated that public meetings were held in both Nā'ālehu and Pāhala in November 2006 to discuss the wastewater system alternatives.

This historical information related to public outreach regarding closure of the LCCs will be included in the Final EA.

The Draft EA Section 7 documents the five public meetings held in Pāhala December 12, 13 and 14, 2017 to discuss the Pāhala Large Capacity Cesspool Replacement project. As documented in the Draft EA, the community outreach program for the current project was designed as "talk story" sessions to optimize community conversations in informal sessions. Further, as documented in the Draft EA, invitations and announcements for the talk story sessions were intended to reach all audiences, as follows:

- Property owners with C. Brewer lines on their property were mailed letters from DEM inviting them to these sessions. The letters included stamped, mail-in postcards to facilitate the RSVP process.
- Fliers were hand-delivered to "newly-accessible" properties.
- Organizational leaders were provided copies of fliers announcing meetings and asked to circulate among their members.
- Fliers were posted in public venues, such as the post office, the Pāhala Community Center and the Ka'ū Hospital.
- Several online announcements were included in Ka'ū News Briefs available at <http://kaunewsbriefs.blogspot.com>.

This information will be repeated in the Final EA.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 meeting were mailed to all property owners on record adjacent to the proposed collection system. This direct mailout included an invitation from DEM to workshops conducted prior to the October 10 public meeting. The workshop for owners served by C. Brewer lines was held on October 8, and the mailout for this meeting also included

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anyone with a current sewer account. The workshop for owners of newly accessible properties was convened on October 9. In addition to the direct mailout, online announcements for the October 8 and 9 workshops were available on the Ka'ū News Briefs website.

On September 26, 2018, a public notice was published in both the *Hawaii Tribune Herald* and *West Hawaii Today* which stated a public meeting was to be held on October 10, 2018 for the Pāhala Large Capacity Cesspool Replacement Project Draft EA. A public notice was also published in the October 1, 2018 print and online editions of the *Ka'ū Calendar* and made available on the Ka'ū News Briefs web site <http://kaunewsbriefs.blogspot.com>. Fliers were also posted in public venues such as the community shopping center, realtor office, grocery store, library, and the Pāhala Community Center.

This information will be included in the Final EA.

All accessible properties will be required to connect to the new wastewater collection system in accordance with Hawai'i County Code, Chapter 21, Article 2, Section 21-5. However, as you have noted, the County entered into an agreement with C. Brewer (in April 2007) to eliminate LCCs from the existing community sewer system and connect properties discharging to them to new County collection, treatment and disposal systems. Once the actual costs are determined, County Council action is still required to approve the expenditures.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA and again during the October 2018 meetings. Although not required by Hawai'i Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened an additional public meeting on March 21, 2019 to gain further input from newly accessible property owners and fulfill a County commitment made in October 2018 to research and provide financing options available for the newly accessible residents of the Pāhala Community to pursue.

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program-Community Block Grant Program, and
- US Department of Agriculture – Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years and additional options may be added to this preliminary list. Hawai'i Legislature, Senate Bill 221 SD1, which could amend Hawai'i Revised Statutes (HRS) Chapter §342D to establish a low interest loan program offering financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

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This information will be included in the Final EA.

The County has investigated reports of cultural and historical sites in the context of this project in consultation with the State Historic Preservation Division (SHPD), as follows:

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents, that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3, which provides the Preliminary Site Plan for the New Treatment and Disposal Facility shows the 14.9-acre project site has been developed to exclude the area identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawai'i Department of Land and Natural Resources SHPD requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The archaeological inventory survey submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with the SHPD.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/webink/1/edoc/100962/Draft%20Archaeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

A geophysical survey and geotechnical investigation of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site, conduct infiltrometer testing, and determine subsurface soil characteristics that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the Final EA.

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The project will be designed to accommodate the future needs of the Pāhala community in accordance with the Ka'ū Community Development Plan Policy 120 as discussed in the Draft EA Sections 2.9, 6.2.2, 7 and Appendix B. Additional information will be included in the appendices of the Final EA to clarify how accommodations will be made not to preclude future expansion of the new collection system. Future development will be accommodated as capacity allows on a first-come, first-served basis.

As stated in the Draft EA Section 2.10, the County of Hawai'i Department of Environmental Management will submit a Special Use Permit application, Subdivision Application, and obtain plan approval as required by applicable Hawai'i County Code and Hawai'i Revised Statutes. This information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



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10/25/18 CC'BC COH  
EPA ERG

**COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT**

**SUBMITTED TO:**

Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826  
Fax: 808/946-2253



**SUBMITTED BY:**

Lila Lopes  
Naalehu HI 96772

**Comment:**

In 2010, when the County acquired the illegal Ka'u LCCs from the C. Brewer Company, the COHDEM was simply tasked with closing the LCCs – beyond that is wastewater dreamland. And which bureaucrat in came in one day and said: "I have a great idea – let's put a sewage plant next to a school – yeah, that will work! Which school? Naalehu Elementary School!"

There has been no public participation in the decision to place a secondary sewage plants beside my grandson's classroom at Naalehu School and I want my voice to be heard. Do the right thing and provide a single EIS for the Ka'u LCC Closure Project – and take the school-site off the table immediately!

Signed in Naalehu, Hawaii on October 22, 2018

*Lila Lopes*  
Lila Lopes



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March 6, 2020

ref (38)

Ms. Lila Lopes  
Naalehu, 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – October 22, 2018

Dear Ms. Lopes:

Thank you for your October 22, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Nā'ālehu LCC project is not the subject of the Draft EA for the Pāhala Large Capacity Cesspool (LCC) Replacement project.

Hawaii Administrative Rules (HAR) 11-200-7 **Multiple or phased applicant or agency actions** states that "A group of actions proposed by an agency or an applicant shall be treated as a single action when (1) The component actions are phases or increments of a larger total undertaking, (2) An individual project is a necessary precedent for a larger project; (3) An individual project represents a commitment to a larger project; or (4) The actions in question are essentially identical and a single statement will adequately address the impacts of each individual action and those of the group of actions as a whole." The wastewater projects at Pāhala and Nā'ālehu are not phases or increments of a larger total undertaking, are not precedents or commitments for a larger project, nor are they identical. Hence, there is no requirement to consider them in a single environmental review document.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

10349-01

Letter to Ms. Lila Lopes

Page 2

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

10349-01  
10/25/18 EC BC COH  
EPA ERG

**COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT**

**SUBMITTED TO:**

Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826  
Fax: 808/946-2253

**SUBMITTED BY:**

Charles Tuttle + Tina Tuttle  
94-1513 Kaalualu Road  
Naalehu HI 96772

**Comment:**

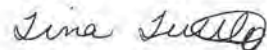
It seems extremely wrong - in fact "green collar crime," that the EPA grant was moved to Pahala on May 30, 2018 and now you all are refusing to do any NEPA or crosscutters, importantly NHPA and ESA, environmental review on the Naalehu LCC Project.

*I am very upset with this whole idea of where you are intending to put the new plant.*  
Signed in Naalehu, Hawaii on October 22, 2018

Charles Tuttle



Tina Tuttle



10349-01  
March 6, 2020

ref (34)

Mr. Charles Tuttle  
Ms. Tina Tuttle  
95-1513 Kaalualu Road  
Naalehu 96772

Subject: Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – October 22, 2018

Dear Mr. and Ms. Tuttle:

Thank you for your October 22, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool (LCC) Replacement project. Our responses follow:

The Nā'ālehu LCC project is not the subject of the Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

The Draft EA Section 5 discusses the federal cross cutter requirements for the Pāhala Large Capacity Cesspool Replacement project.

The Draft EA Sections 2.3 through 2.8 discuss project siting issues.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

10349-01  
10/25/18 CC PLCO11  
EPA ERG

**COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT**

**SUBMITTED TO:**

Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826  
Fax: 808/946-2253

**SUBMITTED BY:**

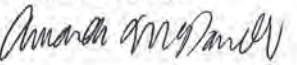
Amanda and Anthony McDowell  
95-5587A Mamalahoa Hwy.  
Naalehu HI 96772

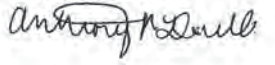
**Comment:**

The County and EPA have avoided any consideration of the impacts of the Naalehu LCC Closure Project on this Pahala WWTP and it is only sited 11 miles away.

It is not right that our sons should have to go to school next to a new-build wastewater plant just because the County and EPA conspired to move the EPA grant to Pahala on May 30, 2018, and so the Naalehu School site has not had any EA or NHPA or ESA environmental review.

Signed in Naalehu, Hawaii on October 22, 2018

Amanda McDowell  


Anthony McDowell  




10349-01  
March 6, 2020

ref (43)

Ms. Amanda McDowell  
Mr. Anthony McDowell  
95-5587A Māmalahoa Highway  
Naalehu, Hawaii 96772

Subject: Draft Environmental Assessment for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of, Ka'ū, Hawai'i  
Response to Comment – October 22, 2018

Dear Ms. and Mr. McDowell:

Thank you for your October 22, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool (LCC) Replacement project. Our responses follow:

The Draft EA Section 4.1.2 states: "The community of Na'ālehu, approximately 11 miles southwest of Pāhala, is also considering options for closure of LCCs and development of a new wastewater treatment system. The Na'ālehu project was excluded from this analysis of cumulative improvements and impacts because, due to its distance from Pāhala, the effects of that project are not expected to have a significant cause-and-effect relationship with the direct and indirect effects of the Proposed Action. The Na'ālehu project is undergoing separate community outreach and environmental review processes that will identify potential impacts for that project separately from the Pāhala wastewater system improvements."

This information will be included in the Final EA.

The Nā'ālehu LCC project is not the subject of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

10349-01

Letter to Ms. Amanda McDowell/Mr. Anthony McDowell

Page 2

March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

10349-01  
10/25/18  
Received  
OCT 23 2018  
4:10 pm  
mf

October 23, 2018  
CC: BCC COH  
EPA ERG

October 22, 2018

To: The County of Hawai'i, U.S. Environmental Protection Agency,

Brown & Caldwell, Wilson Okamoto Corporation

Re: Move this proposed site! Pāhala Large Capacity Cesspool (LCC) Replacement Project  
EPA Grant XP-96942401

We the undersigned, are in opposition of the proposed site for the sewage and wastewater treatment plant located on the corner of Maile St. and Mamalahoa Highway. We feel that this proposed site will have a negative effect on the entire Pahala Community. The residents were not informed or consulted in the selection of this site by the County of Hawai'i, EPA, and their contractors. Concerns relating to this project are, health & safety, environmentally, financially, visually and historically. We propose that the site be relocated below the Mamalahoa Highway, further away from the community. We sign this petition because we care about the quality of life here, which we feel will be permanently and negatively impacted by the proposed site.

County of Hawaii  
Department of Environmental  
Waste Water Management  
345 Kekua'anaoa St. #41  
Hilo, Hawaii 96720

Dear Mr. William Kucharski, DEM

We the residents of Pahala request an extension to the proposed Large Capacity Cesspool (LCC) Replacement Project for the following reasons/concerns:

1. There was no disclosure of the proposed project to the residents of Pahala.
2. There is insufficient time for residents to address their concerns on the EA.
3. The Federal Section 106 is inadequate.
4. The Cultural Assessment of the DEA is inadequate.
5. There has been historical flooding that is a major concern to the community, to the proposed area.
6. The project action is claiming that proposed site is only 14.9 acres, but the residents know that it is more than 14.9 acres and feel that County of Hawaii is intentionally evading the need to be in compliance with the Land Use Commission.
7. Being that Pahala is declared a poor and poverty district due to the fact that 85% are either retired or on fixed incomes and are also experiencing the lack of employment opportunities. We are strongly demanding that funding be available for the entire project.
8. Negative psychological impacts have been imposed on the residents since 2005.

For all of the above reasons we are strongly requesting an extension be granted so the above can be further investigated and resolved.

Mahalo,

The residents of Pahala, Hawaii

\*Please see the attached items:

1. Resident petition. 2. Hawaii Notary Acknowledgement

Name	Signature	Address	Email
ALFRED JAGGERS	[Signature]	Pahala, HI: 96777	
Mary Ibarra	[Signature]	Pahala HI 96777	
Wendy Gaston	[Signature]	Pahala HI 96777	black42e5@aol.com
Sandra Demorulli	[Signature]	Naalahu HI 96772	
Jerry Warren	[Signature]	P.O. Box 951 96772	
TONY DONOFR	[Signature]	" " 119 96777	
Grady Keopaa Moses	[Signature]	P.O. Box 422	manaj papab@gmail.com
Grady Moses	[Signature]	" "	
Chyler Silva	[Signature]	Pahala HI 96777 P.O. Box 128	
Rodney Freritas	[Signature]	P.O. Box 580 96777	
Cheri Freritas	[Signature]	P.O. Box 580 96777	
Martina Freritas	[Signature]	P.O. Box 580 96777	
John Sauer	[Signature]	P.O. Box 580 96777	
Dolly Kailiawa	[Signature]	P.O. Box 762 "	
Kimo Kailiawa	[Signature]	P.O. Box 762 96777	
Zyrae Kailiawa	[Signature]	P.O. Box 762 96777	
Kulipo Iakalo	[Signature]	Pahala	
KEONA PAHALUHI	[Signature]	P.O. Box 946 Pahala, HI 96777	paahonikeona@gmail.com
Jessie Ke	[Signature]	Box 562 Pahala HI 96777	
Kenneth Gaston	[Signature]	P.O. Box 1115 Pahala, HI 96777	

**P.B.L.F.**  
DEFENSE FUND

Our Mission Statement  
Pala Defenso Fund is dedicated to the Preservation and Perpetuation of Native Hawaiian Traditional Rights, Customs, and Practices, and to the Protection of our Unique Island Environment for all of Hawai'i to enjoy Now and in the Future.

P.O. Box 4969  
Hilo, Hawai'i  
96720

808.315.9996

e-mail:  
pala.defensofund@gmail.com

October 22, 2018

To: The County of Hawai'i, U.S. Environmental Protection Agency,

Brown & Caldwell, Wilson Okamoto Corporation

Re: Move this proposed site! Pāhala Large Capacity Cesspool (LCC) Replacement Project  
EPA Grant XP-96942401

We the undersigned, are in opposition of the proposed site for the sewage and wastewater treatment plant located on the corner of Maile St. and Mamalahoa Highway. We feel that this proposed site will have a negative effect on the entire Pahala Community. The residents were not informed or consulted in the selection of this site by the County of Hawai'i, EPA, and their contractors. Concerns relating to this project are, health & safety, environmentally, financially, visually and historically. We propose that the site be relocated below the Mamalahoa Highway, further away from the community. We sign this petition because we care about the quality of life here, which we feel will be permanently and negatively impacted by the proposed site.

Name	Signature	Address	Email
Pamell Hana		P.O. Box 488 Pahala	Poela8@aol.com
Sepha Hana		P.O. Box 488 Pahala	Erna@pacbell.net
WAWK LANAHA		P.O. Box 488 Pahala	
EDWARD ANDREWS		P.O. Box 514 Pahala	96717

### HAWAII NOTARY ACKNOWLEDGMENT

THE STATE OF HAWAII

COUNTY OF Hawaii

I, Jadelyn Kaapana-Moses have physically observed or heard of a burial cave with human skeletal remains and or shelving. It is located in Pahala, Hawaii, above Mamalahoa Highway. It is in the area where the County of Hawaii wants to put a Sewage wastewater treatment plant. I am against the use of that proposed site.

On Oct 22, 2018 before me, Jonette O Gaston, Notary Public in and for said county, personally appeared Jadelyn Kaapana-Moses (signer/witness) who has/have satisfactorily identified him/her/themselves as the signer(s) or witness(es) to the above-referenced document.

Notary Public Signature

Jadelyn Kaapana-Moses

Print Jonette O Gaston

My commission expires: 07/13/2019



(Seal)

State of Hawaii )  
 ) SS  
County of Hawaii )

On this 22<sup>nd</sup> day of October, 2018, before me personally appeared, Jadeyn Kaapana-Moses, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same as his free act and deed.



Jonette O. Gaston  
Signature of Notary Public  
Print Name: Jonette O Gaston  
My Commission Expires: 07/13/2019

Doc. Date: _____	#Pages: _____
Notary Nam: Jonette O Gaston	Third Circuit
Doc Description: <u>Hawaii Notary Acknowledgment</u>	
<u>Physically observed/heard of burial cave</u>	
<u>Pahala Sewage Wastewater</u>	
Notary Signature: <u>[Signature]</u>	Date: <u>10/22/2018</u>



## HAWAII NOTARY ACKNOWLEDGMENT

THE STATE OF HAWAII

COUNTY OF Hawaii

I Jessie Ke have physically observed or heard of a burial cave with human skeletal remains and or shelving. It is located in Pahala, Hawaii, above Mamalahoa Highway. It is in the area where the County of Hawaii wants to put a Sewage wastewater treatment plant. I am against the use of that proposed site.

On Oct 22, 2018 before me, Jonette O Gaston, Notary Public in and for said county, personally appeared Jessie Ke, (signer/witness) who has/have satisfactorily identified him/her/themselves as the signer(s) or witness(es) to the above-referenced document.

[Signature]  
Notary Public Signature

Print Jonette O Gaston

My commission expires: 07/13/2019

Jessie Ke  
✓Jessie Ke



(Seal)



State of Hawaii )  
 ) SS  
County of Hawaii )

On this 22<sup>nd</sup> day of October, 2018, before me personally appeared, Jesse Ke, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same as his free act and deed.



Jonette O. Gaston  
Signature of Notary Public  
Print Name: Jonette O Gaston  
My Commission Expires: 07/13/2019

Doc. Date: _____	#Pages: _____
Notary Nam: Jonette O Gaston	Third Circuit
Doc Description: <u>Hawaii Notary Acknowledgment</u>	
<u>Physically observed/heard of a burial cave</u>	
<u>Pahala Sewage Wastewater</u>	
Notary Signature: <u>[Signature]</u>	Date: <u>10/22/18</u>



### HAWAII NOTARY ACKNOWLEDGMENT

THE STATE OF HAWAII

COUNTY OF Hawaii

I EDWARD ANDRADE JR have physically observed or heard of a burial cave with human skeletal remains and or shelving. It is located in Pahala, Hawaii, above Mamalahoa Highway. It is in the area where the County of Hawaii wants to put a Sewage wastewater treatment plant. I am against the use of that proposed site.

On Oct 22, 2018 before me, Jonette O Gaston, Notary Public in and for said county, personally appeared Edward Andrade Jr, (signer/witness) who has/have satisfactorily identified him/her/themselves as the signer(s) or witness(es) to the above-referenced document.

[Signature]  
Notary Public Signature

Print Jonette O Gaston

My commission expires: 07/13/2019

Edward Andrade Jr  
Edward Andrade Jr.



(Seal)

State of Hawaii )  
 ) SS  
County of Hawaii )

On this 22nd day of October, 2018, before me personally appeared, Edward Anarado Jr., to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same as his free act and deed.



Jonette O. Gaston  
Signature of Notary Public  
Print Name: Jonette O Gaston  
My Commission Expires: 07/13/2019

Doc. Date: _____	#Pages: _____
Notary Nam: Jonette O Gaston	Third Circuit
Doc Description: <u>Hawaii Notary Acknowledgment</u> <u>Physically observed / heard of burial cave</u> <u>Pahala Sewage Wastewater</u>	
Notary Signature: <u>[Signature]</u>	Date: <u>10/22/18</u>



## HAWAII NOTARY ACKNOWLEDGMENT

THE STATE OF HAWAII

COUNTY OF Hawaii

I Alfred Ibarra Jr. have physically observed or heard of a burial cave with human skeletal remains and or shelving. It is located in Pahala, Hawaii, above Mamalahoa Highway. It is in the area where the County of Hawaii wants to put a Sewage wastewater treatment plant. I am against the use of that proposed site.

On Oct 22, 20 18 before me, Jonette O Gaston Notary Public in and for said county, personally appeared Alfred Ibarra Jr. (signer/witness) who has/have satisfactorily identified him/her/themselves as the signer(s) or witness(es) to the above-referenced document.

[Signature]  
Notary Public Signature

Alfred Ibarra Jr.  
Alfred Ibarra Jr.

Print Jonette O Gaston

My commission expires: 07/13/2019



(Seal)

State of Hawaii )  
 ) SS  
County of Hawaii )

On this 22<sup>nd</sup> day of October, 2018, before me personally appeared, Alfred Ibarra Sr., to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same as his free act and deed.



[Signature]  
Signature of Notary Public  
Print Name: Jonette O Gaston  
My Commission Expires: 07/13/2019

Doc. Date: _____	#Pages: _____
Notary Nam: Jonette O Gaston	Third Circuit
Doc Description: <u>Hawaii Notary Acknowledgment</u>	
<u>Physically observed/heard of burial cave</u>	
<u>Pahala Sewage Wastewater</u>	
Notary Signature: <u>[Signature]</u>	Date: <u>10/22/18</u>



### HAWAII NOTARY ACKNOWLEDGMENT

THE STATE OF HAWAII

COUNTY OF Hawaii

I Mary Ibarra have physically observed or heard of a burial cave with human skeletal remains and or shelving. It is located in Pahala, Hawaii, above Mamalahoa Highway. It is in the area where the County of Hawaii wants to put a Sewage wastewater treatment plant. I am against the use of that proposed site.

On Oct 22, 2018 before me, Jonette O Gaston, Notary Public in and for said county, personally appeared Mary Ibarra, (signer/witness) who has/have satisfactorily identified him/her/themselves as the signer(s) or witness(es) to the above-referenced document.

[Signature]  
Notary Public Signature

Print Jonette O Gaston

My commission expires: 07/13/2019

[Signature]  
Mary Ibarra



(Seal)

State of Hawaii )  
 ) SS  
County of Hawaii )

On this 22<sup>nd</sup> day of October, 2018, before me personally appeared, Mary Ibarra, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same as his free act and deed.



Mary Ibarra  
Signature of Notary Public  
Print Name: Jonette O Gaston  
My Commission Expires: 07/13/2019

Doc. Date:	#Pages:
Notary Nam: Jonette O Gaston	Third Circuit
Doc Description: <u>Hawaii Notary Acknowledgment</u>	
<u>Physically observed / heard of burial cave</u>	
<u>Pahala Sewage Wastewater</u>	
Notary Signature:	Date: <u>10/22/18</u>



## HAWAII NOTARY ACKNOWLEDGMENT

THE STATE OF HAWAII

COUNTY OF Hawaii

I Eleanora Louis have physically observed or heard of a burial cave with human skeletal remains and or shelving. It is located in Pahala, Hawaii, above Mamalahoa Highway. It is in the area where the County of Hawaii wants to put a Sewage wastewater treatment plant. I am against the use of that proposed site.

On October 22, 2018 before me, Jonette O Gaston, Notary Public in and for said county, personally appeared Eleanora Louis, (signer/witness) who has/have satisfactorily identified him/her/themselves as the signer(s) or witness(es) to the above-referenced document.

Notary Public Signature

Eleanora Louis  
Eleanora Louis

Print Jonette O Gaston

My commission expires: 07/13/2019



(Seal)


State of Hawaii )  
 ) SS  
County of Hawaii )

On this 02nd day of October, 2018, before me personally appeared, Eleanora Louis to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same as his free act and deed.



Eleanora Louis  
Signature of Notary Public  
Print Name: Jonette O Gaston  
My Commission Expires: 07/13/2019

Doc. Date:	#Pages:
Notary Nam: Jonette O Gaston	Third Circuit
Doc Description: <u>Hawaii Notary Acknowledgment for Physically Observed / Method of Sewer</u>	
Notary Signature: <u>[Signature]</u>	Date: <u>10/02/18</u>



10349-01  
March 6, 2020

ref (40)

Pele Defense Fund  
Residents of Pāhala  
P.O. Box 4969  
Hilo, Hawaii 96720

Subject: Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – October 23, 2018

Dear Sir/Madam:

Thank you for your October 23, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

Please note that in response to requests from your organization and others in the community, the public comment period was extended through December 10, 2018. See #2 below for additional detail.

Our responses follow:

1. As outlined in the Draft EA Section 2.1.3, the County has been discussing the need for a new collection system, treatment and disposal facility to replace the existing collection system and LCCs, which have been prohibited by the U.S. Environmental Protection Agency, with the community since 2004. The Draft EA Section 7 documents the 5 public meetings held in Pāhala December 12, 13 and 14, 2017 to discuss the Pāhala Large Capacity Cesspool Replacement project. As documented in the Draft EA, the community outreach program for the current project was designed as “talk story” sessions to optimize community conversations in informal sessions. Further, as documented in the Draft EA, invitations and announcements for the talk story sessions were intended to reach all audiences, as follows:
  - Property owners with C. Brewer lines on their property were mailed letters from DEM inviting them to these sessions. The letters included stamped, mail-in postcards to facilitate the RSVP process.
  - Fliers were hand-delivered to “newly-accessible” properties.
  - Organizational leaders were provided copies of fliers announcing meetings and asked to circulate among their members.

- Fliers were posted in public venues, such as the post office, the Pāhala Community Center and the Ka'ū Hospital.
- Several online announcements were included in Ka'ū News Briefs available at <http://kaunewsbriefs.blogspot.com>.

This information will be repeated in the Final EA.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 meeting were mailed to all property owners on record adjacent to the proposed collection system. This direct mailout included an invitation from DEM to workshops conducted prior to the October 10 public meeting. The workshop for owners served by C. Brewer lines was held on October 8, and the mailout for this meeting also included anyone with a current sewer account. The workshop for owners of newly accessible properties was convened on October 9. In addition to the direct mailout, online announcements for the October 8 and 9 workshops were available on the Ka'ū News Briefs website.

On September 26, 2018, a public notice was published in both the *Hawaii Tribune Herald* and *West Hawaii Today* which stated a public meeting was to be held on October 10, 2018 for the Pāhala Large Capacity Cesspool Replacement Project Draft EA. A public notice was also published in the October 1, 2018 print and online editions of the *Ka'ū Calendar* and made available on the Ka'ū News Briefs web site <http://kaunewsbriefs.blogspot.com>. Fliers were also posted in public venues such as the community shopping center, realtor office, grocery store, library, and the Pāhala Community Center.

This information will be included in the Final EA.

The Draft EA Section 7 will be revised to add that, on March 21, 2019, the County held another meeting in Pāhala which included a presentation to provide information on financing sources available to owners whose property would become accessible to the County collection system. The purpose of the meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pāhala Community by March, 2019.

2. On October 26, 2018, the County requested the Office of Environmental Quality Control issued a Re-Publication notice of the Draft EA in the November 8, 2018 issue of The Environmental Notice. This was to allow additional time for public comments. Public comments were accepted from September 23, 2018 to December 10, 2018.
3. and 4. The Draft EA Section 3.15 provides information on the archaeological and cultural resources related to the Pāhala Community Large Capacity Cesspool Replacement project. The Draft EA Section 3.15 states, on March 29, 2018, consultation was initiated for the

project under the National Historic Preservation Act. The Draft EA Section 10 provides a list of the consulted parties. The Final EA Section 3.15 will include that the list of Native Hawaiian Organizations (NHO) was generated by the EPA for NHPA Section 106 and HRS Chapter 6E compliance from the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization (NHO) Notification List. Letters were sent to 14 NHOS during the pre-assessment consultation. No responses were received from these organizations.

The HRS Chapter 6E determination and Section 106 review packet were submitted to SHPD with a draft archaeological inventory survey (AIS) on March 13, 2019. SHPD response is pending. The Draft EA Section 3.15.2 states that prior to finalization of this EA and initiation of the Proposed Action, the Environmental Protection Agency (EPA) and the County of Hawai'i will conclude consultation with SHPD in accordance with Section 106 of the NHPA and will incorporate additional impact avoidance and minimization measures as necessary to result in a finding of no adverse effects to historic properties.

The Draft EA Section 7 will be revised to include that on September 26, 2018, a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers to advertise the October 10, 2018, public information meeting conducted by the County in Pāhala at the Ka'ū Gym Multi-Purpose Conference Room to discuss the availability of Draft EA and the process for submitting comments. The notice stated that the second part of the meeting would address Section 106 of the National Historic Preservation Act of 1966, as amended (2006) involving consultation with Native Hawaiian Organizations and the Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, and cultural religious attachment to the proposed project area. Eight persons placed their names on a sign in sheet at the beginning of the October 10, 2018 meeting to contribute during the second part of the meeting dedicated to the Section 106 consultation. There were no comments or information forthcoming during the Section 106 portion of the meeting.

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which included Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3, which provides the Preliminary Site

Plan for the new treatment and disposal facility, shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources [State Historic Preservation Division \(SHPD\)](#) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on-site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with the SHPD.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/webink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

The Final EA will include the pedestrian survey included residential streets within the project area, including Pikake Street, Kamani Street, Puahala Street, Huapala Street, Hala Street, Hinano Street, Ilima Street and Maile Street. The survey found these typically streets consist of one-to-two-lane asphalt travel ways with no curbing or sidewalks, except for a short segment portion of Maile Street which has a sidewalk.

Two historic properties were newly documented within the project area based on a review of historic maps. These include Pikake Street which is a portion of a historic road alignment (SIHP # -31088, Wood Valley Road/Coastal Road) and Maile Street which is a portion of a historic road alignment (SIHP # -31089, Volcano Road). These two streets overlap historic-era road corridors which functioned as primary transportation routes throughout the greater Pāhala/eastern Kaʻū area. None of the constructed elements of the subject portions of the original SIHP #s -31088 or -31089 roadways are evident today, and these portions of the historic properties lack integrity apart from their location.

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the final EA.

5. The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai‘i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai‘i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM Panel is reproduced in Appendix B as Figure 4-13. This information will be repeated in the Final EA.

The Draft EA Section 3.23.2 (a) states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

The preceding information does not support significant historic flooding to the proposed project area.

This information will be included in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land

surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pahala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at this location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facilities will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system will meet the requirements of Hawai'i County Code (HCC), Chapter 27 **Floodplain Management**, Section 20, **Standards for subdivisions and other developments** (e) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event as shown in the department of public works "Storm Drainage Standards"."

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the detailed design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1 states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard

that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

6. The Pāhala wastewater treatment plant (WWTP) 14.9-acre project site has been developed to provide the necessary land area for the facilities needed to treat the incoming flows and to dispose the treated effluent from the treatment processes. The project site minimizes the use of the adjacent lands which contain a commercial macadamia orchard. A larger project site is not required. The special permit requirement applies to the proposed WWTP parcel only, not to the proposed utility easement. The County will apply for the required special permit through the Planning Commission.

7. The following is a summary of information from Final EA. The U.S. Census Bureau provides the American Community Survey (ACS), which updates selected demographic, social, and economic information for various years. This includes age, racial composition, and economic information, including employment and household income by Census Designated Place for several locations in Hawai'i County. The most recent version of the ACS is the 2012-2016 5-Year Estimates, released in 2017.

The ACS shows the Pāhala population has a similar age distribution to Hawai'i County, although Pāhala has a higher proportion of individuals in the "Under 5 to 19" age category, 28.5 percent compared to 24.4 percent for the County. The median age for Pāhala is 42.4 years compared to 41.8 years for the County.

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities than the County. The racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.

Pāhala has a higher proportion of residents that have completed high school and some college than the County overall, but a lower proportion with college degrees (bachelor's and graduate or professional degrees). From an economic perspective, Pāhala generally has more households in lower income brackets than the County, and a lower median household income. For analysis



purposes and to correspond with the available ACS demographic characteristic data, “low income” is defined as having a household income of less than \$24,999; “minority” is defined as any race population other than White; and “children” is defined as the “Under 5 to 19” age category

Despite the relatively high proportions of low-income, minority, and children residents in Pāhala compared to the County, the project would not result in disproportionately high and adverse human health or environmental effects on these sensitive populations. The design shows the proposed wastewater treatment and disposal facility would include odor controls to minimize odor and air quality impacts to nearby areas. Construction of the wastewater collection system would result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However, construction activities within the community would need to comply with provisions of HAR 11-46 (Community Noise Control). This includes the contractor obtaining a noise permit for any activities that would generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit would limit excessive noise sources to daytime hours; would require the use of best available control technology to control noise levels from excessive noise sources; and would require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, with replacement of the substandard collection system and closure of the LCCs, the project is expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater collection and treatment and disposal system.

The Final EA Section 3.16 will include further detail information.

The Draft EA Section 2.1.4 provides a history of wastewater management for Pāhala. In 2003, C. Brewer requested assistance from the County to close their large capacity cesspools as required by the Environmental Protection Agency. The County entered into an agreement with C. Brewer (in April 2007) and is moving forward with the Pāhala Large Capacity Cesspool Replacement project. The Draft EA Section 2.1.2 states the project may also be funded by the State of Hawai‘i DOH Clean Water State Revolving Fund (CWSRF) Program. The CWSRF Program was created by the federal Water Quality Act of 1987 and authorizes low interest loans for the construction of publicly owned wastewater treatment works.

The Draft EA Section 2.3.2 states the new collection system would be subject to the County of Hawai‘i Code (HCC) Chapter 21, Sewers. Specifically, HCC Chapter 21, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a)Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at*

*their expense to connect directly with the public sewer within 180 days after date of official notice.”*

All accessible properties will be required to connect to the new wastewater collection system in accordance with Hawaii County Code, Chapter 21, Article 2, Section 21-5. However, the County entered into an agreement with C. Brewer (in April 2007) to eliminate LCCs from the existing community sewer systems and connect properties discharging to them to new County collection, treatment and disposal systems. Once the actual costs are determined, County Council action is still required to approve the expenditures. The agreement with C. Brewer did not address newly accessible properties.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened two additional public meetings on October 9, 2018 and March 21, 2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

The Draft EA Section 7 will be revised to add that the County held additional meetings in Pāhala including one to provide information on financing sources available to owners of parcels which would become accessible to the County collection system. The purpose of the March 21, 2019 meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pāhala Community. At the meeting, DEM provided the preliminary results of the County investigation into funding sources and options available for newly accessible property owners once the new treatment and disposal facility and wastewater collection system have been designed, permitted and constructed.

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawaii Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, the programs may change in the coming years and additional options may be added to this preliminary list. Hawaii Legislature, Senate Bill 221 SD1, which could amend Hawaii Revised Statutes (HRS) Chapter §342D to establish a low interest loan program to offer financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

8. This is not a comment pertinent to the content requirements of the Draft EA for the Pahala Large Capacity Cesspool Replacement project.

Regarding the attached resident petition, the Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. The section further describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

The proposed site plan is included in the Draft EA as Figure 2.3. As noted in Section 2.3.1, "disposal of the treated and disinfected effluent would be accomplished through land treatment in four groves of native, water-tolerant trees occupying a total area of approximately 8.0 acres." This 8.0 acre planted area, combined with the sloping site topography and existing Cook pine

trees (*Araucaria columnaris*) on Maile Street, will provide a visual buffer from both the Māmalahoa Highway and Maile Street. As outlined in Section 3.19.2 of the Draft EA, the Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. The wastewater collection system would be installed below the streets and therefore would not impact views. Above-grade structures may include the operations building, headworks and UV cover structures, fuel storage tank, and low berms around the basins. The existing pine trees along Maile Street, most of which would remain with no changes, would continue to obstruct the viewplanes from Maile Street. The facility site would be adjacent (mauka) to, and visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane would be mitigated by the planted trees in the basins and by the rise in elevation between the highway and the facility.

Please note, the attached documentation shows the County's attempt to gather information related to the 6 notarized attachments to your October 23, 2108 letter. Refer to response 4 above for additional information regarding additional archaeological and geophysical investigations undertaken since the publication of the Draft EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Attention: Mr. Earl Matsukawa, Mayor Kim, Malie David  
Subject: Draft EA: Pahala Community LCC  
Replacement Project

Alfred/Mary Ibarra

Comments and Concerns:

We were notified in December 2017, by the County, that LCC's was having a meeting. We were so surprised to hear of it because we are not LCC's - for we have our own sewer system not affiliated with any LCC. We were never notified that we would be on this system. County has failed to thoroughly inform residence in Pahala who would be affected by this system, nor the options to consider for this project. Meetings were held in 2003 and we were never included in this great enormous decision making. It took the County about 14 years to reach us, and County already had us in the plans for the system. And even the voting for choosing the preferred sewer alternative was not offered to us. I would like to know who participated in this vote of 87% returned ballots via mail-was it only LCC people? And why wasn't non-LCC able to address their concerns or thoughts on this matter and be able to vote on this costly project. I can't believe how some of the formal meetings, when we went in 2017 with the County/Brown Caldwell presentation, how most of the questions we asked were answered vaguely or with no empathy. I think they forgot that we the people of Pahala are human beings too, and should have the opportunities to voice opinions, and have questions when it concerns us.

I cannot comprehend that we are facing this problem at this age. Retired, living in this community all our life, and with a set income to be encumbered with such a burden. I cannot see that my neighbor across the street from me is not on the LCC, and I am not on the LCC too, and yet we are required to hook up to the County line. WHY DOES THE LINE CONTINUE TO MOVE PASS OUR HOME WHEN THE PEOPLE BELOW US IS THE LAST LCC HOME? AND HOW DID YOU COME TO THE CONCLUSION OF STOPPING AT THE INTERSECTION OF PIKAKE ST./PAKALANA ST., WHEN PIKAKE ST. CONTINUES UP ANOTHER 7 MORE HOMES? I am confused on how this decision came about, and there is no transparency.

Cost- Another concern is what is the cost to be on this County Sewer? It seems that we who are not LCC are penalized with this enormous fees and others are exempt. The Federal Regulation was for the LCC, it didn't say individual

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11/16/18

CC: BC COLL  
EPA EEB

sewers. It is the County who created Chapter 21 and other laws to satisfy their own agenda. Why don't the County consider for filling their obligation to the mandated Federal Regulations toward the LCC's instead of jumping into something bigger. There are other communities on the island like Puako, Hilo, Keaau, who are in dire need of assistance with their sewage. They should be priority.

**Reconsidering Type/Location of Sewage Plant-** The location now,(Site 7), has a long history of flooding from rain and storms...water collections in open sewer reservoir would flood and over flow it bringing toxic air, water, bacteria, and chemicals overground, over highway 11 and to all the lower lying areas-ocean, conservations, preservations areas of Ka'u. Therefor polluting our land and ocean. I am very dishearten by this situation. Please reconsider site location to be across highway 11.

**Closing-** I really feel that the County of Hawaii should concentrate on only people involved with LCC's first and foremost because of the Federal mandated regulations set before them. We non-LCC are not in violation of any standards of the Federal Regulation's requestings. Thank you for hearing my voice in this situation.

RECORDED  
11/15/18

Alfred/Mary Ibarra  
P.O. Box 396  
Pāhala, HI 96777

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County of Hawaii  
Department of Environmental  
Waste Water Management  
345 Kekuaanāoa St. #41  
Hilo, Hawaii 96720

96720-438841

Attention: William KUCH



10349-01  
March 6, 2020

ref (55)

Mr. Alfred Ibarra  
Mrs. Mary Ibarra  
P.O. Box 396  
Pāhala, Hawaii 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – post marked November 13, 2018

Dear Mr. and Ms. Ibarra

Thank you for your comment letter post marked November 13, 2018 regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent (AOC), is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources. The AOC, which was issued on June 22, 2017 states: "The Pāhala Wastewater Treatment Facility shall be designed in accordance with good engineering practices and capable of servicing all residential properties currently connected to the Pāhala Community Cesspools, plus a minimum of sixty-five (65) additional properties...". An electronic version of the AOC can be found on the USEPA website at: <https://www.epa.gov/sites/production/files/2017-06/documents/sdwa-uic-aoc-09-2017-0002-aoc-2017-04-26.pdf>.

Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted by the Hawai'i State legislature requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently utilizing cesspools for sewage disposal.

The Draft EA Figure 2.2 shows the collection system on the various streets within the community. The extent of the collection system is to ensure the parcels connected to the former C. Brewer system will have access to the treatment and disposal facility so the large capacity cesspools can be closed. It is conventional to extend the utility to the nearest intersection to minimize the number of manholes. Similar to Huapala and Puahala Streets, the collection

system in Pitake Street extends to Pakalana Street to meet the objectives of the Ka'ū Community Development Plan and not preclude a future line in Pakalana Street. As stated in the Draft EA, the proposed collection system is routed primarily within the County right-of-way, for ease of access for both construction and maintenance.

As outlined in the Draft EA, Section 2.3.2, the new collection system would be subject to the Hawai'i County Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.”*

Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

All accessible properties will be required to connect to the new wastewater collection system in accordance with Hawaii County Code, Chapter 21, Article 2, Section 21-5. However, the County entered into an agreement with C. Brewer (in April 2007) to eliminate LCCs from the existing community sewer systems and connect properties discharging to them to new County collection, treatment and disposal systems. Once the actual costs are determined, County Council action is still required to approve the expenditures.

Although not a comment related to the content requirements of the Draft EA, County of Hawaii sewer rates are outlined in HCC Chapter 21, Article 4 (Sewer Service Charges):

*“Sewer user charges for residential customers shall be assessed to all lots accessible to a public sewer or public gang cesspools whether connected or not. User charges for sewer service... shall be according to the schedule shown under section 21-36.1”*

The Hawaii County Code Chapter 21 was adopted in 1983.

On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā'ālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meeting, an informational handout prepared by the County's Wastewater Division provided a brief history of the project documenting that, in 2004, Mayor Kim's office used a ballot system to get input from property owners regarding different wastewater treatment/ disposal alternatives for those property owners connected to the LCCs who would no longer be served by the C. Brewer system after LCC closure. As reported in the Draft EA Section 2.1.4, 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handout indicated that Mayor Kim's office advised the property owners the County would move forward with a new system for Nā'ālehu and Pāhala on November 5, 2004. Additionally, the handout stated public meetings were held in both Nā'ālehu and Pāhala in November 2006 to discuss the wastewater system alternatives. The handout included that adequate land for the treatment and disposal system had not been identified in Pāhala. The handout also stated that all properties accessible to the new system would be required to connect in accordance with Hawaii County Code Chapter 21.

The Draft EA Section 7 documents the 5 public meetings held in Pāhala December 12, 13 and 14, 2017 to discuss the Pāhala Large Capacity Cesspool Replacement project. As documented in the Draft EA, the community outreach program for the current project was designed as “talk story” sessions to optimize community conversations in informal sessions. Further, as documented in the Draft EA, invitations and announcements for the talk story sessions were intended to reach all audiences, as follows:

- Property owners with C. Brewer lines on their property were mailed letters from DEM inviting them to these sessions. The letters included stamped, mail-in postcards to facilitate the RSVP process.
- Fliers were hand-delivered to “newly-accessible” properties.
- Organizational leaders were provided copies of fliers announcing meetings and asked to circulate among their members.
- Fliers were posted in public venues, such as the post office, the Pāhala Community Center and the Ka'ū Hospital.
- Several online announcements were included in Ka'ū News Briefs available at <http://kaunewsbriefs.blogspot.com>.

This information will be repeated in the Final EA.

On September 26, 2018, a public notice was published in both the *Hawaii Tribune Herald* and *West Hawaii Today* which stated a public meeting was to be held on October 10, 2018 for the Pāhala Large Capacity Cesspool Replacement Project Draft EA. A public notice was also published in the October 1, 2018 print and online editions of the *Ka'ū Calendar* and made available on the Ka'ū News Briefs web site <http://kaunewsbriefs.blogspot.com>. Fliers were also

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Letter to Mr. Alfred Ibarra/Mrs. Mary Ibarra

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posted in public venues such as the community shopping center, realtor office, grocery store, library, and the Pāhala Community Center. This information will be included in the Final EA.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 meeting were mailed to all property owners on record adjacent to the proposed collection system. On October 26, 2018 letters were mailed to all property owners on record adjacent to the proposed collection system informing them of the extension of the public comment period to December 10, 2018.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA and again during the October 2018 meetings. Although not required by Hawai'i Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened an additional public meeting on March 21, 2019 to gain further input from newly accessible property owners and fulfill a County commitment made in October 2018 to research and provide financing options available for the newly accessible residents of the Pāhala Community to pursue.

Programs discussed and included:

- US Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawaii Legislature, Senate Bill 221 SD1, which could amend Hawaii Revised Statutes (HRS) Chapter §342D to establish a low interest loan program offering financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2- percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent

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annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.23.2(a) states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows drain through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pāhala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT

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owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flows back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facilities will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 **Floodplain Management**, Section 20, **Standards for subdivisions and other developments** (c) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event as shown in the department of public works "Storm Drainage Standards".

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project site "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements that are necessary to comply with Chapter 27 HCC requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1, states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA, Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process for berms intended to act as secondary containment. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

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The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

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cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



10349-01 EM  
11/16/13  
cc: BCOAH  
EPA ERG

Nov. 14, 2018



TO: Earl Matusukawa

SUBJECT: DRAFT EA: PAHALA COMMUNITY LARGE CAPACITY CESSPOOL  
REPLACEMENT PROJECT

My questions/concerns are:

Why is Pahala community a priority to have this wastewater treatment plant? What qualifies our small population community to be a priority over other areas in East Hawaii or even Kona, with much larger populations, more homes and businesses that continue to grow?

Pahala is an economically depressed community with a high percentage of people on welfare, social security, pension, or other fixed income. How are they going to afford any hook-up fees, maintenance fees, or any other fees that will likely come with this wastewater treatment plant; additional expenses that don't fit into their current family living expenses? On top of that, the make-up of Pahala is majority immigrants, where English is a second language. Do you think they fully understand all these detail and legal jargon? All this is beyond them, they don't know how to express themselves and their concerns. That's why there's poor attendance at community meetings, not because they do not care, or approve of all this...they do not understand all what's going on and how it's going to affect them.

The people I have talked to are not in favor of the wastewater treatment plant in Pahala. If it HAS TO BE BUILT, we are not in favor of the location at the corner of Maile Street and Hwy 11, and if we have NO SAY in the building of the treatment plant, we would rather it be BELOW Hwy 11 (site 9), for the following reasons:

-reading through the draft EA, there has been no complete EIS done in the area. There are many caves and unrecorded burial sites all over Pahala. There needs to be a thorough EIS, and in-depth testing, not just surface testing that was done, to document any archeological findings.

-flooding is always a big concern in Pahala. Roads/highways that never flooded in the past, are now flooding during heavy rains. What safe guard will there be that in the event of days of rain/heavy rains and flooding, there will be no sewage spillage on Hwy.11, closing down the highway or Maile Street until the spillage is cleared/cleaned.

For this reason, it makes more sense to have the treatment plant BELOW Hwy 11! Pahala is 3+ miles away from the shoreline. There will be no concern of waste leaching into the coastline if there was a problem from natural flooding (heavy rains), or other overflows from the treatment plant, like down in Keaukaha in Hilo.

-do you really think tall trees and other foliage will cover up the site of the treatment plant! With the strong winds we have, the foliage will bend and sway...exposing the area. We don't want the entrance to Maile Street into Pahala town to become a "marker" to turn from Hwy 11 "by the treatment plant". We deserve a cleaner looking community...not one marked by a sewage treatment plant! I lived with that in my growing years in Hilo and going to the beach to swim, passing the sewage treatment plant in Keaukaha...not a nice site to see.

-which leads me to the smell. Is there a 100% guarantee there will be NO smell. I know the problems and smelt the problems the Keaukaha community suffers with for umpteen years. My home is the nearest subdivision to this proposed treatment plant. We lived through the years the plantation mill was in operation with noise, and smell!!

We DON'T want to go through something that is even worst...MOVE it...or better yet... we DON'T want this at all for all the above reasons!!!

Walter TL & Debra A Wong Yuen

PO Box 29, Pahala, HI 96777

PH. 808-928-8039



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March 6, 2020

ref (56)

Mr. Walter T.L. and Ms. Debra A. Wong Yuen  
P.O.Box 29  
Pāhala, Hawai'i 96777

Subject: Draft Environmental Assessment for the,  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - November 14, 2018

Dear Mr. and Ms. Wong Yuen:

Thank you for your November 14, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Draft EA Section 2.1.3 states: "In 1999, EPA promulgated regulations under the Safe Drinking Water Act's Underground Injection Control (UIC) Program which prohibited the construction of new large capacity cesspools (LCCs) as of April 2000 and required the closure of all existing LCCs by April 5, 2005 (see 40 C.F.R. § 144.88). Under federal regulations, an LCC is a cesspool which serves multiple dwellings, or for non-residential facilities has the capacity to serve 20 or more persons per day. Cesspools can release disease-causing pathogens and other pollutants (e.g., nitrates) into ground water aquifers, streams, and eventually the ocean, thus leading to public health and environmental concerns. In June 2017, EPA and the County entered into an Administrative Order on Consent (AOC) to close the County-operated LCCs serving the Pāhala Community by June 2021."

The Final EA Section 2.1.3 will include the County has previously abandoned or assisted with closure of other LCCs in locations including Hilo, Kona, Honokaa and Pāhala.

The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources. Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted by the Hawai'i State legislature requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently using cesspools for sewage disposal.

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The Final EA Section 3.16 will include further detail information.

The Draft EA Section 5.7 will be revised as follows

Executive Order 12898, Environmental Justice (full title Federal Actions to Address Environmental Justice to Minority and Low Income Populations), was signed on February 11, 1994. The intent of Executive Order 12898 is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low income populations. Executive Order 12898 also requires federal agencies ensure that minority and low-income communities have adequate access to public information related to health and the environment.

The 2017 American Community Survey (ACS) (5-Year Estimates) is the most recent information related to socioeconomic conditions in the state and County. The 2017 ACS includes Hawai'i Geographic Area Profiles – Census Designated Places: Neighbor Islands. The ACS noted it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

For purposes of this assessment, and to correspond with the available ACS demographic characteristic data, "low income" is defined as having a household income of less than \$24,999; "minority" is defined as any race population other than White; and "children" is defined as the "Under 5 to 19" age category. Pāhala has more households in the "less than \$24,999" income bracket (33.7 percent) than the County as a whole (26.3 percent).

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities (92.1 percent non-White) than the County at large (66.8 percent non-White). The racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.

Pāhala has a similar age distribution to Hawai'i County, although Pāhala has a higher proportion of individuals in the "Under 5 to 19" age category (28.5 percent) compared to the County as a whole (24.4 percent).

Based on the above, Pāhala has a higher proportion of low-income, minority, and children residents as compared to the County as a whole. However, the Proposed Action will not result in disproportionately high and adverse human health or environmental effects on these sensitive populations. The design and location of the proposed wastewater treatment and disposal facility will minimize odor and air quality impacts. Construction of the wastewater collection system will result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However,

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construction activities within the community will comply with provisions of HAR 11-46 (Community Noise Control). This includes obtaining a noise permit for any activities that will generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit will limit excessive noise sources to daytime hours; will require the use of best available control technology to control noise levels from excessive noise sources; and will require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, the Proposed Action is expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater treatment system.

Based on the above, construction and operation of the collection system and the treatment and disposal facility would have a disproportionately high adverse impact on the minority and low income population in the Pāhala community.”

This information will be included in the Final EA.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM convened two additional public meetings one on October 9, 2018 and another on March 21, 2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

The Draft EA Section 7 will be revised to add that the County held additional meetings in Pāhala including one to provide information on financing sources available to owners of parcels which would become accessible to the County collection system. The purpose of the March 21, 2019 meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pāhala Community. At the meeting, DEM provided the preliminary results of the County investigation into funding sources and options available for newly accessible property owners once the new treatment and disposal facility and wastewater collection system have been designed, permitted and constructed.

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawaii Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawaii Legislature, Senate Bill 221 SD1, which could amend Hawaii Revised Statutes (HRS) Chapter §342D to establish a low interest loan

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program to offer financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

The Final EA Section 7 will include that on September 26, 2018 a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers. The public notice was to advertise the October 10, 2018, public information meeting conducted by the County in the Pāhala at the Ka’ū Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA and process for submitting comments. The notice stated that the second part of the meeting would address Section 106 of the National Historic Preservation Act of 1966, as amended (2006) involving consultation with Native Hawaiian Organizations and the Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, and cultural religious attachment to the proposed project area. The Office of Environmental Quality Control rules have no provision for receiving oral comments. However, the facilitator at that meeting offered assistance by persons available at the meeting in putting any oral comments attendees may wish to offer into writing.

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

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maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai‘i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

HRS 343 Section 5 (a)(9)(A), states as follows: “(a) Except as otherwise provided, an **environmental assessment** (emphasis added) shall be required for actions that: ... (9) Propose any: (A) Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent...”.

HRS 343-5 **Applicability and requirements** states under item (c) (4) “A(n environmental impact) statement shall be required if the agency finds that the proposed action may have a significant effect on the environment...” The criteria by which the proposing agency makes the significance determination is provided in HAR 11- 200-12 (a) and (b) which states: “(a) In considering the significance of potential environmental effects, agencies shall consider the sum of the effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action. (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences,... and the...effects of the action.”

HAR 11-200-10 **Contents of an environmental assessment** includes “(9) Findings and reasons supporting the agency determination or anticipated determination...” The Draft EA provides this information in Chapter 8 Findings and Determination. Neither HRS Chapter 343 nor HAR Title 11, Chapter 200 contain any requirement that all proposed wastewater systems require an EIS.

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report undertaken as part of the initial planning for the LCC closure. The report states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will include that the November 2016 archaeological field inspection report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut plant, is the location of a known (but sealed) lava tube opening that local informants have

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indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3, which provides the Preliminary Site Plan for the new treatment and disposal facility, shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on-site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with the SHPD.

The complete document is available for download from the County’s website at: <http://records.co.hawaii.hi.us/weblink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection system.

This information will be included in the Final EA.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

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On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain."

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.23.2 (a) states:

"The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins."

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pāhala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated from mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain

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events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facilities will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 **Floodplain Management**, Section 20, **Standards for subdivisions and other developments** (e) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event as shown in the department of public works "Storm Drainage Standards"."

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project site "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1, states the aerated lagoons will be lined with high density polyethylene liners to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

Final EA Section 2.3.1 will state the entire wastewater treatment and disposal facility would be enclosed with a six-foot-high chain-link fence to prevent public access at the gated access driveway entrance.

The proposed site plan is included in the Draft EA as Figure 2.3. As noted in Section 2.3.1, "disposal of the treated and disinfected effluent would be accomplished through land treatment in four groves of native, water-tolerant trees occupying a total area of approximately 8.0 acres." This 8.0 acre planted area, combined with the sloping site topography, berms, and existing Cook pine trees (*Araucaria columnaris*) on Maile Street, will provide a visual buffer from both the

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Māmalahoa Highway and Maile Street. As outlined in Section 3.19.2 of the Draft EA, the Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. The wastewater collection system would be installed below the streets and therefore would not impact views. Above-grade structures may include the operations building, headworks and UV cover structures, fuel storage tank and berms around the basins. The existing pine trees along Maile Street, most of which would remain with no changes, would continue to obstruct the viewplanes from Maile Street. The facility site would be adjacent (mauka) to, and visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane would be mitigated by the planted trees in the basins and by the rise in elevation between the highway and the facility.

The Draft EA Section 2.3.1 states the driveway access to the wastewater treatment and disposal facility will be located west (mauka) of the Maile Street and Māmalahoa Highway intersection. Appropriate signs identifying the plant will be posted at the driveway access.

This information will be included in the Final EA.

The Draft EA Section 3.14.2 states:

“Wastewater treatment plants can be a source of nuisance odors to the surrounding community if not properly designed or operated. Typically, nuisance odors are most commonly associated with anaerobic (without oxygen) conditions and with processing of residual solids. Incoming raw sewage flows to the proposed wastewater treatment and disposal facility would first be routed to the headworks, which is the facility where the solids are removed from the flows.

To mitigate potential nuisance odors, the headworks would be equipped with an odor control system with a granulated activated carbon (GAC) scrubber to remove odors. A package GAC scrubber passes the odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon. The County currently operates GAC scrubbers at other facilities, and it has been proven to be an effective means of odor control both locally and nationwide. The treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring. The disposal groves would be irrigated with fully-treated and aerobic secondary effluent from the treatment process; irrigation with secondary effluent is not associated with development of nuisance odor conditions.”

This information will be repeated in the Final EA Section 3.14.2.

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Letter to Mr. Walter T.L. and Ms. Debra A. Wong Yuen

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We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

**From:** Gwen Sorensen <gwendolyn\_sorensen@hotmail.com>  
**Sent:** Friday, November 2, 2018 2:43 PM  
**To:** Public Comment  
**Subject:** DRAFT EA: PAHALA COMMUNITY (LLC) REPLACEMENT PROJECT  
**Attachments:** 2018 GS Pahala LCC Replacement Project Response.pdf; 2018 PF Pahala LCC Replacement Project Response.pdf

10399-01  
 11/16/18  
 cc: BE CIVIL  
 EPA EIA



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 Attention: Mr. Earl Matsukawa

**SUBJECT: DRAFT EA: PAHALA COMMUNITY  
 LARGE CAPACITY CESSPOOL (LCC)  
 REPLACEMENT PROJECT  
 INFORMATION MEETING, OCTOBER 10, 2018**

This message has been scanned for viruses and dangerous content using **Worry-Free Mail Security**, and is believed to be clean. [Click here to report this message as spam.](#)

- Objective is the "relocation" of the sewage plant that has been proposed.
1. Locate below the highway of the community.
    - a. It would be an eye sore to the entrance of our community.
    - b. It would be a safety and health issue in the event of floods or any other overflows. Historical flooding have proved this concern.
  2. Community need more information about the project. It was poorly presented in the mutiple meetings. Not enough data on the proposal.
  3. More input by the County on how this project is going to be handled fairly to benefit the community.

(include additional sheets as necessary)

PLEASE PRINT: Name: GWENDOLYN SORENSEN Phone: 808-928-8382  
 Organization: RESIDENT  
 Address: BOX 27 PAHALA, HI 96777  
 Email: gwendolyn\_sorensen@hotmail.com

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).



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Ms. Gwendolyn Sorensen  
P.O. Box 27  
Pāhala, Hawai'i 96777

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment- November 2, 2018; 2:37 p.m.

Dear Ms. Sorensen:

Thank you for your November 2, 2018 2:37 p.m. comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

1. a.

The proposed site plan is included in the Draft EA as Figure 2.3. As noted in Section 2.3.1, "disposal of the treated and disinfected effluent would be accomplished through land treatment in four groves of native, water-tolerant trees occupying a total area of approximately 8.0 acres." This 8.0 acre planted area, combined with the sloping site topography and existing Cook pine trees (*Araucaria columnaris*) on Maile Street, will provide a visual buffer from both the Māmalahoa Highway and Maile Street. As outlined in Section 3.19.2 of the Draft EA the Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. The wastewater collection system would be installed below the streets and therefore would not impact views. Above-grade structures may include the operations building, headworks and UV cover structures, fuel storage tank, and low berms around the basins. The existing pine trees along Maile Street, most of which would remain with no changes, would continue to obstruct the viewplanes from Maile Street. The facility site would be adjacent (mauka) to, and visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane would be mitigated by the planted trees in the basins and by the rise in elevation between the highway and the facility. The property will be fenced and driveway access will be gated to prevent public access along with appropriate signage.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9 including its visibility from the highway. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway, without the benefit of viewplane mitigation by the planted trees in the basins and by the rise in elevation between the highway and the facility."

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1. b.

The Draft EA Section 3.9.1 (a) states:

"The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in Zone X, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain."

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.23.2 (a) states:

"The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins."

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb



or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pahala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On a telephone call on February 20, 2019, the District office indicated the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facility will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 Floodplain Management, Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event, as shown in the department of public works "Storm Drainage Standards"."

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project "shall not alter the general drainage pattern above or below the development". Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1, states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be

conducted during the design process for any berms intended to act as secondary containment. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

## 2.

The Draft EA Section 2.3.1 provides a detailed description of the proposed treatment and disposal system, descriptions of the various facilities and their functions, a schematic drawing of the various processes, the proposed site plan, and a description of the various areas which have the potential to be disturbed during construction. Further, Section 2.3.2 describes the wastewater collection system, including the streets where the system would be routed and the two phases for construction. Lastly, Section 2.3.3 describes closure of the two large capacity cesspools, as required by the US Environmental Protection Agency, and abandonment of the existing collection system.

The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources. Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted by the Hawai'i State legislature requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently utilizing cesspools for sewage disposal.

## 3.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA and again during the October 2018 meetings. Although not required by Hawai'i Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened an additional public meeting on March 21, 2019 to gain further input from newly accessible property owners and fulfill a County commitment made in October 2018 to research and provide financing options available for the newly accessible residents of the Pāhala Community to pursue.

Programs discussed and included:

- US Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

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As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawai'i Legislature, Senate Bill 221 SD1, which could amend Hawai'i Revised Statutes (HRS) Chapter §342D to establish a low interest loan program to offer financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



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March 6, 2020

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**SUBJECT: DRAFT EA: PĀHALA COMMUNITY  
LARGE CAPACITY CESSPOOL (LCC)  
REPLACEMENT PROJECT  
INFORMATION MEETING, OCTOBER 10, 2018**

Concerns: Relocation of Sewage Plant to below the highway of Pahala Community.  
Is this project going to effect the whole community?  
Increments of Project if any should be presented. What is presented is not complete.  
Future subdivisions should be included in presentation.

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(include additional sheets as necessary)

PLEASE PRINT: Name: PRODINCIO FUERTE Phone: 808-987-4361  
Organization: RESIDENT  
Address: BOX 725 PAHALA, HI 96777  
Email: gwendolyn\_sorensen@hotmail.com

Please submit comments by October 23, 2018 or email [PahalaEA@wilsonokamoto.com](mailto:PahalaEA@wilsonokamoto.com)

\*Receipt of e-mailed comments will be confirmed via e-mail. If you do not receive a confirmation message, please contact our office (see contact information, above).

Mr. Prodcincio Fuerte  
P.O. Box 725  
Pāhala, Hawai'i 96777  
Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - November 18, 2018

Dear Mr. Fuerte:  
Thank you for your comment letter received on November 18, 2018 regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9 which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the

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Letter to Mr. Prodinco  
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subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW, and approval by the State of Hawai‘i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA

The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the Pāhala LCCs. The Draft EA Section 2.3.2 discusses the construction of a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current collection system includes facilities located in the backyards of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from individual landowners to enter them, through private property, to inspect, maintain, repair or replace existing sewer facilities: all activities essential to an efficient, functioning system. The Draft EA Section 2.3.2 states the new collection system would be subject to the County of Hawai‘i Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following

*“(a)Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.*

Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

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Letter to Mr. Prodinco Fuerte  
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All accessible properties will be required to connect to the new wastewater collection system in accordance with Hawaii County Code, Chapter 21, Article 2, Section 21-5. However, the County entered into an agreement with C. Brewer (in April 2007) to eliminate LCCs from the existing community sewer systems and connect properties discharging to them to new County collection, treatment and disposal systems. Once the actual costs are determined, County Council action is still required to approve the expenditures.

This information will be included in the Final EA.

The County’s intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent, is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources.

The Draft EA Section 2 provides the scope of the Proposed Action. The Draft EA Section 2.3.1 provides a detailed description of the proposed treatment and disposal system, descriptions of the various facilities and their functions, a schematic drawing of the various processes, the proposed site plan, and a description of the various areas which have the potential to be disturbed during construction. Further, Section 2.3.2 describes the wastewater collection system, including the streets where the system would be routed and the two phases for construction. Lastly, Section 2.3.3 describes closure of the two large capacity cesspools, as required by the US Environmental Protection Agency, and abandonment of the existing collection system. Figure 2.6 shows the extent of the proposed collection system and preferred wastewater treatment and disposal facility location within the community.

Although not a comment specific to the content of the Draft EA, information regarding project schedules, including US Environmental Protection Agency (USEPA) compliance dates, project updates and milestones can be found on the USEPA website: <https://www.epa.gov/uic/county-hawaii-administrative-order-consent-closure-cesspools-pahala-and-naalehu>

Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted by the Hawai‘i State legislature requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently utilizing cesspools for sewage disposal.

The Draft EA Section 6.2.2 discusses the Ka‘ū Community Development Plan (CDP): “Section 5 of the CDP prioritizes improvements in infrastructure, facilities, and services, including Section 5.8 applicable to ... Environmental management facilities, including expanded sewer lines, ...”. Policy 120 is to “Extend the primary wastewater collection lines in Pāhala and

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Nā`ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems.”

The collection system will be consistent with Policy 120 as the improvements for the Pāhala (LCC) Replacement project have been designed not to preclude accommodating the Pāhala community. Similarly, the treatment and disposal facility has been designed not to preclude accommodating wastewater flows from the collection system from the Pāhala community.

Further, the Draft EA, Appendix B, Section 5.6 provides information related improvements needed to wastewater services to the Pāhala community as envisioned in the CDP. Appendix B, Section 5.6.2 states:

“To accommodate the flow increase anticipated from the full buildout of the Pāhala wastewater collection system, the WWTP will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the 14.9-acre site. Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solid recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater opportunity for contact between the naturally-occurring micro-organisms in the lagoon and dissolved organic matter. As a result, complete mix lagoons provide greater levels of treatment within a smaller volume than partial mix lagoons. However, facilities must be provided downstream of complete mixed lagoons to allow removal of settleable solids from the water column. To provide a place for solid settling, lagoons 2 through 4 will continue to act as partial mix aerated lagoons downstream of the complete mix lagoon 1. Lagoon 4 will require no aeration and will continue to be covered to deprive algae of sunlight and allow suspended solids to settle out of the system effluent. Utilizing this lagoon system approach, the Pāhala WWTP will require modification at full buildout flow, but is not anticipated to expand beyond the initial build 14.9-acre site.”

This information will be repeated in the Final EA.

The Draft EA Section 2.3 states that under the Preferred Alternative, the County of Hawai`i would acquire, or otherwise obtain the right to develop and use, a portion of the 42.5-acre Site 7 then construct a new secondary wastewater treatment and disposal facility within a portion of the parcel (see Figure 2.3). Further, as stated in Section 2.3.1:

“The County would work with the current landowner to subdivide the 42.5-acre parcel into two parcels: 1) a 14.9-acre parcel that would be owned by the County; and 2) a 27.6-acre parcel that would include a 25-foot-wide by 1,500-foot-long utility easement and

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would continue to be owned by the current owner. See Figure 2.3 for a preliminary site plan showing the proposed location of the treatment and disposal facility within the southeast portion of Site 7.”

The Final EA will note, the County is working with the current landowner, BP Bishop Estate Trustees (Kamehameha Schools), to subdivide the 42.5-acre parcel (Tax Map Key (TMK): 9-6-002:018) to acquire the property.

The Draft EA Section 2.10.2 states:

“Construction of the portions of the collection system located within County ROWs would not require further land transfer approvals. As previously discussed, two short segments of the planned collection system would be located with privately owned parcels. The County would obtain easements from the land owner(s) as part of the construction process. The Hawai`i County Code Chapter 23, Subdivisions, states that all subdivision plats and all streets or ways within the County created for the purpose of partitioning land shall be approved by the County Planning Department Director.”

Future sewer main extensions and subdivisions will be accommodated, as capacity allows, on a first come, first served basis.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

**From:** Larry Navarro <ldnav1@gmail.com>  
**Sent:** Monday, November 19, 2018 11:27 AM  
**To:** Public Comment  
**Subject:** Pahala Large Capacity Cesspool (LCC)

10349-01  
12/3/18

cc: PC CO  
EPA ERG

Hello,

My name is Larry D. Navarro and my property is at 96-1255 Hinano St., Pahala, HI. 9677. I live in California and am only home once a year. My sister who, lives in Pahala has been trying to keep me abreast with what's going on there in reference to the (LCC). I've been in contact with Sandy Mendonca. She spoke about the possibilities of an exemption plan or possibly a financial assistant plan for the home owners that are required to connect to the new sewer system. I would appreciate being kept informed of any new or upcoming issues in reference to the Pahala LCC.

Mahalo,  
Larry D. Navarro

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10349-01  
March 6, 2020

ref (59)

Mr. Larry Navarro  
ldnav1@gmail.com

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - November 19, 2018 11:27 a.m.

Dear Mr. Navarro:

Thank you for your November 19, 2018 11:27 a.m. comment message regarding the County of Hawai'i Department of Environmental Management (DEM) Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Draft EA Section 2.3.2 states the new collection system would be subject to the County of Hawai'i Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.”*

Further:

*“(c) The director may grant a variance/exemption of the foregoing connection requirements to owners of single-family dwellings existing at the time of installation of the public wastewater system, if the following is found:*

- (1) There are special or unusual circumstances applying to the subject real property which exist that render the ability to connect to a wastewater system an extreme physical or financial hardship; and*
- (2) There are no other reasonable alternatives; and*
- (3) The variance is consistent with the general purpose of the chapter and will not be materially detrimental to public health, safety, or welfare.”*

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened two additional public meetings on October 9, 2018 and March 21,

10349-01  
Letter to Mr. Larry Navarro  
Page 2  
March 6, 2020

2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

The Draft EA Section 7 will be revised to add that the County held additional meetings in Pāhala including one to provide information on financing sources available to owners of parcels which would become accessible to the County collection system. The purpose of the March 21, 2019 meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pahala Community. At the meeting, DEM provided the preliminary results of the County investigation into funding sources and options available for newly accessible property owners once the new treatment and disposal facility and the wastewater collection system have been designed, permitted and constructed.

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawaii Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawaii Legislature, Senate Bill 221 SD1, which could amend Hawaii Revised Statutes (HRS) Chapter §342D to establish a low interest loan program to offer financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

Some ways to stay informed about the project include:

- The County will submit the Final EA to the State of Hawaii Department of Health Office of Environmental Quality Control (OEQC), which facilitates Hawaii's environmental review process and announces the availability of EAs for public review and comment in *The Environmental Notice* (TEN). Issues of TEN can be found on the OEQC website at: <http://health.hawaii.gov/oeqc/>.
- The Draft EA and other project information can be found on the County of Hawaii website at: <http://www.hawaiicounty.gov/dem-wastewater-division>.
- Information regarding project schedules, including US Environmental Protection Agency (USEPA) compliance dates, project updates and milestones can be found on the USEPA website at: <https://www.epa.gov/uic/county-hawaii-administrative-order-consent-closure-cesspools-pahala-and-naalehu>.

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Letter to Mr. Larry Navarro  
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March 6, 2020

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

**Earl Matsukawa**

**From:** Lisa Gollin <lsgollin@hawaii.edu>  
**Sent:** Monday, November 19, 2018 11:46 AM  
**To:** Public Comment  
**Subject:** Pahala Large Capacity Cesspool EA  
**Attachments:** LX Gollin Resume (CRM) September 2018.pdf

(10349-01)  
12/3/18

CC BC Coll  
EPA BRL

Aloha Earl,

I understand from the OEQC Environmental Notice that you are the contact for the proposed Pahala Large Capacity Cesspool Project for Hawai'i Island Final EA. I introduced my consultancy in a prior email to you regarding the Mililani Middle School Classroom Project. Should Pahala Project proceed to the EIS phase and Wilson Okamoto be looking for a CRM firm to produce the Cultural Impact Assessment, please consider my services. I produce quality reports, on time and on budget. I can be hired via a choice of archeology firms.

Attached please find my resume and a CIA prepared for DOTA.

Mahalo for your consideration, Lisa

Lisa Gollin, PhD

Adjunct Faculty, Anthropology Department;  
Affiliate Researcher, Dept. of Complementary and Alternative Medicine,  
Ecology and Health Group, John A. Burns School of Medicine, University of Hawai'i  
& *LX Gollin Research Hawai'i, LLC*



--  
This message has been scanned for viruses and dangerous content by MailScanner, and is believed to be clean.

**Lisa Gollin, PhD**

lsgollin@hawaii.edu  
808.783.9877

**Capabilities**

Project Management/Leadership  
Qualitative & Quantitative Research  
State & Federal Ethnography Studies  
◊ Cultural Impact ◊ Landscape  
◊ Oral History ◊ Trad. Use  
◊ Rapid Assessment  
Academic & Nonacademic Writing  
Training & Instruction

**Research Areas**

Cultural Resource & Heritage Mgmt.  
Wildfire Prevention & Response  
Ethnobotany & Biology  
Medical Anthropology

**Consultancy Contracts (Selected)**

Guide & Training for Improving  
Cultural & Archeology Studies:  
Methods & Report Preparation (2018)

Kalaupapa, Airport Improvements  
Project CIA, Moloka'i (2017)

Pua Loke Multi-Family Affordable  
Housing Development CIA, Lihue,  
Kaua'i (2017)

Ala Wai Canal Dredging, Wall Repair &  
Improvements Project CIA, Pālolo,  
Makiki, & Mānoa Ahupua'a Honolulu,  
O'ahu (2016)

Challenges to Rapid Wildfire  
Containment in Hawai'i (2015)

**State & Federal Reports (Selected)**

Traditional Cultural Property &  
Ethnographic Report for Mākuia,  
prepared for the US Army Corps of  
Engineers, Environmental Branch.  
(2013 | *Classified*)

Thirty Meter Telescope Observatory &  
Hale Pohaku Support Facilities Project  
CIA, Maunakea, Hawai'i Island (2010)

Sheraton Waikiki Hotel Gray's Beach  
Restoration Project CIA, Waikiki  
Ahupua'a, Honolulu (Kona) District,  
O'ahu, (2009)

**Guest Blog**

The Power of Sharing Life Stories: A  
Guide for Interviewing Elders

**25 Years Conducting Social Science Research in Hawai'i, California and Abroad  
on Natural-Cultural Resources, Ethnobiology and Botany, Health & Medicine**

**EXPERIENCE**

LX GOLLIN RESEARCH HAWAII', LLC  
Honolulu, Hawai'i | 2015 - ongoing

**Sole Proprietor, Ethnographer**

Specialize in cultural impact assessment (CIA), traditional cultural properties (TCP) & other ethnographic studies to comply with state & federal environmental & historic preservation laws. Produce customized guides & staff training on ethnographic methods for Cultural Resource Management (CRM) firms. Responsible for social science component (in-depth interviews with incident commanders across Hawai'i, study design, data analysis, synthesis, report preparation, grant writing, conference presentations & publications) as part of interdisciplinary team on the Challenges to Rapid Wildfire Containment in Hawai'i Project.  
◆ Over a dozen projects completed on-time, on-budget, approved on first review  
◆ Complex, multi-stakeholder studies performed across the Hawaiian Islands  
◆ Leadership & participation in academic & professional workshops, panels & publications

CULTURAL SURVEYS HAWAII', INC.  
Waimānalo, Hawai'i | 2006 - 2013

**Supervisor & Lead Researcher, Cultural Studies Division (2011 - 2013)**

◆ Trained & led 5-member team in the production of a TCP Survey & preparation of a National Register of Historic Places nomination application  
◆ Lead researcher & author of the TCP Survey & second author of the NRHP nomination.  
◆ Supervised, co-wrote, edited & advised on cultural & archeology reports.

**Manager, Cultural Studies Division (2006 - 2010)**

◆ Performed & managed over 100 studies on cultural-natural resources & historic properties across the Hawaiian Islands.  
◆ Built/managed staff from 2 to 13 cultural specialists on O'ahu & Hawai'i Island offices  
◆ Raised standards for methods, compliance & publications, creating the first in-house guidelines & procedural manuals on CIAs, Anthropology Methods, Scientific Referencing of Plants & Animals, Assessing Local Ecological Knowledge, & Report Editing.

JOHN A. BURNS SCHOOL OF MEDICINE  
University of Hawai'i Mānoa, Hawai'i | 2002 - 2005

**COMPLEMENTARY & ALTERNATIVE MEDICINE DEPARTMENT (2005)**

**Coordinator, Minority Involvement in Clinical Research Opportunities**  
Managed staff, designed survey & conducted focus group interviews, data analysis & co-authorship of articles on National Institute of Health (NIH) research grant investigating Asian Pacific Islander (API) participation in medical research.

**DIVISION OF ECOLOGY & HEALTH (2002 - 2005)**

**Assistant Research Faculty** Helped develop new program exploring the nexus of ecosystem & human health. Performed grant-writing, interdisciplinary & international collaborations, education & community outreach projects & research as co-investigator or PI on:  
Strengthening Community Capacity for Health in Waimānalo; Biocultural Dimensions of Leptospirosis & Taro Farming; Ethnobotanical Evaluation of Native vs. Nonnative Plants for Conservation Management & more.

SCHOOL OF NURSING & DENTAL HYGIENE  
University of Hawai'i Mānoa, Hawai'i | 2001-2002

**Curriculum Coordinator, Master in Clinical Research Program**

Helped develop a Master degree program in clinical research for the Schools of Medicine & Nursing (NIH R21 grant). Evaluated campus courses relevant to clinical research; developed curriculum; recruited instructors & mentors; conducted needs assessment survey on clinical research programs in the US; collaborated with the University of California, San Francisco on didactic material & workshop; co-wrote a NIH R25 training grant proposal.



#### Advanced Training

Advisory Council on Historic Preservation, Section 106 (2011)

#### Academic Appointments

Adjunct Assist. Faculty & Guest Lecturer, Anthropology Dept. Univ. of Hawai'i | 2012 - present

Adjunct Assist. Faculty, Complementary & Alternative Medicine Dept. Univ. of Hawai'i | 2005 - 2017

Affiliate Researcher, Ecology & Health Group Univ. of Hawai'i | 2005 - 2008

Visiting Colleague, Botany Dept. Univ. of Hawai'i | 2005 - 2006

Research Assoc., National Tropical Botanical Garden Kalaheo, Kaua'i | 2002 - 2004

#### Journal Reviews & Boards

Anthropology of Food | 2017  
Journal of Ethnobiology | 2016  
Economic Botany | 2015  
Ethnobotany Research & Applications: Reviewer & Editorial Board | 2005 - 2008  
EcoHealth Journal | 2004

#### Affiliations

American Anthropological Assn.  
Anthropology & the Environment  
International Soc. of Ethnobiology  
Natl. Assn. of Practicing Anthros.  
Society for Applied Anthropology  
Society for Medical Anthropology  
Society of Economic Botany  
Society of Ethnobiology

#### Education

UNIVERSITY OF HAWAII, MĀNOA  
PHD, Anthropology 2001  
MA, Anthropology 1995

UNIVERSITY OF CALIFORNIA, SANTA CRUZ  
BA, Anthropology & Southeast Asian Studies 1981

September 2018

#### PEER REVIEWED PUBLICATIONS (SELECTED)

- 2018 Gollin LX, Trauernicht, CP. The Critical Role of Firefighters' Place-Based Environmental Knowledge in Responding to Novel Fire Regimes in Hawai'i. In: C. Fowler, J. Welch & A. Sullivan (eds). *Fire Otherwise: An Ethnobiological Approach to Understanding the Impacts of Social & Environmental Change on Fire Ecology*. University of Utah Press, Salt Lake City.
- 2008 Gollin LX. Integrating Ethno & Bio-Medical Health Care: Focus on Polypharmacy in Kalimantan (Indonesian Borneo). In: Forests & Health C. Colfer (ed). Center for International Forestry Research & Earthscan, London.
- 2006 McClatchey WC, Gollin LX. An ethnobotany research training workshop in Madagascar. *Ethnobotany Research & Applications*, 3(4):309-328.
- 2006 Rakotonandrasana SR, McClatchey WC, Gollin LX. An ethnobotany training workshop in Madagascar: Photo essay. *Ethnobotany Research & Applications*, 3(4):391-404.
- 2005 Gollin LX, Harrigan RC, Calderón JL, Perez J, Easa D. Improving Hawai'i an & Filipino involvement in clinical research opportunities: Qualitative findings from Hawai'i. *Ethnicity & Disease* 15(4):111-119.
- 2005 Vinetz J, Wilcox B, Aguirre A, Gollin LX, Katz AR, Fujioka RS, Maly K, Horwitz P, Chang H. Beyond disciplinary boundaries: Development of novel methodologies to study leptospirosis as a transdisciplinary model of understanding infectious disease emergence. *EcoHealth* 2:1-16.
- 2004 Gollin LX, McMillen H, Wilcox B. Participant-observation & pile-sorting: Methods for eliciting local understandings & valuations of plants as a first step towards informed community participation in environment & health initiatives in Hawai'i. *Applied Environmental Education & Communication* 3(4):259-257.
- 2004 Gollin LX. Subtle & profound sensory attributes of medicinal plants among the Kenyah Leppo' Ke of East Kalimantan, Borneo. *Journal of Ethnobiology* 24(2):173-201, Fall/Winter.
- 2003 Harrigan RC, Gollin LX, Casken J. Barriers to increasing native Hawai'i an, Samoan & Filipino nursing students: Perceptions of students & their families. *Nursing Outlook* 51:25-30.
- 1997 Gollin LX. Having your medicine & eating it too: A preliminary look at medicine & meals in Kayan-Mentarang, Kalimantan, Indonesia. *Borneo Research Bulletin*. 28:28-41.

#### CONFERENCE PRESENTATIONS (SELECTED)

- 2017 Society of Applied Anthropology (Santa Fe, NM). "The Critical Role of Firefighters' Place-Based Environmental Knowledge in Responding to Novel Fire Regimes in Hawai'i." Lead author-presenter with C. Trauernicht.
- 2015 Society of Ethnobiology (Santa Barbara, CA). "The Wicked Problem of Wildfires in Hawai'i & the Critical Role of Place-Based Environmental Knowledge of Firefighters Responding to Novel Fire Regimes." Lead author-presenter with C. Trauernicht.
- 2014 Intl. Society of Ethnobiology (Bhutan). "Caring for the 'Rolling Beauty of Time'—the Regeneration of Ka'anani'au, a Hawaiian Bio-cultural Land Resource System." Co-author-presenter with G. Kila & C. Oliveira.
- 2003 (Invited) Center for Intl. Forestry Research Forests, Livelihoods & Forests & Health Workshop (Bogor, Indonesia). "Eco-Health Research Priorities: Observations from Kalimantan."



10349-01  
March 6, 2020

ref (60)

Ms. Lisa Gollin, PhD  
lxgollin@hawaii.edu

Subject: Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project District of Ka'ū, Hawai'i  
Response to Comment - November 19, 2018; 11:46 a.m.

Dear Dr. Gollin:

Thank you for your November 19, 2018 11:46 a.m. comment message regarding the County of Hawai'i Department of Environmental Management (DEM) Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Draft EA Preface states: The DEM has determined that the requirements of Hawaii Revised Statutes, Chapter 343, can be fulfilled by preparing an EA with FONSI. A Final Environmental Assessment (EA) will be issued for this project. As such, a cultural impact assessment will not be included.

The Draft EA Summary states: No significant environmental impacts are anticipated from construction and use of the collection system and the wastewater treatment and disposal facility.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

**John Sakaguchi**

10349-01  
12/5/18

**From:** Fujio, Mary <Mary.Fujio@hawaiicounty.gov>  
**Sent:** Monday, December 3, 2018 8:19 AM  
**To:** Kucharski, William; Beck, Dora; eplan1@aol.com; Michelle Sorensen  
**Subject:** FW: Pahala Sewer Project comments (from Tanya Ibarra)  
**Attachments:** County of Pahala Sewer Project.pdf

cc: BC COM  
EPA ERG

Received at COHDEM.

**From:** Tanya Ibarra [mailto:tibarra2000@gmail.com]  
**Sent:** Saturday, December 01, 2018 9:35 PM  
**To:** cohdem <cohdem@hawaiicounty.gov>  
**Subject:** Pahala Sewer Project comments

Please review the attached comments regarding the Pahala Sewer Project.

Dear Mayor Harry Kim,

I am writing regarding the Pāhala Community Large Capacity Cesspool Replacement Project. I have read the Draft Environmental Assessment for the Pahala Large Capacity Cesspool Replacement Project and have some concerns regarding the proposal and it's details.

**COMMUNITY INPUT ON THE PROJECT:** According to the Draft, *Section 2.1.4 History of Wastewater Management in Pahala* the document shows that the County held a community meeting to present sewer system replacement alternatives as well as a voting system in which the Pahala community chose the preferred sewer alternative resulting in 87% of the returned ballots in favor of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County.

**MY CONCERN:** The entire Pahala community was NOT included in the determination of whether or not a sewer system for the entire community was wanted. According to the Communication document (COM 0293.004 2004-2006), the ballots were only sent to homeowners who were connected to the Large Capacity Cesspool (LCC) provided by C. Brewer. In the communication, it includes a question and answer section, in which one of the questions (shown below) specifically shows that if a homeowner needs to connect, C. Brewer has provided money to the County to remain in escrow to pay for the connection of these homes to the sewer lines.

**Question #5 – Alternative 1:**  
*If Alternative 1 is selected, will the residents be required to connect to the new system?*

**Answer #5:**  
Yes, once a county system is installed in front or near your home, you will need to connect. Please be aware however, that the cost for the service laterals that connect to the County sewer lines will be funded by C. Brewer and Company, Limited. The homeowner will not need to pay for this cost.

The current proposal is expanding the system to include homeowners who are not in violation to the Federal law against the use of Large Capacity Cesspools (LCC). This seems like a waste of time and resources which could be directed to more important needs in our community. It is obvious that the original proposal in 2004 was intended only for those homeowners who were on the LCC system. Since the inception of this project, the costs have skyrocketed to far beyond the \$1.6 million which was outlined originally in the ballot system (COM 0293.004 2004-2006). The County should simply work with the original proposal to give those homeowners on the LCC the sewer system they requested. To include the entire community of Pāhala is an unnecessary burden to the County and to the homeowners who are required to hook into the line at the cost of \$20,000 each.





10349-01  
March 6, 2020

ref (61)

Ms. Tanya Ibarara  
[tibarara2000@gmail.com](mailto:tibarara2000@gmail.com)

Subject: Draft Environmental Assessment for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - December 3, 2018; 8:19: a.m.

Dear Ms. Ibarra:

Thank you for your December 3, 2018 8:19 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

#### COMMUNITY INPUT ON THE PROJECT

On April 25, 2010, a community meeting sponsored by Councilman Guy Enriques was held at the Pāhala Community Center to discuss the Nā'ālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meeting, an informational handout prepared by the County's Wastewater Division provided a brief history of the project documenting that, in 2004, Mayor Kim's office used a ballot system to get input from property owners regarding different wastewater treatment/disposal alternatives for those property owners connected to the LCCs who would no longer be served by the C. Brewer system after LCC closure. As reported in the Draft EA Section 2.1.4, 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handout indicated that Mayor Kim's office advised the property owners the County would move forward with new systems for Nā'ālehu and Pāhala on November 5, 2004. Additionally, the handout stated public meetings were held in both Nā'ālehu and Pāhala in November 2006 to discuss the wastewater system alternatives. The handout included that adequate land for the treatment and disposal system had not been identified in Pāhala. The handout also stated that all properties accessible to the new sewer system would be required to connect in accordance with Hawaii County Code Chapter 21.

The Draft EA Section 2.9 discusses the relationship between the current project and the 2007 Final EA for the Naalehu-Pāhala Large Capacity Cesspool (LCC) Conversion project. As stated in Section 2.9:

"After the issuance of the Final EA and Negative Declaration/FONSI in 2007, the County conducted additional study and evaluation of the proposed LCC conversion project. The

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

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County eventually concluded that the LCC conversion project described in the 2007 Final EA would not meet the need to provide a collection system and a treatment and disposal facility, close the LCCs, and provide for the future needs of the Pāhala community. This determination was based on several factors..."

#### REASON FOR THE PROJECT

The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the Pāhala LCCs. The Draft EA Section 2.3.2 discusses the construction of a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current collection system includes facilities located in the backyards of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from individual landowners to enter them, through private property, to inspect, maintain, repair or replace existing sewer facilities: all activities essential to an efficient, functioning system. The Draft EA Section 2.3.2 states the new collection system would be subject to Hawai'i County Code (HCC) Chapter 21, Sewers. Specifically, Article 2 (Public Sewers), Section 21-5, states the following:

*"(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice."*

Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened two additional public meetings on October 9, 2018 and March 21,

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Letter to Ms. Tanya Ibarara  
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March 6, 2020

2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

The Draft EA Figure 2.2 shows the collection system on the various streets within the community. The Draft EA Section 2.2 states the Pāhala Large Capacity Cesspool Replacement project is to provide infrastructure necessary to enable the County to comply with the Safe Drinking Water Act and Administrative Order on Consent between the County and the Environmental Protection Agency with respect to closure of the Pāhala large capacity cesspools.

The extent of the collection system is to ensure the parcels connected to the former C. Brewer system will have access to the treatment and disposal facility, so the large capacity cesspools can be closed.

The Draft EA Section 6.2.2 discusses the Ka'ū Community Development Plan (CDP): "Section 5 of the CDP prioritizes improvements in infrastructure, facilities, and services, including Section 5.8 which is applicable to ... Environmental management facilities, including expanded sewer lines, ...". Policy 120 is to "Extend the primary wastewater collection lines in Pāhala and Nā'ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems."

The collection system will be consistent with Policy 120 as the improvements for the Pāhala LCC Replacement project have been designed not to preclude accommodating the Pāhala community. Similarly, the treatment and disposal facility has been designed not to preclude accommodating the wastewater flows from the collection system from the Pāhala community.

It is conventional to extend a utility between street intersections to minimize the number of manholes required. As stated in the Draft EA, the collection system is routed within the County right-of-way for ease of access for construction and maintenance.

#### **WATER LINE/SEWER LINE PLACEMENT**

On April 5, 2018, the County of Hawai'i Department of Water Supply (DWS) provided the following (See the Draft EA Appendix A):

"The Department requests that the construction plans show, and the proposed sewer lines be installed with, the proper horizontal and vertical clearances from our existing water system facilities and concrete jacketing at waterline crossings, where necessary, as recommended by the Department's Water System Standards.

In addition, backflow prevention devices must be installed where there are connections to our water system at wastewater processing and treatment facilities".

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The detailed design will be informed by and the construction documents will reference the DWS Water System Standards.

The above information will be included in Section 2.3.2 of the final EA.

#### **ERRORS IN THE PROPOSAL**

Neither the geographical size nor population of Pahala affect the Purpose and Need for Action as outlined in the Draft EA Section 2.2. The purpose is to close the County-operated LCCs. Section 2.1.1 will be revised to state: "The Ka'ū district includes several communities, including the town of Pāhala. Pāhala had a population of approximately 1,341 persons in 2016."

#### **PLACEMENT OF THE FIRST PHASE OF THE SEWER PROJECT**

Please refer to the above response under heading REASON FOR THE PROJECT.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

10-249-01  
12/11/18  
CC BC CO11  
GPH ERD



December 4, 2018

To: County of Hawaii  
Environmental Protection Agency

From: Dorothy Kalua  
P. O. Box 626  
Pahala, Hawaii 96777

Re: Sewage and Wastewater Treatment Site

**My name is Dorothy Kalua and I Live on Maile Street in Pahala. I would like to make known my opposition to the chosen site on the corner of Maile Street and Mamalahoa Highway. With all the available land in Pahala I feel the area below Mamalahoa Highway would be a better option. There is a concern of flooding which could cause road closure to Mamalahoa Highway. I understand our facility is similar to Keaukaha's and have spoken to residents in that area about the smell. Our Kupuna in Pahala suspect possible burial site near or on the land chosen.**

**Again, I express my concern and opposition to the chosen site.**

**Mahalo!**

*Dorothy Kalua*  
Dorothy Kalua

96-3179 Maile St  
Pahala HI 96777



10349-01  
March 6, 2020

ref (68)

Ms Dorothy Kalua  
P.O. Box 626  
Pāhala Hawai'i 96777

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - December 4, 2018

Dear Ms. Kalua:

Thank you for your December 4, 2018 comment letter regarding the regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool (LCC) Replacement project. Our responses follow

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the

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subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

The County is aware of two existing culverts that allow stormwater to flow across the Māmalahoa Highway in the vicinity of the project.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.2.3.2 (a) states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

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This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows drain through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pahala public meetings held in December 2017 and October 2018, the State of Hawai'i Department of Transportation (DOT) Hawai'i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facilities will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 Floodplain Management, Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to “comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event as shown in the Department of Public Works “Storm Drainage Standards”.

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project site “shall not alter the general drainage pattern above or below the development”. Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system.

The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1 states the aerated lagoons will be equipped with high-density polyethylene liners to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

The former Hilo Wastewater Treatment Plant (WWTP) at Keaukaha is not currently in use as a County WWTP, nor was it similar to the wastewater treatment and disposal facilities proposed for this project. Facilities at TMK 2-1-011:004 are currently owned by the State of Hawai'i, University of Hawai'i, as the Pacific Aquaculture Coastal Resource Center.

The Draft EA Section 3.14.2 states:

"Wastewater treatment plants can be a source of nuisance odors to the surrounding community if not properly designed or operated. Typically, nuisance odors are most commonly associated with anaerobic (without oxygen) conditions and with processing of residual solids. Incoming raw sewage flows to the proposed wastewater treatment and disposal facility would first be routed to the headworks, which is the facility where the solids are removed from the flows.

To mitigate potential nuisance odors, the headworks would be equipped with an odor control system with a GAC scrubber to remove odor. A package GAC scrubber passes the odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon. The County currently operates GAC scrubbers at other facilities, and it has been proven to be an effective means of odor control both locally and nationwide. The treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring. The disposal groves would be irrigated with fully-treated and aerobic secondary effluent from the treatment process; irrigation with secondary effluent is not associated with development of nuisance odor conditions."

This information will be repeated in the Final EA Section 3.14.2.

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3 provides the Preliminary Site Plan for the new treatment and disposal facility, which shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/weblink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

Between September 18, 2018 and January 10, 2019, a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were present. The AIS completed in March 2019 documents that a sealed lava tube is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with the SHPD.

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the final EA.



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Letter to Ms Dorothy Kalua  
Page 6  
March 6, 2020

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read 'Keola Cheng', written in a cursive style.

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



PELE DEFENSE FUND

**Our Mission Statement**  
Pele Defense Fund is dedicated to the Preservation and Perpetuation of Native Hawaiian Traditional Rights, Customs, and Practices, and to the Protection of our Unique Island Environment for all of Hawai'i to enjoy Now and in the Future



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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
345 Koluani's Street, Suite 411 Hilo, Hawaii 96720  
Ph: (808) 961-8093 - Fax: (808) 961-8096  
coddem@co.hawaii.hi.us  
<http://www.hawaii.gov/department-of-environmental-management/>

December 10, 2018

10349-10

12/11/18

CC: BC COM  
EPA ERG

Dear Mr. William Kucharski,

Please accept this letter for and behalf of the Pahala Community, Hawaii Island who are responding to the Draft Environmental Assessment/Anticipated Finding of No Significant Impact Notice (Joint NEPA/HEPA), Pahala Community Large Capacity Cesspool Replacement Project in Pa'au'au, Ka'u, Hawaii Island, Hawaii, Tax Map Key (TMK): (3) 9-6-002:018.

We are especially grateful that you have given us the opportunity to have the extended time to comment by Dec. 10, 2018. We are concerned about the proposed project action and the community is *opposing* the site chosen for development of Sewer Replacement Systems. The category's listed below will identify the various reasons the community feels the project should be moved. The community has agreed that relocating the proposed project action to site 9, makai of the hwy is ideal.

**FLOODING**

1. Large quantities of water during heavy rainfall will flow down towards the area of proposed site (TMK): (3) 9-6-002:018.
2. Community entrance and exits will be impacted by flooding and closures will impact emergency routes for safety.
3. Heavy debris will create hazardous and dangerous scenarios.
4. Heavy flooding will create excessive damage to lave tubes and burials.
5. Hospital and emergency facilities will be restricted with heavy flooding and access will be impacted.
6. Emergency first responders, fire and EMS vehicles and equipment will be isolated with closures and flooding.

**SECTION 106**

1. No subsurface testing was done on lava tubes and burials.
2. Historically lava tubes with burials were identified during other development projects in Pahala.

REC'D ENVIRONMENT  
12/10/18 1507  
(hand-delivered. mef)

PELE



PELE DEFENSE FUND

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**HOOK UPS**

1. What were the agreements made between C. Brewer and Hawaii County during the transition of turnover?
2. Community concerns about the condemnation of property.
3. Why are some residents paying fees and others not? Should not discriminate.
4. Did C. Brewer give Hawaii County funding?
5. Should the County of Hawaii fund the whole project including hook ups?
6. What were the reasons Pahala Community was chosen to have the cesspool conversions done by 2021? The rest of the State has until 2050?
7. There is no data to prove Pahala community at status quo shows an impact in ground water contamination.
8. Will outside community waste be transported to this community?

**NUISANCE**

1. Smell of facility is a concern.
2. Visual, development of facility at site will be an eye soar.
3. The sewer will attract pests and the increase will be a problem.
4. Community does not want harmful airborne bacteria.

**NATURAL DISASTERS**

1. Hazard plan?
2. Continuous seismic activities recorded at USGS.
3. Flooding
4. Hurricanes
5. Fire
6. Spills from pump failure
7. Employee strikes (disputes)
8. Emergency power source for running facilities?
9. Water use or source. Is there a permanent water source for running the sewer systems?

*The above concerns should be resolved by relocating the proposed facility across highway 11.*

*Thank you very much for the extension and the opportunity to have our concerns heard.*

Mahalo a nui loa,

PELE



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 Pallikapu Dedman  
 President  
 Terri L. Napeahi  
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 (808) 315-9996  
 Cc:  
 Russell Ruderman  
 Mayor Harry Kim  
 Councilwoman Maile David  
 Congresswoman Tulsi Gabbard  
 Wilson Okamoto Corporation

October 22, 2018

To: The County of Hawai'i, U.S. Environmental Protection Agency,  
 Brown & Caldwell, Wilson Okamoto Corporation

Re: Move this proposed site! Pahala Large Capacity Cesspool (LCC) Replacement Project  
 EPA Grant XP-96942401

We the undersigned, are in opposition of the proposed site for the sewage and wastewater treatment plant located on the corner of Maile St. and Miamalahoa Highway. We feel that this proposed site will have a negative effect on the entire Pahala Community. The residents were not informed or consulted in the selection of this site by the County of Hawai'i, EPA, and their contractors. Concerns relating to this project are, health & safety, environmentally, financially, visually and historically. We propose that the site be relocated below the Mamalahoa Highway, further away from the community. We sign this petition because we care about the quality of life here which we feel will be permanently and negatively impacted by the proposed site.

Name	Signature	Address	Email
Kayoko Munnerlyn	Kayoko Munnerlyn	P.O. Box 917 Pahala HI	kayoko@gmail.com
Jade Cabreros	Jade Cabreros	P.O. Box 1091 Pahala HI	jadecabreros@gmail.com
Margie Tamayo	Margie Tamayo	P.O. Box 914 Pahala HI	gmicm143@yahoo.com
Dorothy Kaku	Dorothy Kaku	P.O. Box 626 Pahala HI	
Loretta Lorenza	Loretta Lorenza	P.O. Box 63 Pahala	
Mary Terrelle	Mary Terrelle	P.O. Box 492 Pahala	
Rosita Jungpalan	Rosita Jungpalan	P.O. Box 747 Pahala	
Rose Marie Smith	Rose Marie Smith	P.O. Box 492 Pahala	
Vivian Paucubelle	Vivian Paucubelle	P.O. Box 301 Pahala	
Emily Keshuloo	Emily Keshuloo	P.O. Box 394 Pahala	
Robert Darbo	Robert Darbo	P.O. Box 465 Pahala	
Hilari Kauna	Hilari Kauna	P.O. Box 533 Pahala	
Leilani Aldaya	Leilani Aldaya	P.O. Box 43 Pahala	
Tommy Williams	Tommy Williams	P.O. Box 144 Pahala	
Doris Davis	Doris Davis	P.O. Box 39, Pahala	
Rosita Villedor	Rosita Villedor	P.O. Box 604 Pahala	
Rosalina Rosario	Rosalina Rosario	P.O. Box 606 Pahala	
Fely Villegas	Fely Villegas	P.O. Box 52 Pahala	
August Billo	August Billo	" " 99 "	
Alfred Galiza	Alfred Galiza	P.O. Box 614 Pahala	
Adele Galiza	Adele Galiza	" " "	

October 22, 2018

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Brown & Caldwell, Wilson Okamoto Corporation

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Name	Signature	Address	Email
Sharon Ponce	<i>Sharon Ponce</i>	P.O. Box 356 Pahala HI	cbponce2@gmail.com
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Vicki Paaluchi	<i>Vicki Paaluchi</i>	P.O. Box 401 Pahala	
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Michelle Sherry	<i>Michelle Sherry</i>	P.O. Box 396 Pahala	
Mary Ibarra	<i>Mary Ibarra</i>	P.O. Box 396 Pahala	

October 22, 2018

To: The County of Hawai'i, U.S. Environmental Protection Agency,

Brown & Caldwell, Wilson Okamoto Corporation

Re: Move this proposed site! Pāhala Large Capacity Cesspool (LCC) Replacement Project  
EPA Grant XP-96942401

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Name	Signature	Address	Email
Charles Andrade	<i>Charles Andrade</i>	P.O. Box 421 Pahala	
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Jordan Motividad	<i>Jordan Motividad</i>	P.O. Box 146 Pahala	
Ja. Blanco	<i>Ja. Blanco</i>	P.O. Box 417 Naulaha	
Joseph P. Ponce	<i>Joseph P. Ponce</i>	P.O. Box 334 Pahala	
Tereza Ara	<i>Tereza Ara</i>	P.O. Box 116 Pahala	
Guadalupe Berg	<i>Guadalupe Berg</i>	P.O. Box 417 Naulaha	
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Allan Aguirre	<i>Allan Aguirre</i>	P.O. Box 351 Pahala HI	
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Michael Munnery	<i>Michael Munnery</i>	Box 967 Pahala HI 96777	
Mary Jane Ballio	<i>Mary Jane Ballio</i>	Box 125 Pahala HI 96777	
Rose Young	<i>Rose Young</i>	P.O. Box 925 Pahala HI 96777	
Raymond Ballio	<i>Raymond Ballio</i>	Box 622 Pahala HI 96777	

October 22, 2018

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EPA Grant XP-96942401

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Name	Signature	Address	Email
Stephanie Kawano	[Signature]	P.O. Box 12 Pāhala	
James Yamaki	[Signature]	P.O. Box 204 Pāhala	
Jerry Kusumki	[Signature]	P.O. Box 37 Pāhala	
Lorene Agushi	[Signature]	P.O. Box 34 Pāhala	
Jerry Villan	[Signature]	P.O. Box 495 Pāhala	
Kuipok Dacalis	[Signature]	P.O. Box 721 Pāhala	
DON F Dacalis	[Signature]	P.O. Box 721 Pāhala	
Merical Craig	[Signature]	P.O. Box 921 Pāhala	
MARY A. Luster	[Signature]	P.O. Box 222	
Michael S. Luc	[Signature]	P.O. Box 175 Pāhala	
Jerry Vidal	[Signature]	P.O. Box 215 Pāhala	
Jana Kanhi	[Signature]	P.O. Box 33 Pāhala	
Alicia S. Lundy	[Signature]	P.O. Box 38 HUNA	
Madelina Makana	[Signature]	Box 354 Pāhala	
Patricia Schnaff	[Signature]	P.O. Box 515 Pāhala	
Corynn S. Farnsworth	[Signature]	CORRYNN BARRIS P.O. Box 57 Pāhala	
Michael S. Luc	[Signature]	Pāhala	
Jack Moses	[Signature]	PO 200 Pāhala 96771	
Jenny Davis	[Signature]	Pāhala HI 96777	
EdWARD M. K. [Signature]	[Signature]	P.O. Box 344 Pāhala	

Trinidad Adarinto P.O. Box 944 Pāhala  
Abigail Adarinto Abigail Adarinto P.O. Box 493 Pāhala

Print Name	Signature	Address	E-mail
Brenda Johnson	[Signature]	P.O. Box 993 Hilo 96721	
AYAME TAKAHARA	[Signature]	P.O. Box 716 Pāhala	

11/19/2018 11:11:11 AM









10349-01

Letter to Ms. Terri L. Napeahi

Page 2

March 6, 2020

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai‘i Department of Transportation. Site 9 would require additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

### Flooding

1. The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai‘i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai‘i Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM panel is reproduced in Appendix B as figure 4-13.

This information will be repeated in the Final EA.

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The Draft EA Section 3.23.2 (a) states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows drain through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pāhala public meetings held in December 2017 and October 2018, the State of Hawai‘i Department of Transportation (DOT) Hawai‘i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated from mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facilities will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai‘i County Code (HCC) Chapter 27 Floodplain Management Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to “comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event as shown in the department of public works “Storm Drainage Standards”.

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Adherence to HCC Chapter 27 Section 20 (f) will ensure the treatment and disposal facility shall not alter the general drainage pattern above or below the development. Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The facilities related to the wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1 states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process for any berms intended to act as secondary containment. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA.

2. See 1 above. Based on this analysis, the project will not contribute to an increase in road closures due to flooding.
3. See 1 above. As a result, heavy debris generated from the proposed project will be designed to be retained onsite.
4. The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube

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opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3, which provides the Preliminary Site Plan for the new treatment and disposal facility, shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019, a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on-site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with SHPD.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/weblink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

Based on information in 1 and above, excessive damage to lava tubes and burials will not result from construction of the collection system or construction of the treatment and disposal facility at the proposed project Site 7.

This information will be included in the final EA.

5. The Draft EA Figure 2.3 shows the intersection of Maile Street and Māmalahoa Highway lies at about 580 feet above mean sea level (MSL). The Draft EA Figure 2.2 shows the Pā'au'au Gulch crosses under Māmalahoa Highway near the hospital about 0.88 miles north of that intersection and lies at approximately 780 feet MSL or about 200 feet higher in elevation than the culvert at the Maile Street and Māmalahoa Highway intersection. Due to this distance and the elevation difference, surface flows at Site 7 would not affect the gulch. Similarly, the Kaimani Street and Māmalahoa Highway intersection lies about 0.84 miles

north of the proposed facility site and at about 780 feet MSL. Surface flows at the facility would also not affect that intersection. Figures 2.2 and 2.3 will be repeated in the Final EA.

Based on this information and 1 above, development of the treatment and disposal facility is not anticipated to create restrictions related to access to hospital and emergency facilities.

6. See 1 and 5 above. In accordance with Hawaii Fire Department requirements, Fire Department access and water supply to the proposed Site 7 will be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by Hawaii County.

#### Section 106

1. See 4 above in **Flooding** section. Geophysical and geotechnical subsurface testing will be completed for the Pāhala Large Capacity Cesspool Replacement Project.
2. See 4 above in **Flooding** section.

#### Hook Ups

1. The Draft EA Section 2.1.4 states:

“Around 2006, C. Brewer requested the County construct and maintain a new and improved community sewer system. A County Council Resolution approved the C. Brewer request. In anticipation of C. Brewer's dissolution, C. Brewer proposed, and the County agreed in 2007, to enter into a formal agreement to not only construct and maintain a new and improved community sewer system but to assume ownership of the existing system including the LCC's by April 30, 2010.”

The agreements are not pertinent to the content requirements of the Pāhala Large Capacity Cesspool Replacement Project Draft EA.

2. The Draft EA Section 2.3 states, the County would acquire, or otherwise obtain the right to develop and use, a portion of the 42.5-acre Site 7, then construct a new secondary wastewater treatment and disposal facility within a portion of the parcel. The Final EA will note, the County is working with the current landowner, BP Bishop Estate Trustees (Kamehameha Schools), to subdivide the 42.5-acre parcel (Tax Map Key (TMK): 9-6-002:018) to acquire the property by means of the method they prefer. Sites 7, 8 and 9 would all involve a similar property acquisition process, as all are currently owned by the same entity. Additional property acquisition is not anticipated for the Preferred Action beyond that outlined in Section 2.3.

3. The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources.

In order to meet the intent as stated in the 2017 AOC, the County has committed to perform the following actions for the Pāhala Large Capacity Cesspool Replacement project:

- i. Construct a secondary wastewater treatment facility;
- ii. Replace the wastewater collection system serving Pāhala Community; and
- iii. Close the Pāhala community cesspools.

Completion of the above actions includes connecting those properties currently served by the LCCs to the proposed new wastewater collection, treatment and disposal system. Once the actual costs are determined, County Council action is still required to approve the expenditures.

The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the County-operated Pāhala LCCs. The Draft EA Section 2.3.2 discusses the construction of a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current collection system includes facilities located in the backyards of many parcels. Where easements for the existing collection system aren't accessible, the County must obtain permission from individual landowners to enter them, through private property, to inspect, maintain, repair or replace existing sewer facilities: all activities essential to an efficient, functioning system. The Draft EA Section 2.3.2 states the new collection system would be subject to the County of Hawai'i Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a)Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.”*

Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the

new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

4. This is not a comment pertinent to the content requirement of the Draft EA.
5. See 3 above.
6. The Draft EA Section 2.1.3 states:

“In 1999, EPA promulgated regulations under the Safe Drinking Water Act’s (SDWA) Underground Injection Control (UIC) Program which prohibited the construction of new LCCs as of April 2000 and required the closure of all existing LCCs by April 5, 2005 (40 CFR § 144.88). Under federal regulations, an LCC is a cesspool which serves multiple dwellings, or for non-residential facilities has the capacity to serve 20 or more persons per day. Cesspools can release disease-causing pathogens and other pollutants (e.g., nitrates) into groundwater aquifers, streams, and eventually the ocean, thus leading to public health and environmental concerns.”

In June 2017, EPA and the County entered into an Administrative Order on Consent (AOC) to close the County-operated LCCs serving the Pāhala Community by June 2021.”

40 C.F.R. § 144.88 applies to all existing LCCs across the nation. Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently using cesspools for sewage disposal.

7. No groundwater quality data is available in the vicinity of the existing LCCs. The Draft EA Section 2.2 states:

“The purpose of the actions considered in this Environmental Assessment (EA) is to provide the infrastructure necessary to enable the County to comply with the SDWA and fulfill the compliance provisions of the AOC between EPA and the County with respect to closure of the Pāhala LCCs by June 2021.

The need for action is driven by the public health and environmental concerns associated with LCCs, as described in Section 2.1.3.” (See 6 above).

8. No.

#### Nuisance

1. The Draft EA Section 3.14.2 states:

“Wastewater treatment plants can be a source of nuisance odors to the surrounding community if not properly designed or operated. Typically, nuisance odors are most commonly associated with anaerobic (without oxygen) conditions and with processing of residual solids. Incoming raw sewage flows to the proposed wastewater treatment and disposal facility would first be routed to the headworks, which is the facility where the solids are removed from the flows.

To mitigate potential nuisance odors, the headworks would be equipped with an odor control system with a granulated activated carbon (GAC) scrubber to remove odors. A GAC scrubber passes the odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon. The County currently operates GAC scrubbers at other facilities, and it has been proven to be an effective means of odor control both locally and nationwide. The treatment lagoons would be equipped with mechanical aerators capable of maintaining sufficiently aerobic (with oxygen) conditions within the water column, which would prevent nuisance odor conditions from occurring. The disposal groves would be irrigated with fully-treated and aerobic secondary effluent from the treatment process; irrigation with secondary effluent is not associated with development of nuisance odor conditions.”

This information will be repeated in the Final EA Section 3.14.2.

2. The proposed site plan is included in the Draft EA as Figure 2.3. As noted in Section 2.3.1, “disposal of the treated and disinfected effluent would be accomplished through land treatment in four groves of native, water-tolerant trees occupying a total area of approximately 8.0 acres.” This 8.0 acre planted area, combined with the sloping site topography and existing Cook pine trees (*Araucaria columnaris*) on Maile Street, will provide a visual buffer from both the Māmalahoa Highway and Maile Street. As outlined in Section 3.19.2 of the Draft EA, the Proposed Action is not expected to adversely affect the views or viewsheds identified in the County General Plan. The wastewater collection system would be installed below the streets and therefore would not impact views. Above grade structures may include the operations building, headworks and UV cover structures, fuel storage tank, and low berms around the groves. The existing pine trees along Maile Street, most of which would remain with no changes, would continue to obstruct the viewplanes

from Maile Street. The facility site would be adjacent (mauka) to, and visible from, Māmalahoa Highway (State Route 11); however, impacts to the viewplane would be mitigated by the planted trees in the basins and by the rise in elevation between the highway and the facility.

The Draft EA Section 2.3.1 states the driveway access to the wastewater treatment and disposal facility will be located west (mauka) of the Maile Street and Māmalahoa Highway intersection. Appropriate signs identifying the facility will be posted at the driveway access.

This information will be repeated in the Final EA.

3. The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent is to provide an industry-standard wastewater collection system. The new sewer will replace the old, and there will be less likelihood of pests attracted to the modern, intact system.
4. The aerated lagoon plant design will not result in the migration of aerosols outside of the site boundaries. In addition, disinfection processes selectively kill pathogens or render them incapable of reproduction or harm to humans. As outlined in the Draft EA Appendix B Section 3.2, continuous disinfection of the treated effluent will be provided to protect human health and the environment. The land application groves will incorporate a distribution system at the ground surface which will not produce aerosols (Appendix B, section 4.5.1).

#### Natural Disasters

1. The County will develop a facility management plan in accordance with applicable rules and regulations.
2. Seismic loading, including earthquake and soil loads, will be taken into account during detailed design. The Draft EA Section 3.4.2 states:

"Hawai'i County Code Chapter 5 (Building), Section 5.3 indicates the "International Building Code, 2006 Edition" (IBC) – copyrighted and published in 2006 by the International Code Council, Incorporated – is adopted by the County. Chapter 5 is the applicable code for the construction of buildings, structures, and facilities in the County. The purpose of the seismic provisions in the IBC is primarily to safeguard against major structural failures and loss of life; limiting damage or maintaining functions is not a primary purpose. At a minimum, structures are to be designed and constructed to resist the effects of ground motions from seismic events. The seismic hazard characteristics described in the IBC are based on the seismic zone and proximity of the site to active seismic sources.

The wastewater treatment and disposal facility would be designed and constructed to meet the requirements of the 2006 IBC and Hawai'i County Code Chapter 5 and would comply with seismic loadings established for the County of Hawai'i. This would minimize the potential for an uncontrolled release of untreated or partially treated sanitary wastewater, emergency generator diesel fuel, or disinfection chemicals from the facility during a seismic event."

3. See 1 in **Flooding** above.
4. Hazards related to hurricanes, such as wind, rain, and flood loads, will be taken into account during detailed design. Applicable regulations and standards, including IBC 2006, will be adhered to.
5. The Draft EA Section 3.22.2 states:

"The proposed wastewater treatment and disposal facility would require potable water and fire protection lines from the end of the existing DWS system to the preferred location of the headworks [and] operations building"

All alternatives would be designed according to NFPA 820 "Standard for Fire Protection in Wastewater Treatment and Collection Facilities." In accordance with Hawaii Fire Department requirements, Fire Department access and water supply to the proposed Site 7 will be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by Hawaii County.

This information will be included in the Final EA Section 3.22.2.

6. The Draft EA, Appendix B, Section 4 describes the facility, and contains preliminary design information, including redundant equipment and processes. The Draft EA, Section 3.24.2 states: "A land-line and/or cellular telephone telemetry system would be used to connect the wastewater treatment and disposal facility to DEM and facilitate communication with staff." As outlined in the Draft EA, Appendix B, Section 4.6.6, this system will have an auto-dialer to inform operators of alarm conditions. In addition, the treatment processes will be appropriately designed to have capacity to accommodate upset conditions, including pump and other equipment failures and operational procedures in place to address mechanical and electrical outages. "A standby power system would be provided by a diesel generator and aboveground fuel tank with capacity to support three consecutive days of operation. An electrical service panel would be equipped with a manual transfer switch and generator receptacle. This would provide a connection to a trailer-mounted generator, in the event of [standby] generator failure...."

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7. The proposed facility will be managed in accordance with County of Hawaii policies and procedures in the event of a labor disruption.
8. See 6 above.
9. Operation of the sewer system will not require a water source external to the proposed treatment and disposal facility. As stated in the Draft EA Section 2.3.1, "A 25-foot-wide by 1,500-foot-long easement located along the northern edge of the parcel would be used to provide access to utilities from Maile Street to the treatment and disposal facility. The easement would contain the incoming sewer line from the collection system, potable water line..."

P. Goodwin, ERG

Figure 2.3 shows the potential location of a fire hydrant. The Draft EA Section 3.22.2 states: "The proposed wastewater treatment and disposal facility would require potable water and fire protection lines from the end of the existing DWS system to the preferred location of the headworks [and] operations building." Further: "As required by DWS, construction plans would show the estimated maximum daily water usage calculations prepared by a professional engineer licensed in the State of Hawai'i. After review of the calculations, DWS would determine if enough water is available and a water commitment could be issued."

The above information will be repeated in the Final EA.

Applicable portions of the above will be repeated or included in the Final EA.

The signed petition will be included in the Final EA. Please refer to the response to the 10/25/18 comment letter submitted by the Pele Defense Fund for additional information.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC

**Earl Matsukawa**

**From:** ngaire gilmour <ngaire@hotmail.com>  
**Sent:** Monday, December 10, 2018 5:01 PM  
**To:** Public Comment  
**Subject:** Community Comments  
**Attachments:** Large Capacity Cesspool EA 12.8.18.odt

Please find attached

HSC  
10349-01  
12/17/18  
BC BC COM  
EPA ERB

Ngaire Gilmour,  
PO Box 843,  
96-3190 Pakalana St.,  
Pahala, HI 96777  
ngaire@hotmail.com

December 10, 2018

Wilson Okamoto Corp.,  
1907 South Beretania St, Suite 400,  
Honolulu, HI 96826

Attention: Mr. Earl Matsukawa

**Subject: Draft EA: Public Comments Re: Pahala Community Large Capacity Cesspool (LCC) Replacement Project**

1. The consideration of the use of alternative energy sources (wind, solar, methane) would put the project further down the road in attempting to decrease emissions. To go into this project with the idea of "hooking up to HELCO" and relying on diesel generators for emergency is not looking to the future. Please look beyond the 'grid' for energy.
2. The suggestion was made at the meeting on 10/10/18 to look at the possibility of moving the project across the highway to site 9, using the current tunnel that runs under the highway that was installed by the sugar industry.
  - a) Members of the community have concerns about the use of the site 7 location, based on historical information.
    - Ⓢ Please speak to the elders.
3. A great concern for me is regarding 'newly accessible lots' for the near future as well as more long term.
  - a) Homes on gang cesspools (LCC) will be grandfathered onto the new sewage system, as they should be, but the County will extend the system beyond the LCC's and beyond what is required by the Federal Government at this time.
    - Ⓢ This will require 'newly accessible lots' to join the new sewage system at the lot owner's expense' now and in the future.
    - Ⓢ EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, serves to avoid the disproportionate placement of adverse environmental, economic, social, or health impacts from federal actions and policies on minority and low income.
    - Ⓢ To quote the EA "Sensitive populations, such as low-income families, minorities, and children, are present within the Pahala area. Areas within the community have sensitive populations with higher minority and low-income populations than the state averages."
  - b) The County and/or State need to find an alternate source of funding for all lots within their planned project.

I fully support a project that will benefit the environment, the community, and the County and State of Hawaii, as this will. My concern lies in the impact on historically sensitive land, with no plan for the use of alternative energy sources, and the affect on my community of shackling the residents with the cost of mandatory connection. This would not be serving anyone in the long run.

Sincerely submitted,  
Ngaire Gilmour



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ref (73)

Ms. Ngaire Gilmour  
P.O. Box 843  
96-3190 Pakalana St.  
Pāhala, Hawai'i 96777

[ngaire.joy@gmail.com](mailto:ngaire.joy@gmail.com)

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - December 10, 2018 5:01 p.m.

Dear Ms. Gilmour:

Thank you for your December 10, 2018 5:01 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

1.

As outlined in the Draft EA, Section 2.3.1, the Proposed Alternative does not include utilizing alternative energy systems such as photovoltaic solar or wind as a total replacement for connection to the HELCO grid due to:

- the need for consistent power supply;
- up front capital cost;
- insufficient space on the 14.9-acre proposed site to accommodate alternative energy systems;
- the objective to minimize the amount of land area removed from agricultural production; and
- EPA-enforced project deadlines.

Emergency backup power is required whether alternative or traditional energy systems are utilized. Partial augmentation of traditional power utilizing photovoltaic solar panel arrays on the headworks and operations building rooftops, however, is feasible and will be further analyzed during the detailed design phase after loads and demand patterns are better understood. Additional alternative energy systems can be added in the future if prioritized and funded by County Council, and the proposed electrical systems will be designed to accept or be adaptable to additional alternative energy input.

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Methane gas is generated at wastewater treatment plants using a process called anaerobic digestion. The proposed wastewater treatment plant (WWTP) is too small for anaerobic digestion to be economical. The dry weather design flow to the Pāhala WWTP is 190,000 gallons per day, and anaerobic digestion is only economically attractive for WWTPs that treat at least 5 to 10 million gallons per day. In addition, the anaerobic digestion process requires primary clarifiers as part of the liquid treatment process, but primary clarifiers tend to be odorous in tropical climates, due to the relatively high wastewater temperatures. The proposed alternative relies on natural treatment systems that require relatively low energy input. Additional detail regarding the preliminary analysis of alternative energy options can be found in the Final EA, Appendix B.

This information will be included in the Final EA

2.

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

The Draft EA Section 2.5 describes Site 9, which is south (makai) of the Preferred Alternative Site 7. As outlined in Appendix B Section 8, Site 9 earned a lower ranking than Site 7 for the following criteria: presence of and/or proximity to archaeological/cultural sites, existing vehicle access, power and potable water availability, and distance from the area of the wastewater collection system. Site 7 had a lower ranking than Site 9 in one category: topography. With the distance between the two sites less than 300 feet, they were ranked equally for the criteria of proximity of treatment units to existing occupied buildings.

The Draft EA Sections 2.5 and 2.7 provide information as to the issues related to the use of Site 9. An unnamed stream near the upper portion of the parcel could affect the selected configuration of the wastewater treatment facility and the land application groves. Potentially, to maximize energy efficiency by taking advantage of gravity flow, the headworks, lagoons and the subsurface constructed wetlands could be sited in the upper portion of the site, or the area closest to the highway. In addition, since the site is located across Māmalahoa Highway from the Pāhala community, it would require construction of piping and other utilities within the highway ROW and approval by the State of Hawai'i Department of Transportation. Site 9 would require



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additional access roads to facilitate both construction and operation of the treatment and disposal facility and a slightly longer transmission line given its increased distance from the existing LCCs.

This information will be included in the Final EA.

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3 provides the Preliminary Site Plan for the new treatment and disposal facility, which shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were present on-site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with the SHPD.

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the Final EA.

The Draft EA Section 3.15 provides information on the archaeological and cultural resources related to the Pāhala Large Capacity Cesspool Replacement project. The Draft EA Section 3.15

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Letter to Ms. Ngaire Gilmour  
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March 6, 2020

states, on March 29, 2018, consultation was initiated for the project under the National Historic Preservation Act. The Draft EA Section 10 provides a list of the consulted parties. The Final EA Section 3.15 will include that the list of Native Hawaiian Organizations (NHO) was generated by the EPA from the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization (NHO) Notification List for NHPA Section 106 and HRS Chapter 6E compliance. Letters were sent to 14 NHOs during the pre-assessment consultation. No responses were received from these organizations.

The HRS Chapter 6E determination and Section 106 review packet were submitted to SHPD with a draft archaeological inventory survey (AIS) on March 13, 2019. SHPD response is pending. The Draft EA Section 3.15.2 states that prior to finalization of this EA and initiation of the Proposed Action, the Environmental Protection Agency (EPA) and the County of Hawai'i will conclude consultation with SHPD in accordance with Section 106 of the NHPA and will incorporate additional impact avoidance and minimization measures as necessary to result in a finding of no adverse effects to historic properties.

The Final EA Section 7 will include that on September 26, 2018, a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers. The public notice was to advertise the October 10, 2018, public information meeting conducted by the County in the Pāhala at the Ka'ū Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA and process for submitting comments. The notice stated that the second part of the meeting would address Section 106 of the National Historic Preservation Act of 1966, as amended (2006), involving consultation with Native Hawaiian Organizations and the Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, and cultural religious attachment to the proposed project area. Eight persons placed their names on a sign in sheet at the October 10, 2018 public meeting to contribute during the second part of the meeting dedicated to the Section 106 consultation. No comments or information were forthcoming during the Section 106 portion of the meeting.

3. a) and b)

The Draft EA Section 2.2 describes the purpose of the Pāhala Large Capacity Cesspool Replacement project is to close the Pāhala large capacity cesspools (LCC). The County's intent, as stated in the June 22, 2017 US Environmental Protection Agency Region 9 Administrative Order on Consent is to provide an industry-standard wastewater collection system and a secondary treatment and disposal facility, a basic service to the Pāhala community, to eliminate underground injection from LCCs it operates to help protect underground drinking water sources.

The Draft EA Section 2.3.2 discusses the construction of a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that currently conveys sewage to the two LCCs. As described in Section 6.2.1, the current collection system includes facilities located in the backyards of many parcels. Where easements for the existing

collection system aren't accessible, the County must obtain permission from individual landowners to enter them, through private property, to inspect, maintain, repair or replace existing sewer facilities: all activities essential to an efficient, functioning system. As a result, the proposed new collection system would consist of a total of approximately 12,150 linear feet (LF) (2.3 miles) of corrosion-resistant polyvinyl chloride (PVC) piping located almost entirely within the right of way (ROW) of eight public streets.

The extent of the collection system is to ensure the parcels connected to the former C. Brewer system will have access to the treatment and disposal facility so the large capacity cesspools can be closed. It is conventional to extend the utility to the nearest intersection to minimize the number of manholes.

The Draft EA, Section 2.3.2, states the new collection system would be subject to the Hawai'i County Code (HCC) Chapter 21, Sewers, specifically, Article 2 (Public Sewers), Section 21-5, which states the following:

*“(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.”*

All accessible properties will be required to connect to the new wastewater collection system in accordance with Hawaii County Code, Chapter 21, Article 2, Section 21-5. However, the County entered into an agreement with C. Brewer (in April 2007) to eliminate LCCs from the existing community sewer systems and connect properties discharging to them to new County collection, treatment and disposal systems. Once the actual costs are determined, County Council action is still required to approve the expenditures.

Each adjacent lot will be provided with a lateral connection to the sewer main as required by HCC and standards. Under the Preferred Alternative, the design of the new collection system would extend between street intersections and include sewer service stub-outs (the lateral connection to the sewer main) to the lot lines of adjacent properties, including the newly accessible, to accommodate their eventual connection. Accordingly, to close the existing LCCs, there will be additional properties in Pāhala that would be required to connect to the new wastewater collection system, at their expense, after it becomes operational. Such properties are near the existing service area but are presently connected to individual wastewater systems. To conform to the stated section of HCC, the respective, newly accessible property owners would be responsible for the design, permitting and completion of sewer service connections between the County stub-outs and improvements for stated uses on their property, as well as for the proper closure of their individual wastewater systems. The Draft EA Figure 2.6 shows the area of the community serviced by the current and proposed collection systems.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA. Although not required by Hawaii Administrative Rules (HAR) Title 11, Chapter 200, DEM voluntarily convened two additional public meetings on October 9, 2018 and March 21, 2019 to gain further input from newly accessible property owners and present funding options for them to pursue.

The Draft EA Section 7 will be revised to add that the County held additional meetings in Pāhala including one to provide information on financing sources available to owners of parcels which would become accessible to the County collection system. The purpose of the March 21, 2019 meeting was to fulfill a County commitment made in October, 2018 to research financing options available to the newly accessible residents of the Pāhala Community. At the meeting, DEM provided the preliminary results of the County investigation into funding sources and options available to newly accessible property owners once the new treatment and disposal facility and wastewater collection system have been designed, permitted and constructed.

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawaii Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawaii Legislature, Senate Bill 221 SD1, which could amend Hawaii Revised Statutes (HRS) Chapter §342D to establish a low interest loan program to offer financial assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

Closure of individual cesspools is mandated by legislation at the State level. In 2017, Act 125 was enacted by the Hawai'i State legislature requiring all cesspools, not exempted by the Department of Health, be upgraded or converted to septic systems, or aerobic treatment unit systems, or connected to sewage systems by January 1, 2050. Though closure of individual wastewater systems by the County is not part of the Proposed Action, this legislation will affect all parcels in Pāhala currently utilizing cesspools for sewage disposal.

The Draft EA Section 6.2.2 discusses the Ka'ū Community Development Plan (CDP): “Section 5 of the CDP prioritizes improvements in infrastructure, facilities, and services, including Section 5.8 which applicable to ... Environmental management facilities, including expanded

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sewer lines, ...". Policy 120 is to "Extend the primary wastewater collection lines in Pāhala and Nā'ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems."

The collection system will be consistent with Policy 120 as the improvements for the Pāhala (LCC) Replacement project have been designed not to preclude accommodating the Pāhala community. Similarly, the treatment and disposal facility has been designed not to preclude accommodating the wastewater flows from the collection system from the Pāhala community.

This information will be included in the Final EA.

The Draft EA Section 3.16 provides information on the socioeconomic characteristics of the Pāhala community.

The Draft EA Section 5.7 Environmental Justice Executive Order 12898 will be revised as follows

Executive Order 12898, Environmental Justice (full title Federal Actions to Address Environmental Justice to Minority and Low Income Populations), was signed on February 11, 1994. The intent of Executive Order 12898 is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low income populations. Executive Order 12898 also requires federal agencies ensure that minority and low-income communities have adequate access to public information related to health and the environment.

The 2017 American Community Survey (ACS) (5-Year Estimates) is the most recent information related to socioeconomic conditions in the state and County. The 2017 ACS includes Hawai'i Geographic Area Profiles – Census Designated Places: Neighbor Islands. The ACS noted it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

For purposes of this assessment, and to correspond with the available ACS demographic characteristic data, "low income" is defined as having a household income of less than \$24,999; "minority" is defined as any race population other than White; and "children" is defined as the "Under 5 to 19" age category. Pāhala has more households in the "less than \$24,999" income bracket (33.7 percent) than the County as a whole (26.3 percent).

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities (92.1 percent non-White) than the County at large (66.8 percent non-White). The racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including

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Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.

Pāhala has a similar age distribution to Hawai'i County, although Pāhala has a higher proportion of individuals in the "Under 5 to 19" age category (28.5 percent) compared to the County as a whole (24.4 percent).

Based on the above, Pāhala has a higher proportion of low-income, minority, and children residents as compared to the County as a whole. However, the Proposed Action will not result in disproportionately high and adverse human health or environmental effects on these sensitive populations. The design and location of the proposed wastewater treatment and disposal facility will minimize odor and air quality impacts. Construction of the wastewater collection system will result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However, construction activities within the community will comply with provisions of HAR 11-46 (Community Noise Control). This includes obtaining a noise permit for any activities that will generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit will limit excessive noise sources to daytime hours; will require the use of best available control technology to control noise levels from excessive noise sources; and will require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, the Proposed Action is expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater treatment system.

This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

**From:** WKF <foxw001@hawaii.rr.com>  
**Sent:** Monday, December 10, 2018 5:34 PM  
**To:** Public Comment  
**Subject:** Draft Environmental Assessment for the Pāhala Large Capacity Cesspool (LCC) Replacement Project

10349-01  
12/17/18  
H.56  
EA #1  
CC RC COI 12.2018  
EPA ERG

Aloha,

I am submitting these comments in response to the draft environmental assessment published in the September 23, 2018 Environmental Notice.

According to Section 3.15, Archaeological and Cultural Resources, the existing conditions for Preferred Alternative (Site 7) mention evidence from plantation-era documents of an opening of a lava tube containing human remains which once existed in the southeastern corner of the parcel. It is my understanding that the County completed an archeological inventory survey (AIS) of the preferred location in September 2018. However, I am not sure if the survey included this southeastern corner as the footprint of the facility does not seem to extend into this portion of the parcel. The County should use its best efforts to identify the location of this burial cave. If necessary, the limits of the inventory survey should be expanded to include this southeastern corner. The objective is to locate the burial cave so that the physical and spiritual integrity of the cave and the *iwi kupuna* can be protected. By identifying the location, consultation with descendants, SHPD, and the Hawaii Island Burial Council can be completed to determine appropriate physical buffers for the facility. Furthermore, out of respect for Hawaiian cultural values, it is imperative that that the burial cave not be subject to any waste water disposal whether it is treated or untreated, intentional or unintentional. Confirmation that the burial cave is located at a higher elevation than the proposed facility may be sufficient.

I appreciate your consideration of these comments. Please feel free to contact me with any questions or concerns.

Thank you,

Keoni Fox  
48-472 Kamehameha Hwy  
Kaneohe, HI 96744  
(808) 351-6279 mobile  
[foxw001@hawaii.rr.com](mailto:foxw001@hawaii.rr.com)

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March 6, 2020

ref (74)

Mr. Keoni Fox  
48-472 Kamehameha Highway  
Kaneohe, Hawai'i 96744

**Subject:** Draft Environmental Assessment for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of, Ka'ū, Hawai'i  
Response to Comment - December 10, 2018; 5:34 p.m.

Dear Mr. Fox:

Thank you for your December 10, 2018 5:34 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Draft EA Section 3.15 references a November 2016 archaeological field inspection report that states, while the historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre parcel (which includes Site 7), as well as evidence from plantation-era documents that the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, indicate that further archaeological studies may be necessary. The Final EA will clarify that the report also stated it would be advisable to limit the development footprint to exclude the southeastern corner of the 42.5-acre parcel. This area, which is presently not used as a macadamia nut orchard, but forms part of the macadamia nut processing plant complex, is the location of a known (but sealed) lava tube opening that local informants have indicated is linked to tubes that possess traditional human burials. Further, by excluding this section of the parcel, it will be possible to avoid at least one known historic property. The Draft EA Figure 2.3, which provides the Preliminary Site Plan for the new treatment and disposal facility, shows the 14.9-acre project site has been developed to exclude the area in the southeastern corner identified as the location of the sealed lava tube opening.

Between September 18, 2018 and January 10, 2019 a team of qualified archaeologists conducted a pedestrian survey of the proposed project site and completed subsurface trenching to determine the presence of archaeological resources. The work was undertaken in accordance with the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) requirements, with the archaeological inventory survey (AIS) approach accepted by SHPD in their August 20, 2018 letter. The results of the survey and subsurface trenching showed no burials or lava tube openings were identified on-site. The AIS submitted to SHPD in March 2019 documents that a sealed lava tube opening is located east of the proposed wastewater

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treatment and disposal facility project site, outside the proposed property boundary, and outside of the area of potential effect considered in consultation with the SHPD.

The complete document is available for download from the County's website at: <http://records.co.hawaii.hi.us/webink/1/edoc/100962/Draft%20Archeological%20Inventory%20Survey%20-%20Pahala%20WWTP%20and%20Sewer%20System.pdf>

A geophysical survey of the proposed project area will be performed during detailed design with the specific intent to locate subsurface voids (such as lava tubes) present beneath the site that may impact design and construction of the new wastewater treatment, disposal and collection systems.

This information will be included in the Final EA.

The Draft EA Section 2.3.1 states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. Thus, untreated wastewater will not enter the ground beneath the WWTP. In addition, the preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane.

The Draft EA Summary shows the Hawai'i Island Burial Council was consulted as part of the Draft EA preparation process. The Draft EA Section 3.15 states, on March 29, 2018, consultation was initiated for the project under the National Historic Preservation Act. The Draft EA Section 10 provides a list of the consulted parties. The Final EA Section 3.15 include that the list of Native Hawaiian Organizations (NHO) was generated by the EPA from the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization (NHO) Notification List for HRS Chapter 6E and NHPA Section 106 compliance. Letters were sent to 14 NHOs during the pre-assessment consultation. No responses were received from these organizations.

The HRS Chapter 6E determination and Section 106 review packet were submitted to SHPD with a draft AIS on March 13, 2019. SHPD response is pending. The Draft EA Section 3.15.2, states that prior to finalization of this EA and initiation of the Proposed Action, EPA and the County of Hawai'i will conclude consultation with SHPD in accordance with Section 106 of the NHPA and will incorporate additional impact avoidance and minimization measures as necessary to result in a finding of no adverse effects to historic properties.

The Final EA Section 7 will include that on September 26, 2018, a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers. The public notice was to

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advertise the October 10, 2018 public information meeting conducted by the County in Pāhala at the Ka'ū Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA process for submitting comments. The notice stated that the second part of the meeting would address Section 106 of the National Historic Preservation Act of 1966, as amended (2006) involving consultation with Native Hawaiian Organizations and the Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, and cultural religious attachment to the proposed project area. Eight persons placed their names on a sign in sheet at the beginning of the October 10, 2018 meeting to contribute during the second part of the meeting dedicated to the Section 106 consultation. No comments or information were forthcoming during the Section 106 portion of the meeting.

The above will be repeated or included in the Final EA as applicable.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

B. Noelani Hong, Ph.D., OTR/L  
PO Box 64  
Volcano, HI 96785  
808.936.2353  
[noeloha@gmail.com](mailto:noeloha@gmail.com)

10349-01  
12/27/18  
cc: BC COH  
EPA ERG  
2018 NOV 5 PM 31  
RECEIVED  
OFFICE OF THE MAYOR  
COUNTY OF HAWAII

October 28, 2018

Mayor Harry Kim  
Hawaii County Bldg.  
25 Aupuni St.  
Hilo, HI 96720

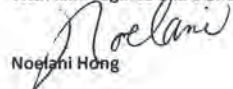
Dear Mayor Kim:

Again, and again, mahalo nui for all your untiring, unceasing work for us, the people of Hawai'i.

Since I'm not at home at the moment, I would like to request your support for reconsidering the type and location of the Pahala sewer treatment plant. With the longtime history of flooding from rain, storms, and hurricanes from the slopes of Mauna Loa down through Wood Valley, Pahala, and Ka'u, the open sewer reservoir would flood, overflowing it, the toxins (in air) and water, bacteria, and chemicals overground, over highway 11 and to all the lower lying areas and into the ocean and land conservation, preservation areas of Ka'u. Prior floods are testament to this; with the roads and bridges in that area breaking and cracking. There must be a better plan to protect the safety and health of the communities and families who live in that area. Pahala has endured so must negative impact from a variety of issues over many years, as you are well aware.

Please kokua. I sent an email to the EA consultant to that project and did not receive a response. I also contacted Dr. Josh Green, and he responded, saying that he would try to help. He is aware of this problem.

With kind regards and aloha,

  
Noelani Hong



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March 6, 2020

ref (76)

Dr. B Noelani Hong, PhD, OTR/L  
P.O. Box 64  
Volcano, Hawaii'i 96785

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment - October 28, 2018

Dear Dr. Hong:

Thank you for your October 28, 2018 comment letter regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2- percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawai'i Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the County of Hawai'i Department of Public Works confirmed that the proposed treatment and disposal project site is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

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Letter to Dr. B Noelani Hong, PhD, OTR/L

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This information will be repeated in the Final EA.

The Draft EA Section 3.23.2 states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows drain through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pahala public meetings held in December 2017 and October 2018, the State of Hawai‘i Department of Transportation (DOT) Hawai‘i District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated at that location by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flows back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed wastewater treatment and disposal facilities will not be located within the area of the culvert.

As stated in the Draft EA, the on-site stormwater management system will meet the requirements of Hawai‘i County Code (HCC), Chapter 27 **Floodplain Management**, Section 20, **Standards for subdivisions and other developments** (e) which mandates a site drainage plan to “comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the

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Letter to Dr. B Noelani Hong, PhD, OTR/L

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expected [design] storm event as shown in the department of public works “Storm Drainage Standards”.

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project site “shall not alter the general drainage pattern above or below the development”. Thus, for the HCC design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage report will be prepared during the design process to evaluate the improvements that are necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1 states the aerated lagoons will be lined with to prevent water seepage through the bottom and sides of the lagoons. The Draft EA, Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process for any berms intended to act as secondary containment. The tree groves will be designed in accordance with the EPA’s “Process Design Manual, Land Treatment of Municipal Wastewater Effluents”. Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

Treatment process options are discussed in Section 2.8.2 of the DEA. In summary, any “type” of wastewater treatment process (such as e.g., aerated lagoons, activated sludge “mechanical” treatment plants, etc.) must incorporate both peak flows from the collection system and precipitation that falls on the exposed process components into the design. The proposed aerated lagoon system is a “flow through” process, not a storage reservoir. Wastewater from the community (including peak wet weather flows) will move through the lagoon system to the disposal system and will not be stored in the lagoons. The proposed aerated lagoon system will be lined and designed to have adequate freeboard to contain the required storm event and not overflow offsite. Further:

- stormwater flows generated outside of the treatment and disposal facility will be directed around the site;
- an onsite stormwater collection and management system will contain runoff generated at the facility; and
- the proposed land application groves will be designed to completely contain both peak effluent flows and precipitation from a design storm event.

#1

Earl Matsukawa

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Letter to Dr. B Noelani Hong, PhD, OTR/L  
Page 4  
March 6, 2020

**From:** Naalehu Theatre <naalehtheatre@yahoo.com>  
**Sent:** Monday, September 24, 2018 8:57 AM woc10-18-2018  
**To:** Public Comment  
**Cc:** Sandy Shore; kaena.horowitz@hawaiicounty.gov; Bhat Simi (ENRD)  
**Subject:** Fw: FW: Records Request for Hawaii County Department of Environmental Management: Request for Consultant approved Pahala Community Outreach Plan and Naalehu Community Outreach Plan [#123]  
**Attachments:** 08-21-18 S. Demourelle Acknow-to-Requester-Rev-5.14 (1).pdf, 20180831125856647.pdf

Because the above measures would be incorporated no matter what "type" of treatment process is chosen, flooding was not a criterion specifically evaluated as part of the treatment process selection.

This information will be included in the Final EA.

The Draft EA Section 2.7 describes the site selection process, including the factors and their relative weights used to evaluate the various sites. Further, Section 2.7 describes the twenty-one criteria within four general categories (environmental, social and cultural; location and site; land use and availability; and collection system and service area) that were established and defined for the analysis. The Draft EA Appendix B, Section 8, provides additional information regarding the site selection process. As a result of this process, the County identified three sites (Sites 7, 8, and 9) as reasonable alternatives for construction of the wastewater treatment and disposal facility under the Proposed Action. The final scores for Sites 7, 8, and 9 were 4.33, 4.06, and 4.10 respectively, out of a total possible score of 5. None of the three sites were located in Special Flood Hazard Areas as designated on the FIRM map in Appendix B. Based on this analysis, Site 7 was selected as the Preferred Alternative. The site is easily accessible, has good soils for a land application system, and is close to the existing LCCs.

This information will be included in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Comment # 1

The County of Hawaii Department of Environmental Management ("COHDEM") is currently in a second violation of the HEPA (HRS 343 et seq.) and UIPA statutes [first suit is Hi. Third Cir. 18-1-00208 - Nakamura] requiring the disclosure of the August 15, 2018 requested environmental assessment record[s] as no written notice has been provided, nor the record[s] requested provided to date (September 24, 2018).

This de facto denial will require another UIPA lawsuit, apparently.

Comment #2

On May 30, 2018, the EPA transferred grant funding [XP-96942401-7] first awarded September 20, 2005 to the "design and construction of wastewater improvements in Naalehu and Pahala in the Kau district of the Big Island of Hawaii" called the "Kau Cesspool Replacement Project" to provide Federal funds "will be allocated only to the 'Construction - Wastewater Treatment and Disposal System' task in the approved Pahala Community Large Capacity Cesspools Replacement Project work plan."

You evaded Hawaii County Land Use Commission scrutiny of this Pahala project by claiming it was "only" 14.9 acres per your ERG-EPA-B&C-Wilson Okamoto (hereafter called "the Contractors") May meeting minutes, which stated LUC overview at 15 acres [the under 15 acres claim will be challenged by measurement of the actual footprint you present].

Similarly, are you trying to evade the NEPA requirement of considering the cumulative impacts of the two new-build secondary sewage treatment plants, at rapidly expanding costs in a limited County economy that is losing its property tax base to lava and hurricanes, when the two expensive plants are 11 miles apart and only serve 109 and 163 households on LCCs?

Comment #3

Because you (EPA-COHDEM-Contractors) are conspiring to avoid NEPA/HEPA statutes to consider the Environmental Species Act Sec 7 (initiated by EPA for the Pahala Project under NEPA crosscutting statutes by letter to Fish and Wildlife dated June 7, 2018) for the Naalehu Project by only producing the environmental assessments, today I am filing the Notice that I am receiving concrete injuries by this illegal act and will be filing a citizen suit in 60 days.

Comment #4



I am having to go to the Naalehu Library today to review the DEA because it will not download on my computer. Although I have requested Consulting Party status at both the County and Federal level, no document has been provided to me upon my request.

/s Sandra Demoruelle  
SANDRA DEMORUELLE

— Forwarded Message —

**From:** Shore, Sandy <Sandy.Shore@hawaiicounty.gov>  
**To:** request+65ce2upva9@foi.uipa.org <request+65ce2upva9@foi.uipa.org>; Naalehu Theatre <naalehuthatre@yahoo.com>  
**Cc:** cohdem <cohdem@hawaiicounty.gov>  
**Sent:** Friday, August 31, 2018 12:38:27 PM HST  
**Subject:** FW: Records Request for Hawaii County Department of Environmental Management: Request for Consultant approved Pāhala Community Outreach Plan and Naalehu Community Outreach Plan [#123]

Requestor Sandra Demorulle,

Pursuant to the attached Acknowledgement to Requester dated August 21, 2018 and, of which you acknowledged on August 21, 2018: Pursuant to and in accordance with section 2-71-13, Hawai'i Administrative Rules ("HAR") extenuating circumstances exists. Due to these extenuating circumstances, DEM shall send you written notice as required by section 2-71-17, HAR within a reasonable time not to exceed twenty business days following DEM received your requests (August 15, 2018 - 11:01 AM, 11:10 AM, 11:30 AM & 3:05 PM).

Furthermore and in response to your email below Clarification regarding the information that you are requesting was provided to you on July 31, 2018 (contracts c.006231 & c.007030) and on August 6, 2018 (contracts c.006265 & c.006765); whereby the General Terms and Conditions referenced and attached to the provided contracts note under Section 5, Subsection 5.5: Subcontracting or Assignment of Contract (see attached). The Director provided his consent when he signed the contracts.

Thank you.

Sandy C. Shore  
Contracts Clerk  
County of Hawai'i  
Department of Environmental Management  
345 Kekūanāo'a St., Ste 41  
Hilo, HI 96720

808-961-8421 ~ Telephone

808-961-8086 ~ Facsimile

www.hawaiizerowaste.org

Confidentiality Statement

This email message and any accompanying attachments may contain information that is confidential and subject to legal privilege. If you are not the intended recipient, do not read, use, disseminate, distribute or copy this message or attachment.

— Original Message —

From: Sandra Demoruelle (mailto:request+65ce2upva9@foi.uipa.org)

Sent: Friday, August 31, 2018 8:59 AM

To: cohdem <cohdem@hawaiicounty.gov>

Subject: Records Request for Hawaii County Department of Environmental Management: Request for Consultant approved Pāhala Community Outreach Plan and Naalehu Community Outreach Plan [#123]

Aloha,

My UIPA request "Request for Consultant approved Pāhala Community Outreach Plan and Naalehu Community Outreach Plan" (08/14/2018) was not answered in the time defined by HAR 2-71-13.

Please update me on the status of my request as soon as possible.

If you do not promptly provide these reports, I will sue you for them.

Mahalo,

This message has been scanned for viruses and dangerous content using Worry-Free Mail Security, and is believed to be clean. [Click here to report this message as spam.](#)

## ACKNOWLEDGMENT TO REQUESTER

To: Sandra Demoruelle request+ptyvgybfs9@foi.uipa.org, Sandra Demoruelle request+2drgvz845p@foi.uipa.org, Sandra Demoruelle request+v4bbgu4vds@foi.uipa.org, Sandra Demoruelle [mailto:request+w6wcvaxav2@foi.uipa.org]

FROM: COH ENVIRONMENTAL MANAGEMENT, SANDY C. SHORE, 961-8421, SANDY.SHORE@HAWAIICOUNTY.GOV  
(Agency and name & telephone number of contact person at agency)

DATE REQUEST RECEIVED: August 15, 2018 – 11:01 am, 11:10 am, 11:30 am & 3:05 pm

DATE OF ACKNOWLEDGEMENT: AUGUST 21, 2018

GOVERNMENT RECORDS YOU REQUESTED: (attach copy of request or provide brief description below)

1. See attached
- 2.
- 3.
- 4.

This acknowledgment is provided in accordance with section 2-71-13, Hawaii Administrative Rules ("HAR"), because the following extenuating circumstance(s) exist:

- Agency must consult with another person to determine whether the record is exempt from disclosure under chapter 92F, HRS.
- Request requires extensive agency efforts to search, review, or segregate the records, or otherwise prepare the records for inspection or copying.
- Agency requires additional time to respond to the request in order to avoid an unreasonable interference with its other statutory duties and functions.
- A natural disaster or other situation beyond the agency's control prevents the agency from sending a notice or responding to the request within ten business days.

Due to these extenuating circumstances, the agency will send you the written notice required by section 2-71-14, HAR, within a reasonable time not to exceed twenty business days following the date when the agency received your request. Among other things, this notice will inform you whether the agency intends (1) to disclose the record; (2) to deny access to all or part of the information in the requested record, identifying the portions that will not be disclosed and justifying the nondisclosure; or (3) that the agency is unable to disclose the record for the reasons given. The notice will also include the agency's good faith estimate of all fees that will be charged to the requester under section 2-71-19, HAR and the amount of prepayment required by the agency, if any.

If the agency is providing access to records, the agency will then:

- (1) Disclose the requested records within five business days after providing notice or, when applicable, after receiving a prepayment as provided for under section 2-71-19, HAR;
- or
- (2) Disclose the requested records in increments because the requested records are voluminous. See HAR § 2-71-15. Each increment will be disclosed within twenty business days after either (A) the prior incremental disclosure (if one prepayment of fees is required and received) or (B) receipt of each

OIP3 (rev. 5/8/2014)

incremental prepayment required.

For questions about this acknowledgment, please contact the person named above. Questions regarding compliance with the UIPA may be directed to the Office of Information Practices at 808-586-1400 or oip@hawaii.gov.

OIP3 (rev. 5/8/2014)

5.4 **MEDIATION:** At the option of, and in the sole discretion of the Director, any dispute, controversy or claim arising out of or in connection with the interpretation or performance of any term or condition of this Agreement or any breach or alleged breach of this Agreement, shall be submitted to and resolved by non-binding mediation by a neutral and independent mediator, who shall be selected by the parties by mutual agreement, or if the parties are unable to agree upon the selection of a mediator, then in accordance with the commercial arbitration rules of the American Arbitration Association. The mediation shall take place in the County of Hawaii, State of Hawaii. The cost of the mediator and other mediation costs shall be borne equally by the parties. The mediation process and the outcome of the mediation shall remain confidential to the maximum extent permissible by law. Notwithstanding the foregoing terms, the parties shall make every reasonable effort to resolve disputes, controversies or claims between themselves in a cooperative fashion prior to submitting a dispute to mediation.

5.5 **SUBCONTRACTING OR ASSIGNMENT OF CONTRACT:** The CONSULTANT shall not subcontract or assign all or any part of the services under the contract without the prior written consent of the DIRECTOR. Any consent by the COUNTY to subcontract, assign or otherwise dispose of any portion of the contract shall not be construed to relieve the CONSULTANT of any responsibility for the performance of the contract.

5.6 **STANDARDS:** All work related to wastewater projects shall be performed in conformance with the Design Standards of the Department of Wastewater Management, City and County of Honolulu. Where there are no established Standards, the CONSULTANT shall submit the proposed Standard(s) for approval.

5.7 **OWNERSHIP OF DOCUMENTS:** Upon completion, the CONSULTANT agrees to relinquish and furnish to the COUNTY all original tracings of any and all plans and stencils which hereafter shall become the property of the COUNTY.

#### **SECTION 6 - SERVICES TO BE PERFORMED BY THE COUNTY**

6.1 **COOPERATION BY THE COUNTY:** The COUNTY shall, without cost to the CONSULTANT, through the DIRECTOR, cooperate fully with the CONSULTANT and will promptly place at the disposal of the CONSULTANT all available pertinent information which the COUNTY may have in its possession. The County will certify to the accuracy of certain information in writing whenever it is possible to do so. The COUNTY does not represent that other information not certified as accurate is so and takes no responsibility therefore, and the CONSULTANT shall rely on such information at his own risk.

#### **SECTION 7 - COMPENSATION**

7.1 **COMPENSATION:** The CONSULTANT shall be paid the amount stated in the written agreement, less any reduction in compensation and plus any increase in compensation pursuant to subsection 7.4 as full compensation for the performance of the services under the contract.

7.2 **ABANDONMENT OF THE PROJECT; DEATH OR DISABILITY OF CONSULTANT:** In the event the COUNTY terminates the contract because it wishes to abandon, defer, restudy or revise the project, or in the event the CONSULTANT, in the case of an individual, dies or becomes physically or mentally disabled, the CONSULTANT or his estate shall be compensated in the same proportion of the compensation under the contract as the services performed bear to the services to be performed under the contract.

7.3 **PROGRESS PAYMENTS:** Prior to any progress payment authorization, the CONSULTANT shall submit and the COUNTY shall approve a detailed schedule of values corresponding to the specific services to be performed. As long as the services of the CONSULTANT are being performed in a manner satisfactory to the COUNTY, the COUNTY shall pay the CONSULTANT monthly partial payments in amounts proportionate to the value of the services performed by the CONSULTANT as indicated in the schedule of values.

7.4 **REDUCTION OR INCREASE IN COMPENSATION:** The compensation of the CONSULTANT shall be reduced whenever modification of the contract pursuant to subsection 4.1 reduces the services to be performed by the CONSULTANT.

The compensation of the CONSULTANT shall be increased to reimburse him for increased costs to perform the services under contract if performance of the services was delayed for more than six months by an act or omission of the COUNTY. No such reimbursement, however, shall be made unless he files a written application therefore with the DIRECTOR within thirty (30) calendar days after termination of the delay. In addition, the compensation of the CONSULTANT shall be increased whenever modification of the contract pursuant to subsection 4.1 requires the CONSULTANT to perform services not required under the contract. For each such modification and each modification reducing the services to be performed by the CONSULTANT, the compensation of the



10349-01  
March 6, 2020

ref (1)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Kaʻu, Hawaiʻi  
Response to Comment – September 24, 2018 8:57 a.m.

Dear Ms. Demoruelle:

Thank you for your September 24, 2018 8:57 a.m. comment message regarding the County of Hawaiʻi Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

- #1. This is not a comment pertinent to the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.
- #2. The proposed Pāhala wastewater treatment plant (WWTP) 14.9-acre project site has been developed to provide the necessary land area for the facilities needed to treat the incoming flows and to dispose the treated effluent from the treatment processes. The proposed project site minimizes the use of the adjacent lands which contain a commercial macadamia orchard. A larger project site is not required. The special permit requirement applies to the proposed WWTP parcel only, not to the proposed utility easement. The County will apply for the required special permit through the Planning Commission.

Chapter 4 of the Draft EA discusses cumulative impacts, including the scope of the analysis.

- #3 The June 7, 2018 letter is a designation letter from the US Environmental Protection (EPA) to the US Fish and Wildlife Services (FWS) to meet the requirements of 50 C.F.R. §402.28 for the Pāhala project. As stated in Section 3.12.2 of the Draft EA, prior to finalization of the EA, the EPA and County of Hawaiʻi will conclude consultation with the FWS. The Final EA will include the final consultation letter from FWS.
- #4 On, November 7, 2018, the eleven copies of the Draft EA were hand delivered by the County of Hawaiʻi to the Pāhala Public Library and a similar number of copies to the Naalehu Public Library. The County of Hawaiʻi transmittal requested the library make the copies available for checkout. This information will be included Final EA, Section 7.

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

#2

**From:** Naalehu Theatre <naalehuthatre@yahoo.com> woc 10-18-2018  
**Sent:** Monday, September 24, 2018 10:26 AM  
**To:** Earl Matsukawa; Public Comment; clekven@brwnald.com  
**Cc:** Kate Rao; TESSA BERMAN; David Albright; dora.beck@hawaiicounty.gov; kaena.horowitz@hawaiicounty.gov  
**Subject:** Attached: Sandra Demoruelle Comment #5 PAHALA DEA/AFNSI and hard time opening on my computer so please send my Pahala DEA copy!  
**Attachments:** PAHALA DEA\_Comment\_5\_EIS\_REQUIRED.docx; Daniel\_April\_12\_2018\_IMG\_20180412\_180142.jpg

Aloha Wilson Okamoto and Friends,

I hope the DEA is at the libraries because I will be upset if not, since I am eagerly awaiting the explanation of how this is not in violation of so very many laws.

Sincerely, Sandra Demoruelle, PO Box 588, Naalehu HI 96772

----- Forwarded Message -----

**From:** Naalehu Theatre <naalehuthatre@yahoo.com>  
**To:** HI Office of Environmental Quality Control <HIOfficeofEnvironmentalQ@doh.hawaii.gov>  
**Sent:** Monday, September 24, 2018 10:18:25 AM HST  
**Subject:** Re: RE: The September 23, 2018 Issue of The Environmental Notice is available (with corrected link in photo) PAHALA DEA/AFNSI

Its my computer. I am an analog person anyway, so will go to the Naalehu Library shortly to review it in print hard copy.

Thanks for your assistance with my problem! Sandra Demoruelle

On Monday, September 24, 2018 09:59:05 AM HST, HI Office of Environmental Quality Control <HIOfficeofEnvironmentalQ@doh.hawaii.gov> wrote:

Sorry to hear of your difficulties with downloading the Draft EA file. It's not particularly large (~54MB), and downloads quickly onto our computers from where it is located on the server.

Perhaps this direct link will download easier to your computer

[http://oeqc2.doh.hawaii.gov/EA\\_EIS\\_Library/2018-09-23-HA-DEA-Pahala-Community-Large-Capacity-Cesspool-Replacement.pdf](http://oeqc2.doh.hawaii.gov/EA_EIS_Library/2018-09-23-HA-DEA-Pahala-Community-Large-Capacity-Cesspool-Replacement.pdf)

Sincerely,

Tom Eisen, Planner

17

Office of Environmental Quality Control

State of Hawai'i

(808) 586-4185

NOTE: OEQC's primary role is to facilitate Hawai'i's environmental review process by providing relevant advice to agencies, applicants, consultants and the public. OEQC is not authorized to make determinations on Environmental Assessments, Environmental Impact Statements or exemptions. Pursuant to Chapter 343, Hawai'i Revised Statutes, all such determinations are made by appropriate State or county agencies, county Mayors or the Governor.

---

**From:** Naalehu Theatre <naalehuthatre@yahoo.com>  
**Sent:** Monday, September 24, 2018 9:38 AM  
**To:** HI Office of Environmental Quality Control <HIOfficeofEnvironmentalQ@doh.hawaii.gov>  
**Subject:** Re: The September 23, 2018 Issue of The Environmental Notice is available (with corrected link in photo) PAHALA DEA/AFNSI

Aloha,

I am having trouble - even after waiting half an hour - downloading the EPA/COH Pahala DEA/AFNSI.

Is it me or is it just such a large file that it takes longer than that to download?

I have not had any trouble downloading another bulky archived FEA/FONSI for this self-same project dated August 23, 2007, which, oddly, has been neither Supplemented nor Withdrawn.

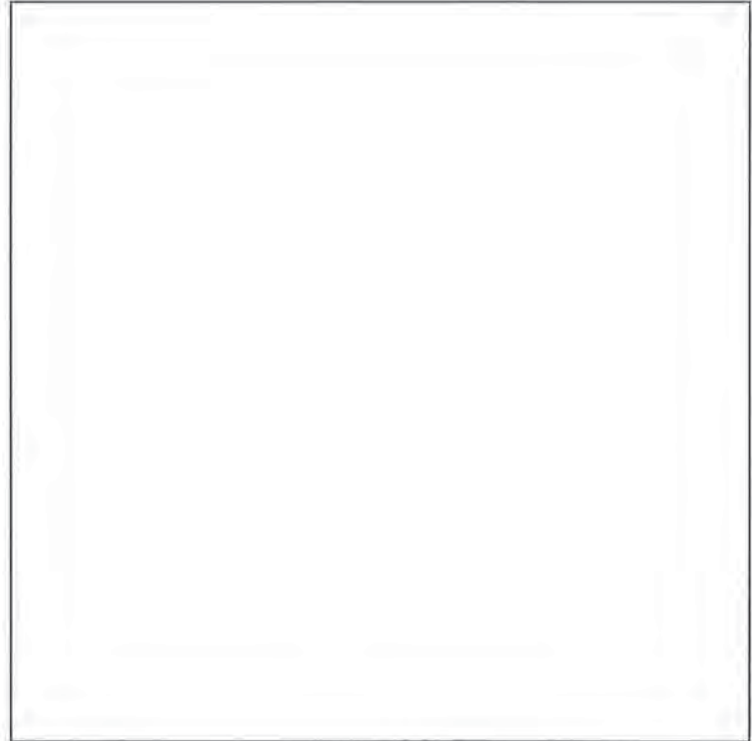
Thank you for your help. Sincerely, Sandra Demoruelle

On Sunday, September 23, 2018 10:29:12 AM HST, State Office of Environmental Quality Control <oeqchawaii@doh.hawaii.gov> wrote:

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*Aloha,*

The September 23, 2018 issue of *The Environmental Notice* is now available online for your review. This email includes the correct link from the photo to the current issue of *The Environmental Notice*.



Regards,

Office of Environmental Quality Control  
(808) 586-4185  
<http://health.hawaii.gov/oeqc/>



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Thank you for subscribing to The Environmental Notice.

Our mailing address is:

Office of Environmental Quality Control

235 S. Beretania St., Suite 702

Honolulu, HI 96813

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#### PAHALA DEA/AFNSI SANDRA DEMORUELLE COMMENT #5

New build wastewater treatment plants ("WWTPs") in the State of Hawaii are not approved at the Environmental Assessment ("EA") level, so the fact that this is published as a DEA/AFNSI for a full-sized, new build construction of a four lagoon secondary sewage treatment facility to close 109 households' LCCs on 15 acres of land, with a twin facility to be built 11 miles away, and in violation of NEPA/crosscutting environmental review requirements of the cumulative impacts, means I will be forced to sue if the COH/EPA fails to decide to do the EISs for the cumulative impacts of the twin projects, as was done on the following WWTP projects in Hawaii:

HAWAII WWTPs HEPA EIS:

1996 Waialua-Haleiwa WWTP

1998 Waimanalo WWTP

2009 Koloa-Poipu WWTP

2010 Waiale Water Treatment Facility

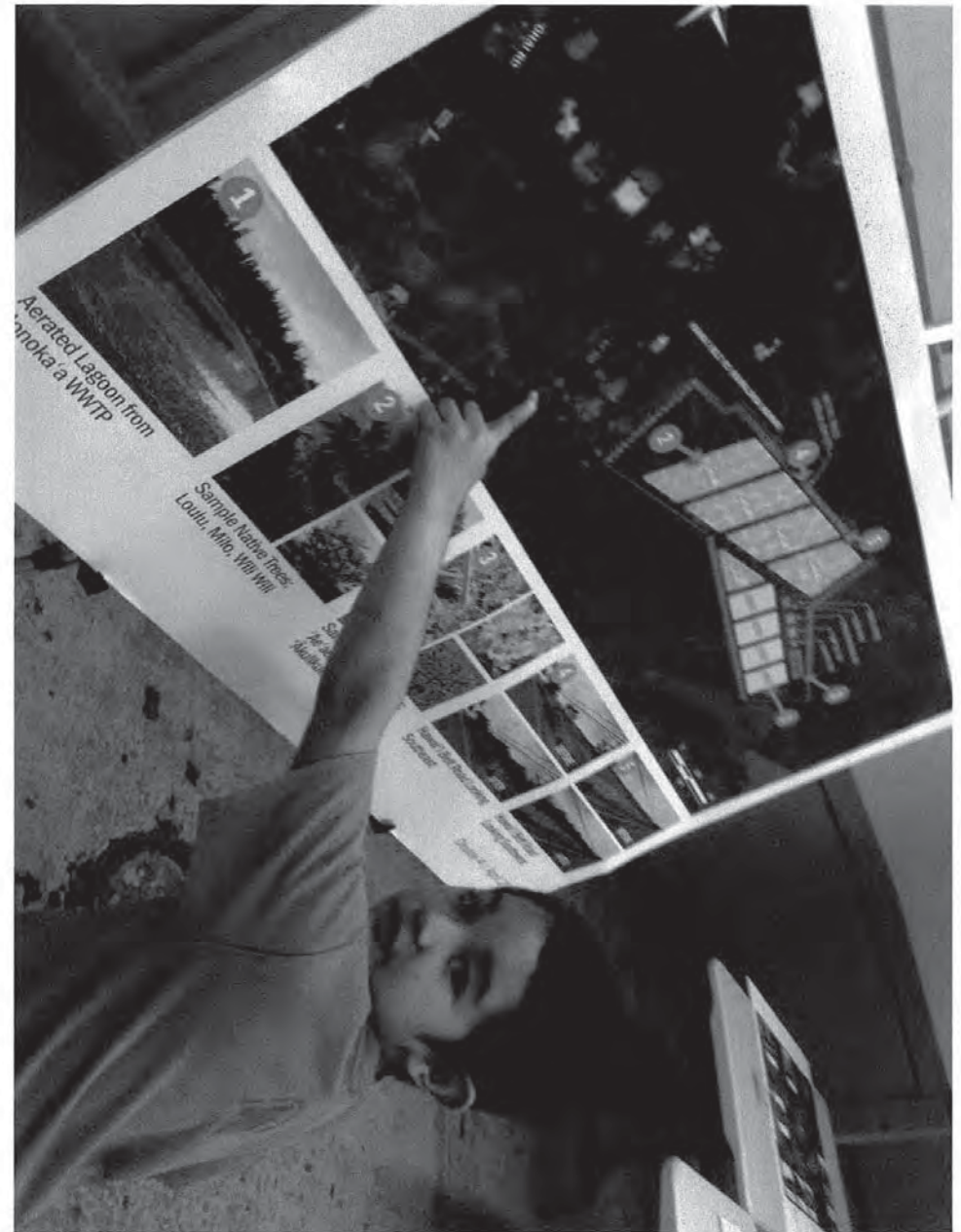
2011 Kaneohe-Kailua Treatment Facility

2017 Honouliuli WWTP Secondary Treatment

3/23/2017 Kealahou WWTP R1

The FEA/FONSI 4/8/2015 Lono Kona Sewer Improvement District (DEA/AFNSI 1/8/2015) was because, like the original Naalehu/Pahala LCC conversion projects, no installation of a new-build secondary sewage treatment plant was required. The same was true for the FEA 8/18/2009 of the Honokaa Modification of **Existing WWTP**.

In fact, the COH/EPA/Contractors should fully explain why two new-build secondary sewage plants 11 miles apart in remote, rural Kau would not require a EISPN Act 172-12 (Direct to EIS) Notice instead of a DEA/AFNSI that is avoiding the cumulative impacts of the twin projects.







10349-01  
March 6, 2020

ref (2)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 24, 2018 10:26 a.m.

Dear Ms. Demoruelle:

Thank you for your September 24, 2018 10:26 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

On, November 7, 2018, the County of Hawai'i hand delivered eleven copies of the Draft EA to the Pāhala Public Library and a similar number of copies to the Naalehu Public Library. The County of Hawai'i transmittal requested the library make the copies available for checkout. This information will be included in the Final EA Section 7.

Hawaii Revised Statutes (HRS) Chapter 343 Section 5 (a)(9)(A), states as follows: "(a) Except as otherwise provided, an environmental assessment (emphasis added) shall be required for actions that: ... (9) Propose any: (A) Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent...". HAR Title 11, Chapter 200, which implements HRS Chapter 343, however, differentiates between "agency actions" that utilize state or county lands or funds and "applicant actions" for which an applicant must seek agency approval. Since the proposed action will utilize county lands and funds, it is an "agency action" requiring compliance with HRS Chapter 343 and HAR Title 11, Chapter 200, pursuant to which an environmental assessment is being prepared and processed.

Comment #5 - HRS 343-5 **Applicability and requirements** states under (c) (4) "A(n) environmental impact) statement shall be required if the agency finds that the proposed action may have a significant effect on the environment..." The criteria by which the proposing agency makes the significance determination is provided in Hawaii Administrative Rules (HAR) Title 11 Section 200-12 (a) and (b) which states: "(a) In considering the significance of potential environmental effects, agencies shall consider the sum of the effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action. (b) In determining whether an action may have a significant effect on the environment, the agency shall

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

consider every phase of a proposed action, the expected consequences... and the...effects of the action."

HAR Title 11-200-10 **Contents of an environmental assessment** includes "(9) Findings and reasons supporting the agency determination or anticipated determination...". The Draft EA provides this in Chapter 8 Findings and Determination. Neither HRS Chapter 343 nor HAR Title 11, Chapter 200 contain any requirement that all proposed wastewater systems require an EIS.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#3

Earl Matsukawa

**From:** Naalehu Theatre <naalehtheatre@yahoo.com> woc 10-18-2018  
**Sent:** Monday, September 24, 2018 11:15 AM  
**To:** David Albright; R9FOIA  
**Cc:** Earl Matsukawa; Public Comment  
**Subject:** Wrong address

Aloha,

Today I received the Notice for the Pāhala DEA, which had been delayed because it had the wrong address.

It was addressed to me at PO Box 558, and my PO Box is 588.

To prevent future delays which cause me to complain bitterly, please ensure EPA uses my correct address for mailed correspondence.

Thank you, Sandra Demoruelle

--  
This message has been scanned for viruses and dangerous content using **Worry-Free Mail Security**, and is believed to be clean. [Click here to report this message as spam.](#)



10349-01  
March 6, 2020

ref (3)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 24, 2018 11:15 a.m.

Dear Ms. Demoruelle:

Thank you for your September 24, 2018 11:15 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Comment #1 - This is not a comment pertinent to the content requirements of the Draft (EA) for the Pāhala Large Capacity Cesspool Replacement project.

Your mailing address will be corrected.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc 10-18-2018  
**Sent:** Monday, September 24, 2018 1:21 PM  
**To:** Kate Rao, Bhat Simi (ENRD); TESSA BERMAN; Public Comment; Earl Matsukawa; David Albright; clekven@brwncaid.com; eplan1@aol.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com  
**Cc:** kaena.horowitz@hawaiicounty.gov; dora.beck@hawaiicounty.gov  
**Subject:** NOTICE OF CITIZEN SUIT FOR VIOLATION OF ESA (Notice attached)  
**Attachments:** Zinke\_ESA\_SUIT\_NOTICE\_9\_24\_2018.docx; NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT.docx; Daniel\_April\_12\_2018\_JMG\_20180412\_180142.jpg; Consulting\_party\_EPA\_2018.docx

This was sent out today.

Best, Sandra Demoruelle

--  
This message has been scanned for viruses and dangerous content using Worry-Free Mail Security, and is believed to be clean. [Click here to report this message as spam.](#)

SANDRA L. DEMORUELLE  
Post Office Box 588  
Naalehu, Hawaii 96772  
Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

September 24, 2018

The Honorable Ryan Zinke  
Secretary, Department of Interior  
1849 C Street NW  
Washington DC 20240  
Fax: 703/358-1930

RE: NOTICE OF IMPENDING CITIZEN SUIT UNDER ESA 16 USC 1540(g)(1)(A) and (2)(A)(i)

Dear Secretary,

Attached is my Notice of impending citizen suit. Thank you for your attention to my grave concerns which are causing me concrete injuries.

Sincerely,

/s Sandra Demoruelle  
SANDRA DEMORUELLE

**NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT,  
16 U.S.C. 1540 (g)(1)(A) and (2)(A)(i)**

**PERSON GIVING NOTICE:**

Sandra Demoruelle,

Physical address: 94-1513 Kaalualu Road, Naalehu HI 96772

Mailing address: PO Box 588, Naalehu HI 96772-0588

Telephone: 1-808-929-9244

Email: [naalehuthatre@yahoo.com](mailto:naalehuthatre@yahoo.com)

**NOTICE:**

**Location:** Naalehu and Pahala, District of Kau, County of Hawaii, State of Hawaii, U.S.A.

**Date of commencement** of ongoing ESA Sec. 7 consultation violation:

Date: **September 20, 2005** per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-0 for project period 06/01/2005 – 12/31/2007.

COH Project Manager: Dora Beck

**EPA Project Officer: Laura Bose (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 5, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

*The recipient [County of Hawaii] agrees not to bill or request reimbursement from EPA for any costs associated with the design or construction of the project [Kau Cesspool Replacement Project for Naalehu and Pahala in Kau] funded by this grant ... until EPA has complied with the National Environmental Policy Act and other environmental cross-cutters (see 40 CFR 6.300 et seq) applicable to this project. (Id. Section P1.)*

Current Date: 05/30/2018 per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-7 for project period 06/01/2005 – 10/30/2020.

COH Project Manager: Dora Beck

**EPA Project Officer: Kate Rao (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 7, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

**Dates of violation: Ongoing during period of Grant Condition P1. from date of award 09/20/2005 through current Grant Period commencing 05/30/2018**

**EPA DISCRETIONARY ACTION IN VIOLATION OF ESA:**

1) EPA FAILED TO TAKE EARLY HARD LOOK AT THE KAU PROJECTS AS REQUIRED BY NEPA AND CONSEQUENTLY FAILED TO COMPLY WITH ESA

In the original EPA-COH Grant Agreement Section P1 dated Sept. 20, 2005 (XP-96942401-0), EPA was first required to comply with NEPA "and other environmental cross-cutters" – including the ESA. Seven Grant Agreement revisions have resulted in splitting the original Naalehu and Pahala Projects, both requiring the EPA NEPA/cross-cutters ESA environmental review procedures, into two separate EPA WWTP Work Plans, only one of which will require ESA Section 7 consultation process. In the response to EPA from FWS, the need for a Naalehu ESA process, like what was occurring for Pahala, was expressed.

NEPA requires Federal agencies, including the EPA, to prepare a "detailed statement" prior to approving any "major federal action significantly affecting the quality of the human environment. 42 CFR 4332(2)(c). "The requirement to prepare an environmental impact statement creates a democratic decisionmaking process that assures that agency decisionmakers and the public review and carefully consider detailed information about environmental impacts before any decision is made. Agencies must "[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment." 40 CFR 1500.2(d) as cited in *Dine CARE v. BIA, Complaint*, Case3:16 cv-08077-SPL Doc. 1 Page 19.

2) EPA HAS SEPARATED THE KAU LCC CLOSURE GRANT XP-96942401[As Amended 0 through 7] INTO TWO SEPARATE PROJECTS AND REFUSED TO FOLLOW NEPA/ESA PROCEDURES THAT EPA FOLLOWED FOR THE PAHALA PROJECT DEA AS FOR THE NAALEHU WWTP WORK PLAN

No NEPA environmental review procedures have been followed since the original project – the LCC conversion to septic for all of the illegal Kau LCCs – provided Notice of the FEA/FONSI in August 23, 2007 issue of *TEN*. The original 2007 FEA/FONSI for both the Pahala and Naalehu LCC closures has never had a Supplemental Notice published to account for the obvious changes to the original Kau Cesspool Project.

Further since this Naalehu/Pahala 2007 FEA/FONSI never been Supplemented or Withdrawn as Noticed in *TEN*, it is inappropriate to publish the *TEN* Pahala DEA/AFNSI Notice on September 23, 2018 as part of the NEPA/HEPA requisite procedural review.

“To make an informed decision about how or whether to proceed with the proposed projects and to comply with NEPA, an agency must identify their potential combined environmental impacts and make that information available to the public.” *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

Therefore, I contend herein that the COHDEM proposed Naalehu WWS EA and the proposed Pahala WWS EIS/EID are legally inadequate because, being two separate studies and documents prepared at different points in time, fail to consider the aggregated and cumulative effects of the connected actions of the proposed wastewater sewage treatment projects on the human environment in the isolated and sparsely populated District of Ka’u.

CEQ regulations implementing NEPA “require that an agency consider ‘connected actions’ and ‘cumulative actions’ within a single EA or EIS.” *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1118 (9<sup>th</sup> Cir. 2000) (emphasis added) (citing 40 CFR 1508.25). Further, under 1508.25, two or more agency actions must be discussed in the same impact statement when they are “connected” or “cumulative” action. 40 CFR 1508.25(a)(1),(2) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

A cumulative impact is defined in NEPA’s implementing regulations as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions .... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 CFR 1508.7.

For “connected” and “cumulative” actions, the agency is told it “should” analyze them in a single impact statement, which the 9<sup>th</sup> Circuit interpreted as a mandatory requirement. See *Eagle Island Institute v. USFS*, 351 F.3d 1291 (9<sup>th</sup> Cir. 2003) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

3) EPA HAS PUBLISHED NOTICE OF AVAILABILITY OF THE PAHALA DEA PUBLIC COMMENT PERIOD WITHOUT CONSIDERING THE CUMULATIVE EFFECTS OF THE AOC TWIN WWTP WORK PLANS WHICH SPECIFY BUILDING TWO SECONDARY SEWAGE TREATMENT PLANTS JUST 11 MILES APART IN REMOTE, RURAL KAU BEFORE APRIL 17, 2022

Despite Kate Rao approving EPA SAAP funding for the original Ka’u LCC to LCSS conversion projects, she has permitted the Naalehu Work Plan to be implemented in violation of NEPA, and failed to enact ESA Section 7 consultation with FWS, as she did with Pahala, designating ERG to do this ESA in the June 7, 2018 letter. By allowing avoidance of consideration of cumulative impacts and avoiding NEPA and ESA statutes, Ms. Rao has allowed the separation of the two Ka’u new-build WWTPs with no aggregation of impacts on the numerous affected endangered plants and wildlife and apparently intentionally avoiding any NEPA cumulative impact analysis. (“[T]he district court properly determined that the Forest Service violated the ESA when it decided not to reinstate consultation after the FWS revised its critical habitat designation...” *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015)).

In *Cottonwood*, the Forest Service contended that “[t]he EA or EIS on each action ... will document the cumulative impacts of that action and all previous actions.” The Court believed “that consideration of cumulative impacts after the road has already been approved is insufficient to fulfill the mandate of NEPA. A central purpose of the EIS is to force the consideration of environmental impacts in the decisionmaking process. See, e.g., *Columbia Basin Land Protection Ass’n v. Schlesinger*, 643 F.2d 585 (9<sup>th</sup> Cir. 1981); *City of Davis v. Coleman*, 521 F.2d 661 (9<sup>th</sup> Cir. 1975); *Lathan v. Brinegar*, 506 F.2d 677,693 (9<sup>th</sup> Cir. 1974) (*en banc*);

*Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109, 1113-1114 (D.C.Cir. 1971). That purpose requires that the NEPA process be integrated with agency planning 'at the earliest possible time,' 40 C.F.R. 1501.2, and the purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step is already taken." *Thomas v. Peterson*, 753 F.2d 754, 760 (9<sup>th</sup> Cir. 1985).

Because the EPA has taken specific steps to change the EPA-COH Grant Assistance Amendments for XP-96942401, as demonstrated by the May 30, 2018 amendment #7, which result in effectively evading the same NEPA/ESA procedures on the Naalehu WWTP Project by simply moving the EPA statutory obligations 11 miles away to the twin Pahala WWTP Project, I hereby give Notice of a pending citizen suit under the ESA.

Herein I object to the EPA failure to implement the ESA Sec. 7 consultation for Naalehu as Kate Rao did for Pahala and request that before there is any decisions on either Project, that the EPA-COH be required to provide the same ESA Section 7 consultation and issuance of a Biological Opinion covering the cumulative actions that will "jeopardize the continued existence" of multiple Hawaiian endangered creatures and plants for both the Pahala and the Naalehu WWTP Projects.

I declare under penalty of perjury that the forgoing is true and correct.

Dated: September 24, 2018 at Naalehu, Hawaii

s/Sandra Demoruelle  
SANDRA DEMORUELLE



SANDRA L. DEMORUELLE  
94-1513 Kaalualu Road  
Post Office Box 588  
Naalehu, Hawaii 96772  
Email: naalehuthatre@yahoo.com

September 21, 2018

Kate Rao  
EPA Project Officer  
75 Hawthorne Street, WTR-3-2  
San Francisco, CA 94105

Dora Beck  
Project Manager  
Wastewater Division Chief  
County of Hawaii Department of Environmental Management  
25 Aupuni Street  
Hilo, Hawaii 96720

Re: Request for Consulting Party Status  
Kau District Cesspool Replacement Project  
Assistance ID Number (now FAIN): XP 96942401-7

Dear Ms. Rao

I am a homeowner and 38 year resident of Naalehu in the historic district of Ka'u. I raised two children here who graduated from Naalehu Elementary School (NES) and, currently, my 7 year old great-grandson attends first grade there. I serve as the Parent Representative on the NES School Community Council.

The Naalehu Elementary School is listed on the National Register of Historic Places so I have an active interest in the Naalehu Work Plan receiving NHPA Section 106 consultation, as is being done for the Pahala Work Plan.

Therefore, under 36 CFR 800.2(c)(5), I request Consulting Party Status for the Kau District Cesspool Replacement Project, EPA Assistance ID Number (now FAIN) XP 96942401-7.

The EPA and County are making an irrevocable commitment of resources to place two full-sized, new-build secondary wastewater treatment plants to service about 300 homes in remote, rural Ka'u. This is a commitment of resources our community holds sacred – as Nohea Kaawa testified, her family says that “sacred is anything that cannot be replaced.” (*County Council* testimony on Res. 650-18).

To demonstrate my interest in this EPA undertaking, I would point to my attentive participation through testimony to relevant County authorities:

**County of Hawaii Council**

May 9, 2018 REGARDING BILL142: LONO KONA SEWAGE PROJECT BONDS (3 Pages).

May 22, 2018 [Special Budget Hearing] REGARDING BULL 111: NAALEHU AND PAHALA WASTEWATER SYSTEMS COHDEM CIP 2018-19 BUDGET PRIORITIES #2 AND #3 TOTALLING \$41,051,000.

June 6, 2018 [Special Budget Hearing] REGARDING BULL 111: NAALEHU AND PAHALA WASTEWATER SYSTEMS COHDEM CIP 2018-19 BUDGET PRIORITIES #2 AND #3 TOTALLING \$41,051,000.

**County of Hawaii Council Finance Committee**

August 7, 2018 [REGARDING FAILURE TO PLACE KA'U COMMUNITY REQUEST FOR AUDIT OF LCC CLOSURE PROJECTS FROM NOVEMBER 5, 2004 TO PRESENT].

August 21, 2018 REGARDING RES. 654-18: GRANT FOR FORMER NAALEHU SEWAGE TREATMENT SITE.

**County of Hawaii Environmental Management Commission**

April 25, 2018 “Lots of Pork, Little Sewage at the Two Ka'u Sewage Plants” (2 Pages).

May 23, 2018 Provided Commissioners with copies of 1) the Naalehu WWTP CWSRF Funding Form showing 33 points making it Priority #1; 2) the DEM CIP Budget changes 2005 to 2019; 3) AOC, Naalehu Work Plan Attachment B, and EPA Reponse to community comments; 4) Demoruelle v. EPA et al., CV 18-00172 JMS-RSC Complaint; 5) *Ka'u Calendar* dated May 2018 article; 6) County records demonstrating Souza family ownership of Naalehu property since 1968.

June 27, 2018 Complaining of the lack of environmental review and the Naalehu EA is still Step #8 – to be done AFTER the COHDEM has decided on the treatment plant site, and the COHDEM has not been transparent and has withheld requests for the two Ka'u DEAs, PERs and ESA Phase I.

July 27, 2018 RE: ITEM (1) DIRECTOR'S INFORMATIONAL UPDATE – *Status of the proposed Naalehu WWTP* (Provided Commissioners with copies of the COHDEM Extension Compliance Request letter dated June 14, 2018 to EPA; article about Ka'u Royal Hawaiian Coffee and Tea LP and its land manager, John Cross.

July 27, 2018 RE: ITEM 5.A. Policy on commenting on environmental review.

Therefore, I am formally requesting "consulting party" status under NEPA, HEPA, and all cross-cutting statutes including ESA and NHPA, and to be consulted and informed of all EPA and COH historic property identification and determination of effect for the Naalehu Work Plan project, and for the remaining environmental review actions and decisions on mitigation measures for the Pahala Work Plan project.

Sincerely,

/s Sandra Demoruelle  
SANDRA DEMORUELLE

Cc: Wilson Okamoto, Brown and Caldwell



10349-01  
March 6, 2020

ref (4)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 24, 2018 1:21 p.m.

Dear Ms. Demoruelle:

Thank you for your September 24, 2018 1:21 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Chang  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin ERG



Earl Matsukawa

#5

**From:** Naalehu Theatre <naalehuthatre@yahoo.com> woc 10-18-2018  
**Sent:** Tuesday, September 25, 2018 8:32 AM  
**To:** Public Comment; Earl Matsukawa  
**Cc:** Kate Rao; Dora Beck; clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com  
**Subject:** Sandra Demoruelle Comment #6 attached - Facility too large for actual effluent flow  
**Attachments:** PAHALA DEA\_Comment\_6\_EH\_Quote\_too\_large\_plant.docx

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#### PAHALA DEA/AFNSI SANDRA DEMORUELLE COMMENT #6

**COMMENT #6 – The Pahala WWTP is built to handle 380,000 gal/day while actual flow reported for a larger population base in 2007 FEA was 80,000 g/d so the facility design is too large.**

To paraphrase Pat Tummons in her *Environment Hawaii* environmental newsletter (Vol. 1, No. 5 Nov. 1990): **(EH quoted material in bold type)**

#### **Lots of Pork, Little Sewage** at the Two Ka'u Sewage Plants

**“Serious problems exist”** according to the results of “talk-story” meetings held by County of Hawaii Department of Environmental Management contractor Brown and Caldwell. B&C held meetings April 10<sup>th</sup>– 12<sup>th</sup> in Naalehu as Task 3.2 of the *Naalehu Community Large Capacity Cesspool (LCC) Replacement Project*.

The COHDEM plans to locate a full-size Wastewater Treatment Plant, featuring four open sewage lagoons, on property next to the Naalehu Elementary School.

To demonstrate how serious the COHDEM is to put this sewage plant next to a school, last November, the County started condemning private property and acquire a family-owned ranch by June 2018.

**The problems** identified by the community **can be placed generally in two categories: cost of the new facility and capacity (the planned sewage plant outstrips any demand likely to develop in Naalehu for the life of the new facilities).**



10349-01  
March 6, 2020

ref (5)

### ***The Clean Wallet Act***

**If all the County had wanted was compliance with clean-water requirements, and with the least distress to the taxpayer and payer of sewage-system user fees, it probably would have explored alternative means of sewage treatment -- methods, such as constructed wetlands, that generally are less capital – and labor – intensive than traditional treatment plants. At the very least, it would have brought the planned treatment plant’s size more in line with realistic demand projections and would have developed a timetable for construction to minimize the Naalehu LCC problem.**

Once again, as with the Hilo sewage plant in 1989, **none of these courses was pursued. When citizens suggested alternative treatment methods, the letters and accompanying information were ignored in the EPA’s RESPONSES TO PUBLIC COMMENTS on the AOC Attachment B. No record of any further discussion of this proposal** will be provided upon request of Naalehu resident Sandra Demoruelle without EPA requiring a payment of \$1232 in FOIA fees.

The *Environment Hawaii* article goes on to explain the problems of a sewage plant that is too large for the amount of wastewater requiring treatment:

The problem of too large a size plant is **“underutilization (plants do not function well if routinely operated at a fraction of their capacity...”** Underutilized sewage plants can become a **“negative removal efficiency” – meaning “what the plant pumped out was more contaminated than what went in.”**

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka‘u, Hawai‘i  
Response to Comment – September 25, 2018 8:32 a.m.

Dear Ms. Demoruelle:

Thank you for your September 25, 2018 8:32 a.m. comment message regarding the County of Hawai‘i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

Comment #6 - The Draft EA Section 2.3.1 states that wastewater flow projections were developed for the treatment and disposal facility using the City and County of Honolulu wastewater standards, most recently updated in 2017. Based on these standards, the Pāhala treatment and disposal facility would be designed to provide an average dry weather flow capacity of 190,000 gallons per day (gpd), which would be sufficient capacity to close the two LCCs. The Draft EA Appendix B contains additional detail on the flow projections. The corresponding peak day wet weather flow is 650,000 gpd. This information will be repeated in the Final EA.

Future sewer main extensions and subdivisions will be accommodated, as capacity allows, on a first come, first served basis. The Draft EA, Appendix B, states the wastewater treatment plant (WWTP) design will be expandable not to preclude treating future average dry weather flows up to 360,000 gpd (with a corresponding peak day wet weather flow of 1,260,000 gpd) to meet the future needs of the community, in accordance with the requirements established in the Ka‘u Community Development Plan Policy 120. The Draft EA, Appendix B states the proposed WWTP will accommodate modification within the proposed 14.9-acre site for the future expansion of the service area.

Hawaii Administrative Rules (HAR) Title 11-62 requires wastewater treatment works to be designed in accordance with county standards. If a county does not have design standards, then the design standards for the City and County of Honolulu shall be used. The County of Hawai‘i does not have design standards; therefore, the City and County of Honolulu standards are applicable to the Pāhala WWTP. Application of the standards resulted in the flow capacities presented in the Draft EA Section 2.3.1. Additional detail is provided in the Draft EA Appendix B

10349-01

Letter to Ms. Sandra Demoruelle

Page 2

March 6, 2020

Section 5.6.1. It should be noted that wastewater flows from a community are highly variable, and peak flow rates from small community wastewater collection systems are typically three to five times higher than the average flow rates. The City and County of Honolulu standards take this variability into account, and application of the standards results in conservatively-designed facilities that are protective of human health and the environment in anticipated operational conditions. This information will be included in the Final EA.

The Naalehu and Hilo projects are not the subject of the Pāhala Large Capacity Cesspool Replacement Draft EA.

The proposed treatment system for the Pāhala WWTP includes aerated lagoons that are more-energy efficient than conventional activated sludge wastewater treatment processes. The aerated lagoon process is less sensitive to underloading conditions than conventional activated sludge wastewater treatment processes and will provide excellent treatment performance during low flow conditions. The “negative removal efficiency” effect is not applicable to the aerated lagoon technology. The proposed WWTP does include a constructed wetland treatment system and the proposed land treatment tree groves provide an energy-efficient “natural” technology that will use sunlight, vegetation, and soil properties to achieve the desired results.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Earl Matsukawa

#6

**From:** Naalehu Theatre <naalehuthatre@yahoo.com>  
**Sent:** Tuesday, September 25, 2018 9:39 AM  
**To:** Public Comment; Earl Matsukawa  
**Cc:** Kate Rao; Dora Beck; cleveland@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com  
**Subject:** Re: Sandra Demoruelle Comment #7 - LUC Rule 205-6 (d) Special Permit requires state LUC approval over 15 ac. OR FOR LANDS DESIGNATED IMP. AG. LAND

woc 10-18-2018

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits on land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyway, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

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10349-01  
March 6, 2020

ref (6)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 25, 2018 9:39 a.m.

Dear Ms. Demoruelle:

Thank you for your September 25, 2018 9:39 a.m. message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The Draft EA Section 2.3.1 states the County would acquire or obtain the right to develop and use a 14.9-acre area for construction of a new secondary treatment and disposal facility. The Draft EA Section 2.10.3 states according to Chapter 205, Hawaii Revised Statutes (HRS), §205-4.5 (a) within the Agricultural District on lands with Land Study Bureau master productivity rating class A or B shall be restricted to the following permitted uses: (7) public, private and quasi-public utility lines. Thus, the 1,500-foot by 25-foot utility easement is a permitted use. The 14.9-acre area is the appropriate project size as it provides sufficient area to meet the current and future needs of the community that the WWTP will serve, while minimizing the impact to the adjacent macadamia nut farm. Further, as stated in the Draft EA Section 2.10.3, the County of Hawai'i Department of Environmental Management will submit a Special Permit application to the County of Hawai'i Planning Commission. This information will be repeated in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

10349-01

Letter to Ms. Sandra Demoruelle

Page 2

March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#7

**Earl Matsukawa**

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct18-2018  
**Sent:** Tuesday, September 25, 2018 12:28 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com; Rep. Richard Creagan  
**Subject:** Re: Sandra Demoruelle Comment #8 - Inadequacy of Responsible Official outreach to the local Hawaiian community

The EPA Responsible Official failed to reach out to local Hawaiian organizations, choosing to poll instead the non-responsive Oahu organizations.

Suggested affected Hawaiian organizations would include:

O Ka'u Kakou  
Aha Moku Council  
Kau Agro-Forestry  
Big Island Community Coalition  
Hawaiian Civic Club of Ka'u (President Blossom DeSilva)  
Ho'omalu Ka'u  
Hui Malama Ola Na O'iwi  
Hula Halau O'Leionalani (Kumu hula Debbie Ryder)  
Ka Ohana O Honuapo  
Ka'u Multicultural Society  
Ka'u Preservation  
Life of the Land  
Malama I Ka Nani

Other affected community organizations would include:

Pacific Quest  
[Naalehu & Pahala] Boys and Girls Club  
Conservation Council for Hawaii  
Cooper Center Council  
Discovery Harbour Community Assn.  
Friends of the Hawaii Volcanoes National Park  
Friends of Kahuku Park  
Friends of the Ka'u Libraries  
Hawaii Farmers Union United  
Hawaiian Ranchos Community Assn.  
Ka'u 4-H  
Ka'u Agricultural Water Cooperative  
Ka'u Chamber of Commerce  
Ka'u Coffee Growers Assn.  
Ka'u Farm Bureau  
Ka'u Food Pantry  
Ka'u High School Alumni

Ka'u ILWU Pensioners Club  
Ka'u hospital Charitable Foundation  
Ka'u Preservation  
Ka'u Roping and Riding Assn.  
Ka'u Rural Health Community Assn.  
Ka'u Scenic Byways Committee  
Ka'u Soil and Water Conservation District  
Ocean View Community Assn.  
Ocean View Community Development Corporation  
Pahala Filipino Assn.  
Pahala Karate Dojo  
Sierra Club - Moku Loa Group  
The Nature Conservancy  
Tutu and Me Traveling Preschool  
Volcano Community Assn.  
Volcano Rotary Club

s/ Sandra Demoruelle Dated September 25, 2018 in Naalehu Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 687,500 sq. ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

--  
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10349-01  
March 6, 2020

ref (7)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 25, 2018 12:28 p.m.

Dear Ms. Demoruelle:

Thank you for your September 25, 2018 12:28 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

On March 8, 2018, the US Environmental Protection Agency (EPA) notified various Native Hawaiian Organizations (NHOs) that the County of Hawai'i Department of Environmental Management (DEM) had been authorized to act in EPA's behalf when initiating consultation under 54 U.S.C §300101 and 36 CFR §800.2(e)4 for the Pāhala Large Capacity Cesspool Replacement project. The NHOs to be notified were selected from those listed by the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization (NHO) Notification List, Updated December 14, 2017. On March 29, 2018, the DEM notified those on the list about the proposed Pāhala project and welcomed their comments under 54 U.S.C. §32706 also called Section 106 of the National Historic Preservation Act (NHPA). Further, the DEM letter requested the addressed organization, if acquainted with persons or organizations knowledgeable about the proposed project area, or any descendants with ancestral lineal or cultural ties or cultural knowledge or concerns, or religious attachment to the proposed project area, provide their names and contact information.

Notice of availability of the Draft EA was published on September 23, 2018. Subsequently on September 26, 2018, a public notice was published in the *Hawaii Tribune Herald*, *West Hawaii Today* newspapers, and the online *Ka'u News Brief*. The public notice was to advertise the October 10, 2018 public information meeting conducted by the County in Pāhala to discuss the availability of the Draft EA and process for submitting comments. The notice stated that the second part of the meeting would address Section 106 of the NHPA involving consultation with NHOs and Native Hawaiian descendants with ancestral lineal or cultural ties or cultural knowledge or concerns, or religious attachment to the proposed project area. During the October 10<sup>th</sup> meeting attendees were invited to provide information about the proposed project area.

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Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

Subsequently, notice of availability of the Draft EA was republished on November 8, 2018 and the comment period ended on December 10, 2018.

Based on the above, the EPA and the DEM have provided the necessary notifications and the opportunities for comment to NHOs and Native Hawaiian descendants with ancestral lineal or cultural ties or cultural knowledge or concerns, or religious attachment to the project area.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



Earl Matsukawa

**From:** Naalehu Theatre <naalehuthatre@yahoo.com> woc oct18-2018  
**Sent:** Tuesday, September 25, 2018 12:39 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwnald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan  
**Subject:** Re: Sandra Demoruelle Comment #9 - Hawaii County Council District 6 member's name is Maile Medeiros David (not Maile Medeiros)

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiros, when her name is listed on the COH website as "Maile Medeiros David."**

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits on land the area of which is greater than 15 acres **or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant.**"

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 867,500 sq. ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

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10349-01  
March 6, 2020

ref (8)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka‘u, Hawai‘i  
Response to Comment – September 25, 2018 12:39 p.m.

Dear Ms. Demoruelle:

Thank you for your September 25, 2018 12:39 p.m. message regarding the County of Hawai‘i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The councilmember’s name will be corrected in the Final EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG



**Earl Matsukawa**

---

woc oct18-2018

**From:** Naalehu Theatre <naalehtheatre@yahoo.com>  
**Sent:** Friday, September 28, 2018 9:54 AM  
**To:** eplan1@aol.com; TESSA BERMAN; Earl Matsukawa; Public Comment:  
clekven@brwncald.com; Bhat Simi (ENRD); Kate Rao; Dora Beck;  
kaena.horowitz@hawaiicounty.gov  
**Subject:** Meeting in Pahala for DEA - on Oct. 10, 2018 - written comments only for a 90% ESL  
community per your DEA?

Equity would allow for oral comments at the Oct 10 meeting.

Either written comments are required at all meetings r/t the DEA or not. Cite your statutory authority, please.

Best, Sandra Demoruelle

~

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10349-01  
March 6, 2020

ref (9)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka‘u, Hawai‘i  
Response to Comment – September 28, 2018 9:54 a.m.

Dear Ms. Demoruelle:

Thank you for your September 28, 2018 9:54 a.m. message regarding the County of Hawai‘i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Hawaii Administrative Rules (HAR) Title 11 Chapter 200 has no requirement for conducting a public meeting in conjunction with preparing an environmental assessment. The October 10, 2018 meeting was voluntarily sponsored by the County of Hawai‘i Department of Environmental Management (DEM) to encourage public participation in the environmental review process.

HAR 11-200-9.1(b) states that the “period for public review and for submitting written comments for both agency actions and applicant actions shall begin... Written comments to the proposing agency...shall be received or postmarked...” (emphasis added).

There is no provision for receiving oral comments in HAR 11-200. However, during the October 10, 2018 public meeting, the facilitator offered assistance by persons available at the meeting to put any oral comments attendees might wish to offer into writing.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#10

Earl Matsukawa

**From:** Naalehu Theatre <naalehuthatre@yahoo.com> woc oct18-2018  
**Sent:** Friday, September 28, 2018 11:52 AM  
**To:** eplan1@aol.com; TESSA BERMAN; Earl Matsukawa; Public Comment; clekven@brwnald.com; Bhat Simi (ENRD); Kate Rao; Dora Beck; kaena.horowitz@hawaiicounty.gov  
**Subject:** Re: Meeting in Pahala for DEA - on Oct. 10, 2018 - written comments only for a 90% LEP community per your DEA?

Sorry I used the educational term "ESL" - the correct regulatory requirement is Title VI - LEP, Public Participation and Affirmative Compliance Obligation: EPA 21.3.1 "you are required by Title VI of the Civil Rights Act to provide meaningful access to LEP individuals..." Having given Berna, B&C and W-O adequate notice herein, I will be present to observe that such LEP access is adequately provided at all EPA/COH DEA meetings, and I will need to report any violation to OCR- San Francisco.

In any case, except to exclude many meaningful comments, why wouldn't you take ORAL comments at the only DEA community meeting? Anyone who wanted to provide WRITTEN comments, such as myself, will do so. I do not need to go to a public meeting to hear written comments from extremely limited English language persons, LEP, as found in Pahala.

If any one of you cared at all, you would HEAR the various languages of LEP plantation workers most frequently spoken instead of English, as I do at the bank or post office.

But since none of you care about me, or Naalehu or Pahala, I will just keep on suing and suing and letting OCR know what you do to us at your DEA meetings.

Best, Sandra Demoruelle

PS: Lest you even think your "congressional appropriation" designation for the grant "protects" you from any statutory requirements - they have a policy covering that pork-barrel practice for evading NEPA/cross-cutters: EO 13457, the aptly named **Protecting American Taxpayers from Government Spending on Wasteful Earmarks**.

On Friday, September 28, 2018 09:54:04 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

Equity would allow for oral comments at the Oct 10 meeting.

Either written comments are required at all meetings r/t the DEA or not. Cite your statutory authority, please.

Best, Sandra Demoruelle

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28



10349-01  
March 6, 2020

ref (10)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 28, 2018 11:52 a.m.

Dear Ms. Demoruelle:

Thank you for your September 28, 2018 11:52 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Please refer to Appendix E for additional information regarding this issue.

Hawaii Administrative Rules (HAR) Title 11 Chapter 200 has no requirement for conducting a public meeting in conjunction with preparing an environmental assessment. The October 10, 2018 meeting was voluntarily sponsored by the County of Hawai'i Department of Environmental Management (DEM) to encourage public participation in the environmental review process.

There is no provision for receiving oral comments in HAR 11-200. However, during the October 10, 2018 public meeting, the facilitator offered assistance by persons available at the meeting to put any oral comments attendees might wish to offer into writing.

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We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

10349-01

Letter to Ms. Sandra Demoruelle

Page 2

March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#11

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**Sent:** Friday, September 28, 2018 1:21 PM  
**To:** eplan1@aol.com; TESSA BERMAN; Earl Matsukawa; Public Comment; clekven@brwncald.com; Bhat Simi (ENRD); Kate Rao; Dora Beck; kaena.horowitz@hawaiicounty.gov  
**Cc:** Maile David; Linda Morgan; David Albright; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com; Bob Martin; Ka'u Calendar News; The Ka'u Calendar Newspaper and Daily News Briefs; Rep. Richard Creagan; Nancy Cook Lauer; Shannon Rudolph; senruderman@capitol.hawaii.gov; mail@environment-hawaii.org; Office of U.S. Senator Brian Schatz; U.S. Senator Mazie Hirono; Joe Kamelamela; William Kucharski; Cohdem; mpoffice@earthjustice.org; Congresswoman Tulsi Gabbard; Charles Tuttle; Brenda Ford  
**Subject:** Re: Meeting in Pahala for DEA - on Oct. 10, 2018 - will police be there to arrest us?

Are you planning to have police present to arrest us for speaking on this tremendously controversial "municipal" sewage treatment plant?

Please answer or I will take it as a firm yes!

Sincerely, Sandra Demoruelle

On Friday, September 28, 2018 11:51:51 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Sorry I used the educational term "ESL" - the correct regulatory requirement is Title VI - LEP, Public Participation and Affirmative Compliance Obligation: EPA 21.3.1 "you are required by Title VI of the Civil Rights Act to provide meaningful access to LEP individuals..." Having given Berna, B&C and W-O adequate notice herein, I will be present to observe that such LEP access is adequately provided at all EPA/COH DEA meetings, and I will need to report any violation to OCR- San Francisco.

In any case, except to exclude many meaningful comments, why wouldn't you take ORAL comments at the only DEA community meeting? Anyone who wanted to provide WRITTEN comments, such as myself, will do so. I do not need to go to a public meeting to hear written comments from extremely limited English language persons, LEP, as found in Pahala.

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But since none of you care about me, or Naalehu or Pahala, I will just keep on suing and suing and letting OCR know what you do to us at your DEA meetings.

Best, Sandra Demoruelle

PS: Lest you even think your "congressional appropriation" designation for the grant "protects" you from any statutory requirements - they have a policy covering that pork-barrel practice for evading

NEPA/cross-cutters: EO 13457, the aptly named **Protecting American Taxpayers from Government Spending on Wasteful Earmarks.**

On Friday, September 28, 2018 09:54:04 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Equity would allow for oral comments at the Oct 10 meeting.

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Best, Sandra Demoruelle

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10349-01  
March 6, 2020

ref (11)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 28, 2018 1:21 p.m.

Dear Ms. Demoruelle:

Thank you for your September 28, 2018 1:21 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Community Large Capacity Cesspool Replacement project. Our responses follow:

This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

Formal police presence was not requested for the October 10, 2018 community information meeting.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#12

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct19-2018  
**Sent:** Friday, September 28, 2018 1:43 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwnald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan  
**Subject:** Re: Sandra Demoruelle Comment #10 - Pahala DEA fails to consider debt financing of the County share of the whole Pahala sewage line/municipal sewage treatment plant costs

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" Councilmember Maile Medeiro, when her name is listed on the COH website as "Maile Medeiros David."

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-0(d) "Special permits on land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 687,500 sq. ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

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10349-01  
March 6, 2020

ref (12)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 28, 2018 1:43 p.m.

Dear Ms. Demoruelle:

Thank you for your September 28, 2018 1:43 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

Hawai'i Administrative Rules (HAR) Title 11 Chapter 200-10 **Contents of an environmental assessment** does not include a requirement for evaluating the fiscal impacts of a project on a County's budget or ability to obtain funding.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

**Earl Matsukawa**

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct19-2018  
**Sent:** Saturday, September 29, 2018 5:50 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck; Bhat Simi (ENRD); kaena.horowitz@hawaiicounty.gov; TESSA BERMAN; David Albright, Albanese, Michael (USAHI)  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com; Maile David, Rep. Richard Creagan; eplan1@aol.com; Joe Kamelamela; William Kucharski; Linda Morgan; Bob Martin; Ka'u Calendar News; The Ka'u Calendar Newspaper and Daily News Briefs; Nancy Cook Lauer; Shannon Rudolph; mail@environment-hawaii.org; Cohdem; mpoffice@earthjustice.org; senruderman@capitol.hawaii.gov; Congresswoman Tulsi Gabbard; Office of U.S. Senator Brian Schatz; Brenda Ford; U.S. Senator Mazie Hirono  
**Subject:** Re: Sandra Demoruelle Pahala DEA Comment #11 - This is an illegal action as wastewater systems REQUIRE an EIS - see attached DOH EIS Guidelines  
**Attachments:** COH\_DOH\_EIS\_REQUIREMENTS\_Page\_1.jpeg; COH\_DOH\_EIS\_REQUIREMENTS\_Page\_2.jpeg

See attached "Guidelines" and withdraw this illegal DEA immediately or face further litigation and my using this as evidence of illegal violation of HRS 343 in my Demoruelle v. Dora Beck lawsuit.

As the COH Contractors, you need to stop these activities where you are clearly violating HRS 343/HAR 11-200 and 11-201, causing all of us in Kau concrete injuries that will be redressed through continuing legal action.

I have the resources and, this coming week, I WILL obtain legal counsel to pursue the NIED suits against all you Contractors who are so flagrantly harming me and everyone else by stomping on the EIS requirement for TWO wastewater systems..

Best, Sandra Demoruelle

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
 SANDRA DEMORUELLE

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/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
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/s Sandra Demoruelle  
 SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

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**Environmental Impact Statement (EIS)  
Hawaii Department of Health (DOH)  
Office of Environmental Quality Control (OEQC)**

**Purpose:** To propose the use of state or county lands, or lands within conservation districts, shoreline area, historic sites, or in the Waikiki Special District; to propose amendments to county general plans; or to propose a wastewater system, waste-to-energy facility, landfill, oil refinery, or power generating facility according to HRS Chapter 343-5. Activities proposing the importation of regulated plant feedstocks for biofuel may be subject to 343 review.

**Approval Authority:** Hawaii Revised Statutes (HRS) 343; Hawaii Administrative Rules (HAR) 11-200 and 11-201 (Environmental Council)

**Potential Approval Prerequisites:** Outreach with key regulatory agencies, stakeholders, and surrounding communities is strongly recommended early in the EA scoping phase. For private applicant actions, an Approving Agency must be established to determine the acceptability of the final EA.

**Fees:** None

**For Permit Application, Guidelines, and Fees:**

- OEQC website: <http://health.hawaii.gov/oeqc/>
- OEQC Online EA/EIS Library: [http://oeqc.doh.hawaii.gov/Shared%20Documents/Farms/AllItems.aspx?RootFolder=%2fShared%20Documents%2fEA and EIS Online Library](http://oeqc.doh.hawaii.gov/Shared%20Documents/Farms/AllItems.aspx?RootFolder=%2fShared%20Documents%2fEA%20and%20EIS%20Online%20Library)

**Contact Information:** OEQC (808) 586-4185

**Estimated Time for Permit Approval Decision from Application Acceptance:** See Checklist / Process

Checklist / Process – Applicant Actions Only	Chronology
1. Begin EIS Preparation Notice (EISPN) process, initiated by a determination letter from the approving agency stating the project has potential for significant environmental impacts. See "Special Conditions" for guidance on EISPN contents (or initiated after an agency determines that the proposed action is significant after the DEA public comment period).	
2. Agency/Applicant consults community and experts.	
3. Draft EIS Preparation Notice should be reviewed by approving agency.	
4. EIS Preparation Notice and agency determination letter submitted to OEQC with the OEQC Publication Form. OEQC publishes notice of EIS Preparation Notice	
5. Public review and comment period.	30 days
6. Agency/Applicant review comments.	
7. Begin Draft EIS process. The Draft EIS shall contain all information listed in HAR 11-200-17.	
8. Applicant performs required studies and answers any comments.	
9. Draft EIS should be provided to the Approving Agency for review prior to submittal to OEQC	
10. Draft EIS, interested party EIS Distribution List, and OEQC Publication Form are concurrently submitted to: (1) Approving Agency; and, (2) OEQC. OEQC publishes notice of Draft EIS.	
11. Public review and comment period.	45 days

12. Agency/Applicant review comments.	
13. Begin Final EIS process by drafting the Final EIS. The Final EIS shall contain all information listed in HAR 11-200-18.	
14. Draft Final EIS should be provided to Approving Agency for preliminary review prior to submittal of Final EIS.	
15. Approving Agency receives Final EIS w/ final Distribution List and OEQC Publication Form for processing (compliance/non-compliance determination) within 30 days unless an extension is requested.	30 days
16. Accepting Authority accepts or rejects Final EIS based on determination of compliance or non-compliance with HRS 343.	
17. Approving Agency submits Final EIS, interested party EIS Distribution List, and OEQC Publication Form to OEQC. OEQC publishes notice of acceptance or non-acceptance of Final EIS.	
18. Appeal period to challenge acceptance or non-acceptance of Final EIS.	60 days
<b>Estimated Time for Completing the Permit Process</b>	<b>6-18+ months</b>

**Estimated Time:** Varies depending on the timelines involved in the EIS determination and other activities (attached reports, public input and response, agency review, etc.).

**Special Conditions / Requirements for Renewable Energy Projects:**

- For projects going straight to an EIS under Act 172 (2012), no environmental assessment is required, but sufficient information must be provided in the EIS Preparation Notice to support thorough project review and identification of all interested parties for consultation.
- EA/EIS must contain information specific to the proposed action. If using templates or other EAs/EISs as a base, components should be inserted into the instant EIS only if relevant and specific to the impacts of the instant action being proposed.
- State and/or County permits required for a biofuel/biomass facility or waste-to-energy facility can determine whether or not the project is a "waste-to-energy facility" or "oil refinery" under HRS 343-5(a). Projects should be classified and named consistently by various agencies throughout the various permitting processes. Review the definition of "power-generating facility" to see if your project fits this definition and triggers HRS 343 review.
- Project proponents should work closely with the approving agency throughout the EA/EIS process to facilitate document review, processing, and publication.
- If a proposed project is subject to both the federal National Environmental Policy Act (NEPA) and HRS 343, the project proponent and agencies shall reduce duplication of requirements to the fullest extent possible as described in HAR 11-200-25.
- "Voluntary" environmental review documents developed for projects that do not trigger HRS 343 will not be published or processed as prescribed under HRS 343, but can add value to the environmental review/permitting process. Non-343 review documents should be clearly identified as such, and not labeled as an Environmental Impact Statement or Environmental Assessment (e.g., "Environmental Review Document," "Environmental Report").
- Exemptions from HRS 343 that are issued by an agency should be provided to OEQC for publication.



10349-01  
March 6, 2020

ref 13)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – September 29, 2018 5:50 p.m.

Dear Ms. Demoruelle:

Thank you for your September 29, 2018 5:50 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

On September 12, 2018, the Draft EA for the Pāhala Large Capacity Cesspool Replacement project was filed with the State of Hawaii Department of Health Office of Environmental Quality Control (OEQC) under the filing dates schedule established by OEQC.

You have referenced an EIS-specific checklist. The most up-to-date guidance available for the EA process is available for download at:  
[http://oeqc2.doh.hawaii.gov/OEQC\\_Guidance/Forms/AllItems.aspx](http://oeqc2.doh.hawaii.gov/OEQC_Guidance/Forms/AllItems.aspx)

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#14

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**Sent:** Monday, October 1, 2018 10:29 AM  
**To:** Public Comment; Earl Matsukawa; John Sakaguchi; clekven@brwncaid.com; eplan1@aol.com; Kate Rao; iconstantinescu@brwncaid.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com  
**Subject:** Fw: AOC Section IX - "Compliance with this Consent Order shall not be a defense to any actions commenced pursuant to such applicable laws [HRS 343], ...nor does it constitute a release!"  
**Attachments:** Image (2).jpg

The preliminary injunction is required because you have all acted illegally against the citizens of Hawaii in violating all the environmental statutes and regulations including the ESA, causing us concrete harm. None of you should ever be paid for the wanton ignorance that you have all brought to this project that has caused us all so much trauma and pain.

Sincerely, Sandra Demoruelle

----- Forwarded Message -----

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**To:** kaena.horowitz@hawaiicounty.gov <kaena.horowitz@hawaiicounty.gov>  
**Cc:** Joe Kamelamela <joe.kamelamela@hawaiicounty.gov>; Bhat Simi (ENRD) <simi.bhat@usdoj.gov>; TESSA BERMAN <berman.tessa@epa.gov>; Dora Beck <dora.beck@hawaiicounty.gov>  
**Sent:** Monday, October 1, 2018 10:22:49 AM HST  
**Subject:** AOC Section IX - "Compliance with this Consent Order shall not be a defense to any actions commenced pursuant to such applicable laws [HRS 343], ...nor does it constitute a release!"

Aloha,

In spite of Ex. A Section IX, your MTD relied on the AOC for its reason that an EA/EIS was not 13 years overdue under HEPA. I find it hard to find any reason to rely on the AOC since it had approved the earlier purchase of property with no EA/EIS, said to be in violation of the same HRS 343.

You said that "nothing in HRS 343 compels Defendants to do otherwise..." than fail to produce the EA referred to in several public documents.

Since both statements for avoiding publication under HRS 343 and production of the requested record under UIPA are untrue, do you want to change your MTD to an answer to my Complaint?

Otherwise, Plaintiff's Opposition will scorch you, filed last minute so you will be stressed to timely reply, and will point to the validity of my prelim. inj.

Best, Sandra Demoruelle

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ATTACHMENT A



*Six year-old Daniel McDowell points to his Naalehu Elementary School kindergarten classroom beside the four open sewage lagoons proposed by the County of Hawaii at the April 12, 2018, Brown and Caldwell "talkstory" meeting – the sole opportunity for "public participation."*



10349-01  
March 6, 2020

ref 14)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 1, 2018 10:29 a.m.

Dear Ms. Demoruelle:

Thank you for your October 1, 2018 10:29 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#15

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> oct 19-2018  
**Sent:** Monday, October 1, 2018 10:41 AM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David, Rep. Richard Creagan;  
iconstantinescu@brwncald.com; John Sakaguchi; Bhat Simi (ENRD); TESSA BERMAN;  
eplan1@aol.com; kaena.horowitz@hawaiicounty.gov; Joe Kamelamela  
**Subject:** Re: Sandra Demoruella Comment #11 - In TEN Notice [9/23/18], HRS Trigger did not  
state it was 5(a)(9) - a "proposed wastewater system" which triggers an EIS  
**Attachments:** Image (2).jpg

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
S/ Sandra Demoruella  
SANDRA DEMORUELLE

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruella  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" Councilmember Maile Medeiros, when her name is listed on the COH website as "Maile Medeiros David."

/s Sandra Demoruella Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyway, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq. ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruella  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

--  
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## ATTACHMENT A



*Six year-old Daniel McDowell points to his Naalehu Elementary School kindergarten classroom beside the four open sewage lagoons proposed by the County of Hawaii at the April 12, 2018, Brown and Caldwell "talkstory" meeting – the sole opportunity for "public participation."*



10349-01  
March 6, 2020

ref (15)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 1, 2018 10:41 a.m.

Dear Ms. Demoruelle:

Thank you for your October 1, 2018 10:41 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Hawaii Revised Statutes (HRS) Chapter 343 Section 5 (a)(9)(A), states as follows: "(a) Except as otherwise provided, an environmental assessment (emphasis added) shall be required for actions that: ... (9) Propose any: (A) Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent...". Hawaii Administrative Rules (HAR) Title 11, Chapter 200, which implements HRS Chapter 343, however, differentiates between "agency actions" that utilize state or county lands or funds and "applicant actions" for which an applicant must seek agency approval. Since the proposed action will utilize county lands and funds, it is an "agency action" requiring compliance with HRS Chapter 343 and HAR Title 11, Chapter 200, pursuant to which an environmental assessment is being prepared and processed.

HRS 343-5 **Applicability and requirements** states under item (c) (4) "A(n environmental impact) statement shall be required if the agency finds that the proposed action may have a significant effect on the environment..." The criteria by which the proposing agency makes the significance determination is provided in HAR 11- 200-12 (a) and (b) which states: "(a) In considering the significance of potential environmental effects, agencies shall consider the sum of the effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action. (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences,... and the...effects of the action."

HAR 11-200-10 **Contents of an environmental assessment** includes "(9) Findings and reasons supporting the agency determination or anticipated determination..." The Draft EA provides this



10349-01

Letter to Ms. Sandra Demoruelle

Page 2

March 6, 2020

information in Chapter 8 Findings and Determination. Neither HRS Chapter 343 nor HAR Title 11, Chapter 200 contain any requirement that all proposed wastewater systems require an EIS.

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read 'Keola Cheng', with a stylized flourish extending to the right.

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#16

Earl Matsukawa

**From:** Naalehu Theatre <naalehuthatre@yahoo.com>  
**Sent:** Wednesday, October 3, 2018 8:17 AM  
**To:** eplan1@aol.com; Kate Rao; Dora Beck  
**Cc:** Bhat Simi (ENRD); TESSA BERMAN; clekven@brwncald.com; Earl Matsukawa; kaena.horowitz@hawaiicounty.gov; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com; Public Comment; Rep. Richard Creagan; Maile David; Ka'u Calendar News; The Ka'u Calendar Newspaper and Daily News Briefs; Nancy Cook Lauer; David Albright; Linda Morgan; Bob Martin; Shannon Rudolph  
**Subject:** Fw: Rules Update 2018-10-02 - Availability of All Written and Oral Testimony  
**Attachments:** EPA\_Opposition\_MTD\_September\_28\_2018.doc

Please note that the State Office of Environmental Quality Control took **BOTH WRITTEN AND ORAL COMMENTS** on their rulemaking.

**There is no reason for COH Sub-Contractor Berna Senelley to state that at the October 10th Pahala Wastewater System DEA meeting: "no one will be allowed to speak. Its an EPA rule." It makes us fearful of retribution if we try to speak up. Will there be Hawaii Police to stop us from speaking?**

Surely, someone at the Pahala DEA meeting can take oral comments and make a transcription, as OEQC has done, thus allowing us Freedom of Speech Rights to speak our minds?

**Actually, no DEA meeting should take place because the twin projects, less than 11 miles apart, should be considered together and trigger a HEPA 343 Sec5(a)(9) wastewater system single EIS and EISPN notice in TEN.**

These projects deserve a scoping meeting for the EIS, not the two separate DEAs meetings - see my attached pleading for my legal arguments "why."

Best, Sandra Demoruelle

----- Forwarded Message -----

**From:** State Office of Environmental Quality Control <oeqchawaii@doh.hawaii.gov>  
**To:** "naalehuthatre@yahoo.com" <naalehuthatre@yahoo.com>  
**Sent:** Tuesday, October 2, 2018 05:00:02 PM HST  
**Subject:** Rules Update 2018-10-02 - Availability of All Written and Oral Testimony

[View this email in your browser](#)

## EIS Rules Update - Draft 1.0 Public Hearings Written and Oral Comments Available

13

Aloha, the complete compilation of written and oral comments is now available for review.

Click on the link to access the PDF of written and oral comments from the OEQC SharePoint site:  
<http://oeqc2.doh.hawaii.gov/Laws/v1.0-Proposed-HAR-11-200.1-All-Comments-2018-10-02.pdf>

This file supersedes the previous PDF of written comments released in June 2018.

The Environmental Council Permitted Interaction Group is finalizing its report of recommendations to the Council on responding to the comments and anticipates submitting the report to the Council in late October 2018.

[Click here to go to the rules update webpage.](#) The webpage is still being updated to incorporate the most current timeline and information. The OEQC will send another email notification once the website has been updated.

For background on the proposed rules, click on the links below to access PDFs of the rules package:

- [Hearing Notice](#) of the now completed public hearings
- [Version 1.0 Proposed HAR 11-200.1 Rules Standard Format](#)  
(or go to [CiviComment](#) to see the online comments)
- [Version 1.0 Proposed HAR 11-200.1 Rules Ramseyer Format](#)
- [Version 1.0 Proposed HAR 11-200.1 Rules Ramseyer Unofficial Format](#)
- [Version 1.0 Proposed HAR 11-200.1 Rules Rationale](#)

Mahalo,

Office of Environmental Quality Control  
(808) 586-4185

14



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1 Sandra Lee Demoruelle  
2 PO Box 588  
3 Naalehu HI 96772-0588  
4 Ph. 808-929-9244  
5 Email: naalehtheatre@yahoo.com

6 **IN THE UNITED STATES DISTRICT COURT**  
7 **FOR THE DISTRICT OF HAWAII**

8 **CASE NO. CV 18-00172 JMS-KSC**

9 <b>SANDRA LEE DEMORUELLE, <i>Pro Se</i></b>	)	<b>PLAINTIFF'S</b>
10 <b>PLAINTIFF</b>	)	<b>MEMORANDUM OF</b>
	)	<b>POINTS OF LAW AND</b>
11 <b>v.</b>	)	<b>AUTHORITIES IN OPPOSITION</b>
12 <b>ANDREW WHEELER, et al.</b>	)	<b>TO DEFENDANTS' MOTION</b>
	)	<b>TO DISMISS; CERTIFICATE OF</b>
13 <b>DEFENDANTS</b>	)	<b>SERVICE</b>
	)	
	)	<b>Hearing Date: Oct. 29, 2018</b>
	)	<b>Time: 10:00 a.m.</b>
	)	<b>Judge: Hon. J. Michael Seabright</b>
	)	

16 **PLAINTIFF'S MEMORANDUM OF POINTS OF LAW AND AUTHORITIES IN**  
17 **OPPOSITION TO DEFENDANTS' MOTION TO DISMISS**

18 **I. INTRODUCTION**

19  
20  
21 Plaintiff Sandra Lee Demoruelle, *Pro Se*, respectfully submits her Opposition to  
22 Defendants' Motion to Dismiss. The Plaintiff claims that the two County of Hawaii Department  
23 of Environmental Management ("COHDEM") Ka'u wastewater treatment plants ("WWTPs")  
24 Project Work Plans are proceeding in violation of National Environmental Policy Act ("NEPA")  
25 42 USC Sec. 4321 *et seq.* because in failing to follow statutory and regulatory procedure for  
26 public participation, no environmental impact statement has been considered or prepared and  
27 submitted for publication as required by the NEPA and Hawaii environmental review statutes  
28

1 (“HEPA”), Hawaii Revised Statutes (“HRS”) 343 *et seq.* Plaintiff challenges the decision by  
2 Kate Rao, the EPA Responsible Official under 40 CFR 6.200, determining that only the Pahala  
3 Large Capacity Cesspool (“LCC”) Closure Project, Def. Ex. 1-A and Ex. 6, would be subject to  
4 NEPA environmental review procedures and “other environmental cross-cutters (see 40 CFR  
5 6.300 *et seq.*) applicable to this project.” Ex.5 [Grant Agreement P1].

6  
7 According to the Defendants’ Exhibit 5, which is not authenticated by any affidavit  
8 [FRCP Rule 12(d) Presenting Matters Outside the Pleadings], purported to be the original EPA-  
9 County of Hawaii Grant Agreement XP-96942401 dated September 20, 2005, Section P1  
10 requires that, ever since 2005, the EPA must comply with NEPA “and other environmental  
11 crosscutters” for the “Kau Cesspool Replacement Project” for the “design and construction of  
12 wastewater system improvements in Naalehu and Pahala in the Kau district of the Big Island of  
13 Hawaii.” Dkt. No. 25-11.

14 As stated in the original Grant Agreement [Def. Ex. 5], the EPA-assisted project  
15 “involves replacement of sewer lines ..., installation of community septic tank systems and  
16 elimination of 5 large capacity cesspools.” The Naalehu and Pahala LCCs, being geographically  
17 located 11 miles apart in the remote, sparsely populated District of Kau, were initially treated as  
18 a single project with EPA having the sole responsibility to comply with NEPA/cross-cutting  
19 statutes and regulations since 2005.

20 After Plaintiff filed her Complaint on May 14, 2018, on May 30, 2018, Defendants and  
21 County of Hawaii Department of Environmental Management (“COHDEM”) entered into an  
22 “Assistance Amendment” [XP-96942401-7] that caused harm to the Plaintiff by “the shift[ing] of  
23 project location from Naalehu to Pahala” and allocating the EPA funding, with concurrent  
24 NEPA/cross-cutting obligations, “only to the ‘Construction-Wastewater Treatment and Disposal  
25 System’ task in the approved Pahala Community Large Capacity Cesspools Replacement Project  
26 work plan,” thereby avoiding any NEPA/crosscutting procedures for the Naalehu Work Plan and  
27 causing the Plaintiff concrete injuries. The Plaintiff claims that the EPA Defendants are  
28 proceeding in violation of NEPA 42 USC Sec. 4321 *et seq.* because no environmental impact

1 statement for the Naalehu and Pahala LCC Closure Project has been prepared and submitted as  
2 required by NEPA and Hawaii environmental review statutes (“HEPA”), HRS 343 *et seq.*  
3 Defendant, Kate Rao, EPA’s Responsible Official, has failed her duty to provide environmental  
4 review (40 CFR 6.200) of the cumulative effects of two new-build municipal secondary  
5 wastewater treatment plants planned to service under 170 households at each site (40 CFR  
6 1508.25 (2)), projects which further have the geographic and common timing that require EPA  
7 “to treat them in a single impact statement.” 40 CFR 1508.25 (3).

8 The Plaintiff also alleges that the Defendants failed to comply with the  
9 procedural requirements of 40 CFR Part 25 – PUBLIC PARTICIPATION IN  
10 PROGRAMS UNDER THE RESOURCE CONSERVATION AND  
11 RECOVERY ACT, THE SAFE DRINKING WATER ACT, AND THE CLEAN  
12 WATER ACT for public participation in activities under the Clean Water Act  
13 (Pub. L. 95-217). Plaintiff argues that “by failing to prepare an [EA/EIS] the  
14 defendants eliminated the public’s right to participate.” *City of South Pasadena*  
15 *V. Slater*, 56 F.Supp.2d 1106 (C.D.Cal. 1999). “When substantive judgments  
16 are committed to the very broad discretion of an administrative agency,  
17 procedural safeguards that assure public access to the decisionmaker should be  
18 vigorously enforced.” *Western Oil & Gas v. EPA*, 633 F.2d 803, 813 (9<sup>th</sup>  
19 Cir.1980).

20 Further, lacking an EIS, there is no “sound basis” for all the past and  
21 current COHDEM studies – and ongoing studies without an EIS to “provide a  
22 sound basis for investigation...” *Sierra Club v. Froehlke*, 630 F. Supp. 1215,1227  
23 (S.D.Tex. 1986).

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II. ARGUMENT

A. Defendants' Failure to State a Claim FRCP 12(b)(6) Allegation

Plaintiff seeks declaratory and injunctive relief to protect Plaintiff's interests at law, especially her interests that the EPA comply with the NEPA and EPA regulatory requirements for public participation in identifying alternatives to the recommended projects (40 CFR 1501.7). The Plaintiff seeks this relief by requiring EPA to comply with NEPA statutes and other public participation requirements, treating the two remaining Ka'u LCC closures as one project and completing the NEPA Section 102 Environmental Impact Statement as a single document for both the Pahala and Naalehu Work Plans before any further wastewater planning; design; engineering, biologic and/or archaeological studies; or construction is done at any proposed site in either Naalehu or Pahala.

B. Defendants' Lack of Jurisdiction FRCP 12(b)(1) or (2) Allegation

The Defendants suggest that adjudication of the procedural challenge at this point is improper because a future site-specific EA/EIS might eliminate the concrete injury the Plaintiff has endured because of COHDEM procedural NEPA violations and render this adjudication unnecessary. ("[Defendant] suggests adjudication of [the] challenge at this point is improper because future project-specific consultations might result in mitigation or elimination of any potential harm to [Plaintiff], thus rendering adjudication unnecessary. We conclude, however, that [Plaintiff's] lawsuit is ripe for adjudication." *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015).

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A procedural dispute, such as the case in question, is ripe "at the time the [procedural] failure takes place." When a party suffers a procedural injury, it "may complain of that failure at the time the failure takes place, for the claim can never get riper." *See Ohio Forestry Association v. Sierra Club et al.*, 523 U.S. 726, 737 (1998); *see also* "The imminence of project-specific implementation 'is irrelevant to the ripeness of an action raising a procedural injury.'" *Citizens for Better Forestry v. USDA*, 341 F.3d 961, 977 (9<sup>th</sup> Cir. 2003) as cited in *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015). "This dispute needs no additional factual development because the procedural injury has already occurred." *Id.*

1. NEPA Standard of Review

"NEPA is essentially a procedural statute (*Daly v. Volpe*, 514 F.2d 1106 (9<sup>th</sup> Cir. 1975)) and we have recognized that careful compliance with its provisions is necessary to fulfill the statute's fundamental goals..." *Alpine Lakes Protection Society v. Schlapfer*, 518 F.2d 1089 (9<sup>th</sup> Cir. 1975) (*See Kleppe v. Sierra Club*, 427 U.S. 390, 409-410 (1976) (The court's role is to ensure that the agency has taken a "hard look" at environmental consequences.)

It is unusual for cases in this century to find that agencies have fully avoided NEPA procedures for thirteen years (September 20, 2005 to present), so the Court needs to look back to the original 1971 *Calvert Cliffs' Coordinating Committee* for guidance:

The NEPA statute establishes a "strict standard of compliance" mandating "a particular sort of careful and informed decisionmaking process and creates judicially enforceable duties. ... [I]f the [agency] decision was reached procedurally without individualized consideration and balancing

1 of environmental factors – conducted fully and in good faith – it is the  
2 responsibility of the courts to reverse.” The Court said environmental  
3 issues must be considered at every important stage in the decisionmaking  
4 process, i.e., at every stage where an overall balancing of environmental  
5 and non-environmental factors is appropriate and where alterations might  
6 be made in the proposed action to minimize environmental costs. “NEPA,  
7 first of all, makes environmental protection a part of the mandate of every  
8 federal agency and department.”

9 “[Every federal agency] is not only permitted but compelled to take  
10 environmental values into account. Perhaps the greatest importance of  
11 NEPA is to require the Atomic Energy Commission and other agencies to  
12 consider environmental issues just as they consider other matters within  
13 their mandates.” at 1112.

14 The court must determine whether “the actual balance of costs and  
15 benefits that was struck was arbitrary or clearly gave insufficient weight to  
16 environmental values.”

17 “To ensure that the balancing analysis is carried out and given full effect,  
18 Section 102(2)(c) requires that responsible officials of all agencies prepare  
19 a ‘detailed statement’ covering the impact of particular actions on the  
20 environment, the environmental costs which might be avoided, and  
21 alternative measures which might alter the cost-benefit equation. The  
22 apparent purpose of the ‘detailed statement’ is to aid in the agencies’ own  
23 decision making process and to advise other interested agencies and the  
24 public of the environmental consequences of planned federal action.  
25 Beyond the ‘detailed statement,’ Section 102(2)(D) [now 102(2)(E)]  
26 requires all agencies specifically to ‘study courses of action in any  
27 proposal which involves unresolved conflicts concerning alternative uses  
28 of available resources.’ This requirement, like the ‘detailed statement’  
requirement, seeks to ensure that each agency decision maker has before  
him and takes into proper account all possible approaches to a particular  
project (including total abandonment of the project) which would alter the  
environmental impact and the cost-benefit balance. Only in that fashion is  
it likely that the most intelligent, optimally beneficial decision will  
ultimately be made.

Thus the Section 102 duties are not inherently flexible. They must be  
complicated with to the fullest extent, unless there is a clear conflict of  
statutory authority. Considerations of administrative difficulty, delay or  
economic cost will not suffice to strip the section of its fundamental  
importance.

We conclude, then, that Section 102 of NEPA mandates a particular sort  
of careful and informed decisionmaking process and creates judicially

7 enforceable duties. The reviewing courts probably cannot reverse a  
8 substantive decision on its merits, under Section 101, unless it be shown  
9 that the balance of costs and benefits that was struck was arbitrary or  
10 clearly gave insufficient weight to environmental values. But if the  
11 decision was reached procedurally without individualized consideration  
12 and balancing of environmental factors – conducted fully and in good faith  
13 – it is the responsibility of the courts to reverse.

14 The question here is whether the Commission is correct in thinking that its  
15 NEPA responsibilities may ‘be carried out *in toto* outside the hearing  
16 process’ – whether it is enough that environmental data and evaluations  
17 merely ‘accompany’ an application through the review process, but  
18 receive no consideration whatever from the hearing board.

19 We believe that the Commission’s crabbed interpretation of NEPA makes  
20 a mockery of the Act. What possible purpose could there be in Section  
21 102(2)(c) requirement (that the ‘detailed statement’ accompany proposals  
22 through agency review processes) if ‘accompany’ means no more than  
23 physical proximity – mandating no more than the physical act of passing  
24 certain folders and papers, unopened, to reviewing officials along with  
25 requiring the ‘detailed statement’ to be before hearing boards, if the boards  
26 are free to ignore entirely the contents of the statement? NEPA was meant  
27 to do more than regulate the flow of papers in the federal bureaucracy.  
28 The word ‘accompany’ in Section 102(2)(c) must not be read so narrowly  
as to make the Act ludicrous. It must, rather, be read to indicate a  
congressional intent that environmental factors, as compiled in the  
‘detailed statement,’ be considered through agency review processes.  
*Calvert Cliffs’ Coordinating Committee v. AEC*, 449 F.2d 1109, 1113-  
1114 (D.C.Cir. 1971)

29 “[A]n EIS is in compliance with NEPA when its form, content, and  
30 preparation substantially (1) provide decision-makers with an environmental  
31 disclosure sufficiently detailed to aid in the substantive decision whether to  
32 proceed with the project in light of its environmental consequences, and (2)  
33 make available to the public, information of the proposed project’s  
34 environmental impact and encourage public participation in the development of  
35 that information.” *Trout Unlimited v. Morton*, 509 F.2d 1276,1283 (9<sup>th</sup> Cir.  
36 1974)

1 It is important that draft environmental statements be prepared and  
2 circulated for comment and furnished to the Council as early as possible in  
3 the agency review process in order to permit agency decisionmakers and  
4 outside reviewers to give meaningful consideration to the environmental  
5 issues involved. In particular, agencies should keep in mind that such  
6 statements are to serve as the means of assessing the environmental impact  
7 of proposed agency actions, rather than as a justification for decisions  
8 already made. This means that draft statements on administrative actions  
9 should be prepared and circulated for comment prior to the first significant  
10 point of decision in the agency review process. *State of California v.*  
11 *Block*, 690 F.2d 753 (9<sup>th</sup> Cir. 1982).

12 The EPA refused to disclose the Proposed Action – the actual Work Plan  
13 for the Naalehu WWTP – prior to ALL opportunity for public to comment had  
14 passed. (“By refusing to disclose its Proposed Action until after all opportunity  
15 for comment has passed, an agency insulates its decision-making process from  
16 public scrutiny. Such a result renders NEPA’s procedures meaningless.”) *State of*  
17 *California v. Block*, 690 F.2d 753 (9<sup>th</sup> Cir. 1982). Therefore, without sufficient  
18 information to permit “meaningful consideration” of the Naalehu Work Project  
19 under EPA review for AOC compliance, the Ka’u community and the general  
20 public could not participate through intelligent comments before the June 2016  
21 deadline.

22 This lack of specific EIS information on the Proposed Action made all the  
23 Naalehu Work Plan comments irrelevant and EPA responses dismissed all the  
24 critical comments without any consideration of the dire warnings of  
25 environmental harm. (“[T]he gravamen of their claim is that there was insufficient  
26 information to adequately participate in the comment process.” *Idaho ex rel.*  
27 *Kemphorne v. US Forest Service*, 142 F. Supp.2d 1248, 1260 (D. Idaho 2001)).  
28 The AOC Work Plans the EPA provided for comments in May 2016 failed to

1 provide the public with a meaningful opportunity to comment on the COHDEM  
2 WWTP Proposed Actions.

3 But EPA’s responsibility to respond to the Naalehu comments is shaped  
4 by the extreme degree of the human environmental effects of the siting of the  
5 Proposed Action – a secondary WWTP –adjoining a rural elementary school as  
6 described in the AOC Naalehu Work Plan and its compulsory compliance  
7 “Milestones.” (“The scope of an agency’s responsibility to respond to comments  
8 is shaped by the degree that the comments bear ‘on the environmental effects of  
9 the proposed action.’ 40 CFR 1500.10(a)(1977) as cited in *State of California v.*  
10 *Block*, 690 F.2d 753 (9<sup>th</sup> Cir. 1982)).

11 EPA failed to require that relevant COHDEM WWTP Projects  
12 environmental documents, comments, and responses accompany the proposed  
13 projects through existing EPA review processes so that the EPA officials could  
14 use the statement in making decisions. 40 CFR 1505.1(d). (*See also* 40 CFR  
15 25.11(b)(2) [At minimum the assisted agency work plan shall include:] “A  
16 proposed schedule for public participation activities to impact major decisions,  
17 including consultation points where responsiveness summaries will be.”)

18 By failing to ensure COHDEM followed even the minimal schedule of  
19 “talkstory” community meetings, the EPA “denied the public that very  
20 opportunity to participate in the decisionmaking process which is among the very  
21 purposes of the [NEPA] Act itself.” *Columbia Basin Land Protection Ass’n v.*  
22 *Schlesinger*, 643 F.2d 585 (9<sup>th</sup> Cir. 1981).

23 **2. Rationalize and Justify Decisions**

1 By waiting thirteen years to even begin preparation of any environmental  
2 review documents, the agencies are merely rationalizing and justifying their  
3 decisions which are made without consideration of the environmental effects.  
4 EPA has shown that it failed to grasp the fact that environmental review laws are  
5 "procedural" by allowing COHDEM Director Kucharski to determine that an EA  
6 cannot even be started for the pre-determined wastewater treatment projects until  
7 the County has done site-specific environmental studies, which is after the fact  
8 rationalization. Word-for-word, Director Kucharski said: "*In an EA you come up  
9 with a preferred alternative, and that preferred alternative is what all of the  
10 environmental studies and impacts are centered around. And you have to go  
11 through a justification as to how you got to that preferred site. And that is the  
12 process.*" Director Kucharski statement at COH Environmental Management  
13 Commission meeting minutes of June 27, 2018 [approved as presented July 26,  
14 2018], page 26.

15  
16  
17  
18 **C. Defendants' Lack of Plaintiff's Standing Allegation**

19 To establish Article III standing, "a plaintiff must show (1) it has  
20 suffered an 'injury in fact' that is (a) concrete and particularized and (b) actual or  
21 imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the  
22 challenged action of the defendant; and (3) it is likely, as opposed to merely  
23 speculative, that the injury will be redressed by a favorable decision." *Friends of  
24 the Earth v. Laidlaw Environmental Services (TOC), Inc.*, 528 U.S. 167, 180-81  
25 (2000).  
26  
27  
28

1 The Plaintiff's declaration sufficiently establishes "a geographic nexus  
2 between the individual asserting the claim and the location suffering an  
3 environmental impact." *Western Watersheds Project v. Kraayenbrink*, 632 F.3d  
4 472, 485 (9<sup>th</sup> Cir. 2011) (internal quotation marks omitted); *see also Wilderness  
5 Society, Inc. v. Rey*, 622 F.3d 1251, 1256 (9<sup>th</sup> Cir. 2010). In the present case, the  
6 Naalehu ESA Phase I names the Naalehu Elementary School as the western  
7 boundary of the WWTP facility. As Plaintiff's great-grandson's first grade  
8 classroom is currently within 100 feet of the Naalehu WWTP boundary with the  
9 school, the geographic nexus between the individual and the location of the  
10 Proposed Action is clearly established.  
11  
12

13 Where a procedural violation is at issue, "a litigant need only demonstrate  
14 that he has a procedural right that, if exercised, could protect his concrete interests  
15 and that those interests fall within the zone of interests protected by the statute at  
16 issue." *NRDC v. Jewell*, 749 F.3d 776, 783 (9<sup>th</sup> Cir.2014) (internal alterations and  
17 quotations omitted). "Thus, where a procedural violation is at issue, a plaintiff  
18 need not 'meet [] all normal standards for redressability and immediacy.'" *Lujan  
19 v. Defenders of Wildlife*, U.S. 555, 572 n. 7 (1992) as cited in *Cottonwood  
20 Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015).  
21 (A plaintiff that sues a federal agency must also demonstrate that: (1) its  
22 complaint "relate[s] to 'agency action,' which is defined to include 'failure to  
23 act'"; and (2) it "suffered either 'legal wrong' or an injury falling within the 'zone  
24 of interests' sought to be protected by the statute on which [its] complaint is  
25 based." "We have explained that injury to aesthetic, recreational, or scientific  
26  
27  
28



1 interests may constitute 'concrete injury,' but we have stressed that 'plaintiffs can  
2 only suffer a concrete injury if the Forest Service ... [is] undertaking or  
3 threatening to undertake activities that cause or threaten harm to the plaintiffs'  
4 protected interests.'") *Center for Biological Diversity v. Lueckel*, 417 F.3d 532,  
5 536,537 (6<sup>th</sup> Cir. 2005).

### 7 III. CONCLUSION

8 For the reasons stated above, this Court should deny the Defendants' motion for  
9 dismissal. The Defendants have threatened the Naalehu community with a horrendous sewage  
10 project adjoining the elementary school, and even taken action to condemn the property.

12 Every day causes more injury to the Plaintiff and her affected community.

13 The COHDEM has a commitment to completing 90% of the projects' tasks before the  
14 end of December, making it almost impossible to undo the effects of these ill-conceived projects.  
15 And if the Work Plan pre-determines the future, how much more of a concrete injury is carrying  
16 out the Project Work Schedule, in compliance with the AOC? How very true that it "**is now or  
17 it is never.**" *Idaho Conservation League v. Mumma*, 956 F.2d 1508 at 1516 (9<sup>th</sup> Cir. 1992).

19 Here, the violation of NEPA and the failure to provide any EIS and incorporate the  
20 essential function of public participation has had more traumatic effects, and critically immediate  
21 impact, than generally occurs from the injury of violating NEPA statutes.

23 To this very day, the EPA has not required the COHDEM to follow the NEPA procedural  
24 statutes which require an EIS be developed early and accompany the COHDEM and EPA  
25 decision-making. Lacking any environmental review process, COHDEM had no opportunity for  
26 any community input for guidance, resulting in the unacceptable proposal that placed a full-  
27 sized, newly built secondary sewage treatment plant with four open sewage lagoons right beside  
28

1 an elementary school, an unexamined action that COHDEM thought was such an optimal  
2 decision that they had begun condemnation in violation of their own County regulations.

3 Ironically, the County has not even complied with the extended time for public  
4 participation in their Project Schedules that EPA agreed to in June 2018. The Naalehu Work  
5 Plan promised EPA the "Second Round Outreach B&C and County" was to have "Finished" by  
6 8/4/18, with a "Final Round Outreach" 12/23 to 12/27/18. No "outreach" occurred on 8/4/2018.<sup>1</sup>

8 If the EPA is not enjoined, as Plaintiff has requested of this Court, to provide NEPA  
9 procedural environmental review of the two Ka'u WWTP Projects, the EPA will continue to act  
10 unchecked with no transparency for citizens. The Court is requested to dismiss the Defendants'  
11 motion and allow this case to move forward.

14 Dated: October 2, 2018 at Naalehu, Hawaii.

15 Plaintiff:

17 /Sandra Lee Demoruelle

18 SANDRA LEE DEMORUELLE, *Pro Se*

25  
26 <sup>1</sup> 40 CFR 25.11(b)(2) [At minimum the assisted agency work plan shall include:] "A  
27 proposed schedule for public participation activities to impact major decisions,  
28 including consultation points where responsiveness summaries will be prepared."

1 CV18-00172 JMS-KSC

2 CERTIFICATE OF SERVICE

3 I HEREBY CERTIFY THAT, on this date and by the method of service noted below, a true and  
4 correct copy of the Plaintiff's Opposition and Memorandum of Opposition was served on the  
5 following at their last known address:

6 Served via U.S. Mail

7 Andrew Wheeler  
8 U.S. EPA Acting Administrator  
9 1200 Pennsylvania Ave, NW, Washington DC 20460

10 Michael Stoker  
11 U.S. EPA Region 9 Administrator  
12 U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105

13 Kathleen H. Johnson  
14 Director, Enforcement Division  
15 U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105

16 Kate Rao  
17 LCC Project Coordinator  
18 Drinking Water Protection Section (WTR 3-2)  
19 U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105

20 Simi Baht  
21 Trial Attorney  
22 Environmental Defense Section, Environment and Natural Resources Division  
23 U.S. Department of Justice  
24 301 Howard St. Ste 1010, San Francisco, CA 94105

25 Kenji M. Price  
26 United States Attorney, District of Hawaii  
27 Michael Albanese  
28 Assistant U.S. Attorney  
Room 6-100, 300 Ala Moana Boulevard, Honolulu HI 96850

DATED: October 2, 2018 in Naalehu, Hawaii

/Sandra Lee Demoruelle

SANDRA LEE DEMORUELLE, *Pro Se*



10349-01  
March 6, 2020

ref (16)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 3, 2018 8:17 a.m.

Dear Ms. Demoruelle:

Thank you for your October 3, 2018 8:17 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The explanation given at the meeting pertained to Hawaii Administrative Rules (HAR) Title 11 Chapter 200-9.1 **Public review and response requirements for draft environmental assessments for anticipated negative declaration determination and addenda to draft environmental assessments.** HAR 11-200-9.1(b) states that the "period for public review and for submitting written comments for both agency actions and applicant actions shall begin... Written comments to the proposing agency... shall be received or postmarked... (emphasis added). While there is no provision for receiving oral comments in the rules, the facilitator offered assistance by persons available at the meeting to put any oral comments attendees might wish to offer into writing.

HAR 11-200 has no requirement for conducting a public meeting in conjunction with preparing an environmental assessment. The meeting was voluntarily sponsored by the County of Hawaii Department of Environmental Management (DEM) to encourage public participation in the environmental review process.

Hawaii Revised Statutes (HRS) Chapter 343 Section 5 (a)(9)(A), states as follows: "(a) Except as otherwise provided, an environmental assessment (emphasis added) shall be required for actions that: ... (9) Propose any: (A) Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent...". HAR Title 11, Chapter 200, which implements HRS Chapter 343, however, differentiates between "agency actions" that utilize state or county lands or funds and "applicant actions" for which an applicant must seek agency approval. Since the proposed action will utilize county lands and funds, it is an "agency action" requiring compliance with HRS Chapter

10349-01

Letter to Ms. Sandra Demoruelle

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343 and HAR Title 11, Chapter 200, pursuant to which an environmental assessment is being prepared and processed.

HRS 343-5 **Applicability and requirements** states under (c) (4) A(n environmental impact) statement shall be required if the agency finds that the proposed action may have a significant effect on the environment..." The criteria by which the proposing agency makes the significance determination is provided in Hawaii Administrative Rules (HAR) Title 11 Section 200-12 (a) and (b) which states:"(a) In considering the significance of potential environmental effects, agencies shall consider the sum of the effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action. (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences,... and the...effects of the action.

HAR 11-200-10 **Contents of an environmental assessment** includes "(9) Findings and reasons supporting the agency determination or anticipated determination..." The Draft EA provides this in Chapter 8 Findings and Determination. Neither HRS Chapter 343 nor HAR Title 11, Chapter 200 contain any requirement that all proposed wastewater systems require an EIS.

The reference to "twin projects less than 11 miles apart, should be considered together" apparently refers to the proposed wastewater treatment plant to serve the Naalehu community. HAR 11-200-7 **Multiple or phased applicant or agency actions** states that "A group of actions proposed by an agency or an applicant shall be treated as a single action when (1) The component actions are phases or increments of a larger total undertaking, (2) An individual project is a necessary precedent for a larger project; (3) An individual project represents a commitment to a larger project; or (4) The actions in question are essentially identical and a single statement will adequately address the impacts of each individual action and those of the group of actions as a whole." The wastewater projects at Pāhala and Naalehu are not phases or increments of a larger total undertaking, are not precedents or commitments for a larger project, nor are they identical. Hence, there is no requirement to consider them in a single environmental review document.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

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Letter to Ms. Sandra Demoruelle

Page 3

March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#17

Earl Matsukawa

From: Naalehu Theatre <naalehuthatre@yahoo.com> woc oct19-2018  
 Sent: Saturday, October 6, 2018 9:00 AM  
 To: kaena.horowitz@hawaiicounty.gov; Dora Beck; William Kucharski  
 Cc: Bhat Simi (ENRD); Albanese, Michael (USAHI); TESSA BERMAN; Kate Rao;  
 clekven@brwncald.com; eplan1@aol.com; Earl Matsukawa;  
 iconstantinescu@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
 braden.rosenberg@erg.com; Public Comment; John Sakaguchi  
 Subject: Courtesy copy of Opposition to MTD  
 Attachments: COH\_Opposition\_MTD\_October\_4\_2019.doc; EPA\_Opposition\_MTD\_September\_28\_2018.doc; 2018\_EPA\_EIS\_Second\_Amended\_complaint - Final.docx; NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT.docx; COH\_MOTIONPL\_AUG\_2018.docx

Aloha kakou,

Since the Third Cir.hearing will consider the Preliminary Injunction which would cancel all activity by Contractors since they have done such a bad job - and stop all payments for the upcoming week of DEA activities - you might want to consider a settlement at this point in time.

As well, y'all might want to consider the multi-million \$\$,\$\$\$,\$\$\$ on-going personal injury claim awaiting filing because you are continuing to torture me with the Pahala meetings!!!

Best, Sandra Demoruelle

This message has been scanned for viruses and dangerous content using Worry-Free Mail Security, and is believed to be clean. [Click here to report this message as spam.](#)



10349-01  
March 6, 2020

ref (17)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 6, 2018 9:00 a.m.

Dear Ms. Demoruelle:

Thank you for your October 6, 2018 9:00 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follows:

This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#18

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**Sent:** Wednesday, October 10, 2018 10:50 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan;  
iconstantinescu@brwncald.com; John Sakaguchi; Bhat Simi (ENRD); TESSA BERMAN;  
eplan1@aol.com; kaena.horowitz@hawaiicounty.gov; Joe Kamelamela; Bob Martin;  
Albanese Michael (USAHI); David Albright; Linda Morgan; Ka'u Calendar News; The Ka'u  
Calendar Newspaper and Daily News Briefs; Nancy Cook Lauer; mail@environment-  
hawaii.org; Shannon Rudolph  
**Subject:** Failure to provide copies of the Pahala DEA at the meeting!!!  
**Attachments:** Talk story report\_Bernadette\_Senelly.txt

woc oct19-2018

Dear Mr. Matsukawa,

The Pahala DEA meeting tonight was held without the aforementioned DEA volume present to consult.

It was like having a Bible study class without any Bibles!

Was I the only person in the room who has actually read the meager DEA offerings? I mean 21 blank pages and untold repetition makes about 50 real pages to read. But to read it, you have to have a real live volume of the DEA to read. None were present at the DEA meeting????!!!

But not to worry! You will have hundreds of pages of comments to add bulk to your FEA - which will have yet another law suit since you did not go direct to EIS like ALL HAWAII WWTPS DO. Name one project without an EIS?!!!

And you could very well lose your prelim inj. and no one will be paid for the meeting I so enjoyed tonight. But then, I didn't get paid, either.

Best, Sandra Demoruelle

On Monday, October 1, 2018 10:40:37 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
S/ Sandra Demoruelle  
SANDRA DEMORUELLE

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs. let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiros, when her name is listed on the COH website as "Maile Medeiros David."**

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

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5 Email: naalehutheatre@yahoo.com

Civil No. 18-1-00206  
Environmental Court

7 **IN THE CIRCUIT COURT OF THE THIRD CIRCUIT**  
8 **STATE OF HAWAII**

9 SANDRA L. DEMORUELLE, <i>Pro Se</i>	)	
	)	
10 PLAINIFF	)	MEMORANDUM OF LAW
	)	IN SUPPORT OF PLAINTIFF'S
11 - v. -	)	OPPOSITION TO DEFENDANTS'
12 DORA BECK, P.E. et al.	)	MOTION TO DISMISS COMPLAINT;
	)	CERTIFICATE OF SERVICE
	)	
13 DEFENDANTS	)	Hearing Date: October 25, 2018
	)	Time: 8:30 a.m.
14	)	Judge: Honorable Greg K. Nakamura
15	)	

16  
17 **MEMORANDUM OF LAW IN SUPPORT OF PLAINTIFF'S OPPOSITION TO**  
18 **DEFENDANTS' MOTION TO DISMISS COMPLAINT**

19  
20 Plaintiff *pro se*, Sandra L. Demoruelle, respectfully submits its opposition to  
21 Defendants' Motion to Dismiss the Complaint. The Plaintiff's Complaint not only meets  
22 but exceeds the standards governing the form of a complaint as required by the Hawaii  
23 Rules of Civil Procedure 8(a). Specifically, this Court has personal jurisdiction over the  
24 Defendants, and the Complaint sufficiently alleges causation and harm. Accordingly,  
25 Defendants' motion should be denied.  
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1 **I. INTRODUCTION**

2 Plaintiff alleges that the County of Hawaii Department of Environmental  
 3 Management (“COHDEM”) through its officers, Dora Beck, P.E., Division Chief of the  
 4 Wastewater Division and Director William A. Kucharski, has “[p]urposely or not”<sup>1</sup> failed  
 5 to take an environmental “hard look”<sup>2</sup> at their proposals for building two municipal  
 6 secondary sewage treatment plants, with one sited adjoining the Naalehu Elementary  
 7 School, in the District of Ka’u, so, therefore, Plaintiff is entitled to judgment as a matter of  
 8 law.  
 9

10 **II. ARGUMENT**

11 **A. Standard of Review of COHDEM Decision not to Publish the Naalehu DEA**

12 The Plaintiff, in Count 4, attempts to state that the Environmental Protection Agency  
 13 (“EPA”) and COHDEM conspired to evade National Environmental Policy Act (“NEPA”)  
 14 applicability to the Naalehu Administrative Order on Consent (“AOC”) Work Plan by  
 15 transferring the NEPA-triggering funding to the Pahala AOC Work Plan on May 30, 2018 after  
 16 Plaintiff filed US District Court, District of Hawaii (“HID”) CV 18-00172 JMS-RSC on May 10,  
 17 2018. The HID CV18-00172 JMS-RSC Def. Ex. 7 “Assistance Amendment” [XP-96942401-7]  
 18 that caused harm to the Plaintiff by “the shift[ing] of project location from Naalehu to Pahala”  
 19 and allocating the EPA funding, with concurrent NEPA/cross-cutting obligations, “only to the  
 20 ‘Construction-Wastewater Treatment and Disposal System’ task in the approved Pahala  
 21 Community Large Capacity Cesspools Replacement Project work plan,” thereby avoiding any  
 22 NEPA/crosscutting procedures for the Naalehu Work Plan and causing the Plaintiff concrete  
 23

24 <sup>1</sup> *Sierra Club v. Department of Transport (Superferry I)*, 167 P.3d 292, 335  
 25 (2007).  
 26 <sup>2</sup> *Id.* (citing *Price v. Obayashi Haw. Corp.*, 81 Haw. 171, 182 n. 12, 914 P.2d  
 27 1364, 1375 n. 12(1996)(citation omitted)).  
 28



1 injuries. The Plaintiff claims that the Defendants are proceeding in violation of NEPA 42 USC  
2 Sec. 4321 *et seq.* and HEPA HRS 343 *et seq.* because no environmental impact statement for the  
3 Naalehu Large Capacity Cesspool (“LCC”) Closure Project has been prepared and submitted as  
4 required by NEPA and Hawaii environmental review statutes.

5  
6 Because the COHDEM environmental review decision for the Naalehu AOC Work Plan  
7 involved a threshold question of NEPA applicability, the “reasonableness” standard should apply  
8 to this agency decision. *Ka Makani o Kohala Ohana Inc. v. COH Water Supply*, 295 F.4d 955  
9 (9<sup>th</sup> Cir. 2002); *Northcoast Environmental Center v. Glickman*, 136 F.3d 667 (9<sup>th</sup> Cir. 1998)  
10 (which held that the “reasonableness” standard should apply where the agency decision involved  
11 a threshold question of NEPA applicability); *see Kern v. USBLM*, 284 F.3d 1062, 1070 (9<sup>th</sup> Cir.  
12 2002); *see also Price Rd. Neighborhood Association v. USDOT*, 113 F.3d 1505, 1508 (9<sup>th</sup> Cir.  
13 1997) (recognizing that two standards govern the review of agency actions involving NEPA: the  
14 arbitrary and capricious standard for predominantly factual or technical disputes and the  
15 reasonableness standard for primarily legal disputes).

16  
17  
18 **B. Defendants’ Lack of Jurisdiction HRCF 12(b)(1) Allegation**

19 The relief Plaintiff seeks is based “on HRS Sections 603-21.5 (1993) (general jurisdiction  
20 of the circuit courts) and 632-1 (1993) (declaratory judgments).” *Citizens for the Protection of*  
21 *the North Kohala Coastline et al. v. COH*, 91 Hawaii 94 (1999); 979 P.2d 1120.

22  
23 **I. The Naalehu Wastewater System EA “is not due yet”**

24 In speaking of the COHDEM, its Director Kucharski stated that over the past fifteen  
25 years, his Department “have failed miserably in doing their duty to the environment and local  
26

1 residents.”<sup>3</sup> The duty owed the environment, the Ka’u community in general, and the Plaintiff  
2 individually, was to provide environmental review of the County wastewater infrastructure  
3 projects aimed at closing County-owned Large Capacity Cesspools in Pahala and Naalehu.

4  
5 The reason the Defendants give for failure to provide the “Naalehu Environmental  
6 Assessment,” (“EA”) publicly referred to in the EPA Administrative Order on Consent (Def. Ex.  
7 A) Naalehu Work Plan dated April 21, 2017 (Def. Ex. C), and a County press release of June  
8 2018 published in *The Ka’u Calendar*, is because [the Naalehu EA] “is not scheduled to be due  
9 until a future date.” Def. Motion to Dismiss (“MTD”) Page 2. Defendants further opine “nothing  
10 in HRS 343 compels Defendants to do otherwise...” Def. MTD Memorandum Page 4.

11  
12 Plaintiff would argue against those conclusions: the AOC (Def. Ex. A Paragraph 64)  
13 itself states that “[c]ompliance with this Consent Order shall not be a defense to any actions  
14 commenced pursuant to applicable laws, regulations, or permits, nor does it constitute a release.”  
15 If it were otherwise, the COHDEM original timelines requiring acquisition of the County’s  
16 preferred sites in Naalehu and Pahala before any EA/EIS was completed would not have needed  
17 the revision approved in Def. Ex. B, said to be needed to accommodate the HRS 343, as cited to  
18 Director Kucharski on Page 1 Paragraph 2 of Ex. B.

19  
20 If the AOC did not constitute a release for the purchase of the chosen site land prior to  
21 environmental review, the AOC cannot constitute a release from any other HRS 343  
22 requirement, including denying the requirement for an “early hard look.”  
23

24  
25  
26  
27 <sup>3</sup> The full quote is: “The cesspools were to have been closed by 2005, and they  
28 have failed miserably in doing their duty to the environment and local  
residents.” COH Environmental Management Committee Meeting Minutes, 4/25/18,  
Page 13.

1 Thus, Defendants have a misplaced reliance on the AOC timeline, as cited in the Motion  
2 to Dismiss Memorandum Page 3, to avoid HRS 343 procedural requirements for production of  
3 an early determination whether or not to do a HEPA EIS and notice/publication of an EA/EIS.

4  
5 **2. HEPA<sup>4</sup> Statutes require "Early" Environmental Review**

6 The central question in this case is not whether the Pahala and Naalehu Wastewater  
7 Treatment Unit Administrative Order on Consent Work Plans are "actions" subject to the  
8 procedural environmental review provisions of HEPA and NEPA as Defendants have published  
9 the joint HEPA/NEPA Pahala Draft Environmental Assessment ("DEA") in *The Environmental*  
10 *Notice* ("TEN") September 23, 2018, and state in Defendants' MTD that they "fully intend to  
11 produce the [HEPA-only] Naalehu EA ..." at an unspecified point in time in the future. Indeed,  
12 as applies to all State and County agencies, COHDEM is compelled to follow HEPA statutes  
13 when, as in this case, "[a]n environmental assessment under HEPA is required if three conditions  
14 are satisfied: (1) the proposed activity is an 'action' under HRS 343-2 (2010); (2) the action  
15 proposes one or more of the nine categories of land uses or administrative acts enumerated in  
16 HRS 343-5(a) (2010); and (3) the action is not declared exempt pursuant to HRS 343-6(a)(2)  
17 (2010). See *Sierra Club v. Department of Transportation of the State of Hawaii*, 115 Hawaii  
18 299, 306, 167 P.3d 292, 299 (2007) as cited in *Umberger et al. v. DLNR*, SCWC 13-002125  
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<sup>4</sup> Although "HRS chapter 343 is entitled 'Environmental Impact Statements,' the law has long been referred to, by the public and [appellate]court[s], as the Hawai'i Environmental Policy Act." *Sierra Club v. Department of Transportation of the State of Hawaii*, 115 Hawaii 299, 304, 167 P.3d 292, 297 (2007) as cited in *Umberger et al. v. DLNR*, SCWC 13-002125 (2017), No. CAAP-13-002125, 382 P.3d 320 (2016).

1 consideration in decision making along with economic and technical considerations." *Id.* See  
2 *Nuuuu Valley Association v. City and County of Honolulu*, 119 Hawaii 90, 103, 194 P.3d 531,  
3 544 (2008) quoting HRS 343-1. These "environmental concerns" have not been identified for  
4 the Naalehu Work Plan (AOC Attachment B) which places a municipal sewage treatment plant  
5 (see HRS 343-5(a)(9A) for the "triggering" "action" of a "wastewater treatment unit") adjoining  
6 the Naalehu Elementary School with no environmental review procedures. (See *Complaint*  
7 *Attachment A* illustrating the proposed COHDEM "action" sited adjoining Naalehu School).

8  
9 The proper time for production of the Naalehu DEA is the question presented by the  
10 instant facts: is the COHDEM in violation of HEPA by withholding the current Naalehu DEA,  
11 first described as "updated" in November 2013 per information on Page 2 of the AOC  
12 Attachment B Naalehu Work Plan, and which received community "concerns/objections" during  
13 2013 and 2014? According to the COHDEM Naalehu Work Plan, the "revised draft EA" was to  
14 have "been issued for public review and comment" as soon as the "informational community  
15 outreach" was completed in April 2018.

16  
17  
18 The Supreme Court of Hawaii states:

19  
20 Requiring early environmental assessment of the [Naalehu] project  
21 comports with HRS 343-5(c)'s express mandate that environmental review  
22 be undertaken at the "earliest practicable time." This result also finds  
23 support in the spirit and intent of HEPA to "establish a system of  
24 environmental review which will ensure that environmental concerns are  
25 given appropriate consideration in decision making along with economic  
26 and technical considerations... [and] alert decision makers of significant  
27 environmental effects which may result from the implementation of  
28 certain actions. HRS 343-1 (1993).

29  
30 Consonant with these policies, both federal and state courts have  
31 recognized that environmental review must occur early enough to function  
32 practically as an input into the decision making process. In construing the  
33 National Environmental Policy Act (NEPA), for example, the United  
34 States Court of Appeals for the Ninth Circuit cautioned that "[a]n  
35 assessment must be 'prepared early enough so that it can serve practically

1 as an important contribution to the decision making process and will not  
2 be used to rationalize or justify decisions already made.” *Save the Yaak*  
3 *Committee v. J.R. Block*, 840 F.2d 714, 718 (9<sup>th</sup> Cir. 1987) (quoting 40  
4 CFR 1502.5 (1987)). It further stated that federal agencies are required to  
5 “integrate the NEPA process with other planning **at the earliest possible**  
6 **time** to insure that planning and decisions reflect environmental  
7 values....” *Id.* (emphasis added) (citing *Andrus v. Sierra Club*, 442 U.S.  
8 347, 351, 99 S. Ct. 2335, 60 L.Ed.2d 943 (1979) (citations omitted), and  
9 *California v. Block*, 690 F.2d 753, 761 (9<sup>th</sup> Cir. 1982)). According to the  
10 J.R. Block Court, “[t]he rationale behind this rule is that inflexibility may  
11 occur if delay in preparing an EIS is allowed: “After major investment of  
12 both time and money, it is likely that more environmental harm will be  
13 tolerated.” *Id.* (quoting *Confederated Tribes and Bands of the Yakima*  
14 *Nation v. FERC*, 746 F.2d 466, 371-72 (9<sup>th</sup> Cir. 1984) (citation omitted).  
15 *See also Sierra Club v. Peterson*, 717 F.2d 1409, 1414 (D.C.Cir.1983)  
16 (“the EIS is a decision-making tool intended to insure that ...  
17 environmental amenities and values may be given appropriate  
18 consideration in decisionmaking....” Therefore, the appropriate time for  
19 preparing an EIS is prior to a decision, when the decisionmaker retains a  
20 maximum range of options.”) *Citizens for the Protection of the North*  
21 *Kohala Coastline et al. v. COH*, 91 Hawaii 94 (1999); 979 P.2d 1120,  
22 1130, 1131.

23 The Defendant, COHDEM Director William Kucharski, on the other hand, failed to do an  
24 “early” EA or EIS on the Naalehu Project because he cannot decide on his preferred site.  
25 Director Kucharski prefers using the EA as a rationalization for his pre-chosen alternative. As he  
26 says: “*you have to go through a justification as to how you got to that preferred site. And that is*  
27 *the process.*”

28 In addition, NEPA has similar procedural requirements to HEPA and concrete injuries  
result when agencies violate NEPA statutes. “To the extent that the [Work] [P]lan pre-determines  
the future, it represents a **concrete injury** that plaintiffs must, at some point, have standing to  
challenge. **That point is now or it is never.**” [emphasis added.] (*Idaho Conservation League v.*  
*Mumma*, 956 F.2d 1508 at 1516 (9<sup>th</sup> Cir. 1992)); and in *Ohio Forestry Association v. Sierra*  
*Club*, 523 U.S. 726 (1998) the Supreme Court stated: “Hence a person with standing who is  
injured by a failure to comply with the NEPA procedure may complain of that failure at the time  
the failure takes place, for the claim can never get ripier.”)

1 **3. Future Naalehu EA for purpose of COHDEM rationalization and justification**

2 By waiting thirteen years to even begin preparation of the requisite “early”  
3 environmental review documents, the agencies are merely rationalizing and justifying their  
4 decisions which have been and are currently being made without any consideration of the  
5 environmental effects. EPA has shown that it failed to grasp the fact that environmental review  
6 laws are “procedural” by allowing COHDEM Director Kucharski to determine that an EA  
7 cannot even be started for the pre-determined wastewater treatment projects until the County  
8 has done site-specific environmental studies, which is after the fact rationalization. Word-for-  
9 word, Director Kucharski said: “*In an EA you come up with a preferred alternative, and that*  
10 *preferred alternative is what all of the environmental studies and impacts are centered around.*  
11 *And you have to go through a justification as to how you got to that preferred site. And that is*  
12 *the process.*” Director Kucharski statement in the County of Hawaii Environmental  
13 Management Commission meeting minutes of June 27, 2018 [approved as presented July 26,  
14 2018], Page 26.

15 The Defendants suggest that adjudication of the Plaintiff’s procedural challenge at this  
16 point is improper because a future site-specific EA/EIS might eliminate the concrete injury the  
17 Plaintiff has endured because of on-going COHDEM procedural HEPA violations and render  
18 this adjudication unnecessary. (“[Defendant] suggests adjudication of [the] challenge at this  
19 point is improper because future project-specific consultations might result in mitigation or  
20 elimination of any potential harm to [Plaintiff], thus rendering adjudication unnecessary. We  
21 conclude, however, that [Plaintiff’s] lawsuit is ripe for adjudication.” *Cottonwood*  
22 *Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015)).  
23  
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1 A procedural dispute, such as the case in question, is ripe "at the time the [procedural]  
2 failure takes place." When a party suffers a procedural injury, it "may complain of that failure  
3 at the time the failure takes place, for the claim can never get riper." See *Ohio Forestry*  
4 *Association v. Sierra Club et al.*, 523 U.S. 726, 737 (1998); see also "The imminence of project-  
5 specific implementation "is irrelevant to the ripeness of an action raising a procedural injury."  
6 *Citizens for Better Forestry v. USDA*, 341 F.3d 961, 977 (9<sup>th</sup> Cir. 2003) as cited in *Cottonwood*  
7 *Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015). "This dispute  
8 needs no additional factual development because the procedural injury has already occurred."  
9  
10 *Id.*

13 **C. Defendants' Failure to State a Claim HRCF 12(b)(6) Allegation**

14 Plaintiff's Complaint properly alleged causation and damages and Plaintiff seeks  
15 declaratory and injunctive relief to protect Plaintiff's interests at law, especially its interests that  
16 the COHDEM comply with the HEPA regulatory requirements, Hawaii Revised Statutes 343 *et*  
17 *seq.* Based on the COHDEM failure to provide public participation leading to failure to receive  
18 any public input into any environmental review of the proposed projects, Plaintiff seeks a  
19 declaratory judgment, injunctive relief, the award of costs of suit, and other such relief as this  
20 Court deems just and proper.

23 **I. "Immunity from liability" from Disclosure under UIPA Defense**

24 Under Uniform Information Practices Act HRS 92F *et seq.*, on May 3, 2018, Plaintiff  
25 requested, *inter alia*,<sup>5</sup> the COHDEM record of the Naalehu Draft Environmental Statement that

28 <sup>5</sup> The COHDEM denied in its entirety (although acknowledging the agency maintains the requested records) the Plaintiff's records request for the following 92F-12(6) (Results of environmental tests) which are records

1 Plaintiff read about in the AOC Attachment B, the Naalehu WWS Work Plan on Page 3, and  
2 again when it was publicly announced in a County press release printed in the local monthly  
3 newspaper, *The Ka'u Calendar*, June 2018. Plaintiff contends that this public discussion of the  
4 Naalehu DEA environmental review document waived any protection of privilege under HRS  
5 92F-13(3) (*see OIP OP. Ltr. No. 91-22*, November 25, 1991).

7 The COHDEM provided a *Notice to Requestor* denying Plaintiff's requested  
8 environmental test records because they were exempted under HRS 92F-13(3) because these  
9 records were "Land acquisition information identifying or pertaining to real property under  
10 consideration for future public acquisition." Since the COHDEM has belatedly acknowledged  
11 (*see* Def. Ex. B) that they could not "acquire" their chosen municipal sewage treatment plant  
12 sites before they had completed a FEA or FEIS, the documents so labelled as subject to the "land  
13 acquisition" 92F-13(3) exemption claimed for the Naalehu DEA are actually environmental  
14 review records that must be made transparently available to inquiring public citizens, including  
15 the instant Plaintiff. (*See* HRS 343-3 (a) *Public records and notice* All statements,  
16 environmental assessments, and other documents prepared under this chapter shall be made  
17 available for inspection by the public during established office hours.)

20 Plaintiff alleges in Count 1 that the COHDEM are withholding the "Naalehu DEA" that  
21 was lawfully requested on May 3, 2018 and requests the Court decision on that factual  
22 allegation, not on the "liability" of the COHDEM staff for the act of withholding requested

26 maintained by COHDEM: Pahala Complete Phase I Environmental Site Assessment  
27 (ESA) and Preliminary Engineering Report (PER) and the Complete Phase I ESA  
28 for Naalehu LCC closure project, along with the Naalehu DEA. Under FOIA requests to EPA, Plaintiff received the other requested records, but EPA could not supply the Naalehu DEA, so aggrieved by the denial of access, Plaintiff has filed this instant suit under HRS 92F-15 for judicial enforcement to compel disclosure.

1 records as the Defendants plead they are “Immune From Liability For Non-Disclosure Of The  
2 Draft Of The Naalehu EA, Pursuant to HRS Sec. 92F-16.” (Def. MTD Page 5, Section II. A.).

3 Plaintiff is seeking judicial enforcement (HRS 92F-15) within two years of the June 5,  
4 2018, date when Plaintiff was aggrieved by Defendants’ COHDEM denial of access to any of the  
5 requested government records that they admit they maintain within their agency, and Plaintiff is  
6 requesting the Court to compel disclosure of the Naalehu DEA.

7  
8 **2. Allegation of Failure to State Claim in Count # 4**

9 The original EPA-County of Hawaii Grant Agreement XP-96942401 dated September  
10 20, 2005, was for the singular “Kau Cesspool Replacement Project” for the “design and  
11 construction of wastewater system improvements in Naalehu and Pahala in the Kau district of the  
12 Big Island of Hawaii.”

13 As stated in the original Grant Agreement, the EPA-assisted project “involves  
14 replacement of sewer lines ...., installation of community septic tank systems and elimination of  
15 5 large capacity cesspools.” The Naalehu and Pahala LCCs, being geographically located 11  
16 miles apart in the remote, sparsely populated District of Kau, were initially treated as a single  
17 project with COHDEM having the sole responsibility to comply with HEPA statutes and HAR  
18 regulations since 2005.

19 After Plaintiff filed its US District Court, District of Hawaii (“HID”) Complaint on May  
20 14, 2018,<sup>6</sup> on May 30, 2018, Defendants and the EPA entered into an “Assistance Amendment”  
21 [XP-96942401-7] that caused harm to the Plaintiff by “the shift[ing] of project location from  
22 Naalehu to Pahala” and allocating the EPA funding, with concurrent NEPA/cross-cutting  
23 obligations, “only to the ‘Construction-Wastewater Treatment and Disposal System’ task in the  
24 approved Pahala Community Large Capacity Cesspools Replacement Project work plan,”  
25 thereby avoiding any NEPA/crosscutting procedures for the Naalehu Work Plan and causing the  
26 Plaintiff concrete injuries. The Plaintiff claims that the Defendants are proceeding in violation  
27

28 <sup>6</sup> HID CV 18-00172 JMS-RSC with hearing scheduled for Def. MTD on November 29,  
2018.

1 of NEPA 42 USC Sec. 4321 *et seq.* and HEPA 343 *et seq.* because no environmental impact  
2 statement for the Naalehu and Pahala LCC Closure Project has been prepared and submitted as  
3 required by NEPA and Hawaii environmental review statutes. Defendants have failed their duty  
4 to provide environmental assessment of whether the “wastewater treatment unit” may have a  
5 significant effect (HRS 343-2) and consider the cumulative effects of two new-build municipal  
6 secondary wastewater treatment plants planned to service under 170 households at each site,  
7 projects which further have the geographic and common timing that require EPA “to treat them  
8 in a single impact statement.” 40 CFR 1508.25 (3).

9 Plaintiff argues that “by failing to prepare an [EA/EIS] the defendants eliminated the  
10 public’s right to participate.” *City of South Pasadena V. Slater*, 56 F.Supp.2d 1106 (C.D.Cal.  
11 1999). “When substantive judgments are committed to the very broad discretion of an  
12 administrative agency, procedural safeguards that assure public access to the decisionmaker  
13 should be vigorously enforced.” *Western Oil & Gas v. EPA*, 633 F.2d 803, 813 (9<sup>th</sup> Cir.1980).

14 By failing to file the Naalehu DEA Notice with the Office of Environmental Quality  
15 Control pursuant to HAR 11-200-11.1, “there was no date from which to measure the thirty  
16 day limitation prescribed by Sec. 343-7(b) and 343-7(b) was thus inapplicable...” *Unite Here!*  
17 *Local 5 v. City and County of Honolulu*, 123 H. 150, 231 P.3d 423 (2010). Violation of HRS  
18 343 requirements to file public notice of the Naalehu DEA has thus deprived the Plaintiff and  
19 other members of the community from obtaining timely judicial review of the Defendants’  
20 procedural failures.

21 Further, lacking an EA/EIS, there is no “sound basis” for all the past and current  
22 COHDEM environmental test studies memorialized in the withheld Pahala Complete Phase I  
23 Environmental Site Assessment (ESA) and Preliminary Engineering Report and the Complete  
24 Phase I ESA for Naalehu LCC closure project – and ongoing studies without an EA/EIS to  
25  
26  
27  
28

1 "provide a sound basis for investigation..." *Sierra Club v. Froehle*, 630 F. Supp. 1215, 1227  
2 (S.D.Tex. 1986).

3  
4  
5 **III. CONCLUSION**

6 For the reasons stated above, this Court should deny the Defendants' motion for  
7 dismissal. Having failed their duty to follow HEPA statutes by not providing environmental  
8 review for thirteen years, now the Defendants have threatened the Naalehu community with a  
9 horrendous sewage project adjoining the elementary school, and even taken action to condemn  
10 the property.

11  
12 Every day causes more injury to the Plaintiff and the affected Ka'u community.

13 The COHDEM has a commitment to completing 90% of the projects' tasks before the  
14 end of December, making it almost impossible to undo the effects of these ill-conceived projects.  
15 And if the Work Plan pre-determines the future, how much more of a concrete injury is carrying  
16 out the Project Work Schedule, in compliance with the AOC? How very true that it "**is now or  
17 it is never.**" *Idaho Conservation League v. Mumma*, 956 F.2d 1508 at 1516 (9<sup>th</sup> Cir. 1992).

18  
19 Here, the violation of HEPA and the failure to provide any EIS and incorporate the  
20 essential function of public participation has had more traumatic effects, and critically immediate  
21 impact, than generally occurs from the injury of violating HEPA statutes.

22  
23 To this very day, the COHDEM has not followed the HEPA procedural statutes HRS 343  
24 Sec. 5(a)(9) citing wastewater systems as "triggers" which require an EIS be developed early and  
25 accompany the project through the COHDEM and EPA decision-making processes. Lacking the  
26 legal environmental review process, COHDEM had no opportunity for any community input for  
27 guidance, resulting in the unacceptable proposal that placed a full-sized, new-build municipal  
28

1 secondary sewage treatment plant with four open sewage lagoons right beside an elementary  
2 school, an unexamined action that COHDEM thought was such an optimal decision that they had  
3 begun land condemnation in violation of their own County regulations.

4  
5 Ironically, the County has not even complied with the extended time for public  
6 participation in their Project Schedules that EPA agreed to in June 2018. The Naalehu Work  
7 Plan promised EPA the "Second Round Outreach B&C and County" was to have "Finished" by  
8 8/4/18, with a "Final Round Outreach" 12/23 to 12/27/18. No "outreach" occurred on 8/4/2018  
9 so the Defendants' allegation that the Plaintiff would have these "time[s] to meaningfully  
10 participate in commenting and opposing the development of this infrastructure project" was  
11 false, thereby adding to her on-going concrete injuries.

12  
13 If the COHDEM is not enjoined, as Plaintiff has requested with a Preliminary Injunction  
14 to provide HEPA procedural environmental review of the twin wastewater systems, the County  
15 will continue to act unchecked with no transparency for citizens and no EA/EIS to guide agency  
16 decisions.

17  
18 For the foregoing reasons and all the others discussed in Plaintiff's Complaint, the  
19 present Motion to Dismiss should be denied and this case be allowed to move forward with  
20 immediate consideration of Plaintiff's Motion for Preliminary Injunction.

21  
22  
23 Dated: October 4, 2018 at Naalehu, Hawaii.

24 Plaintiff:

25  
26 SANDRA LEE DEMORUELLE, *Pro Se*  
27  
28

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT, on this date and by the method of service noted below, a true and correct copy of the Plaintiff's Opposition to Defendants' Motion to Dismiss were served on the following at their last known address:

Served via postage pre-paid U.S. Mail.

Dora Beck, P.E.  
Division chief, Wastewater Division  
County of Hawaii Department of Environmental Management  
108 Railroad Avenue  
Hilo, Hawaii 96720  
Fax: 961-8644

William A. Kucharski  
Director, County of Hawaii Department of Environmental Management  
345 Kekuaanoa Street, Suite 41  
Hilo, Hawaii 96720  
Fax: 961-8086

Corporation Counsel  
101 Aupuni Street Unit 325  
Hilo Hawaii 96720  
Fax: 961-8622

Dated: October 4, 2018 at Naalehu, Hawaii

SANDRA LEE DEMORUELLE, *Pro Se*

Sandra Lee Demoruelle  
PO Box 588  
Naalehu HI 96772-0588  
Ph. 808-929-9244  
Email: naalehutheatre@yahoo.com

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF HAWAII

CASE NO. CV 18-00172 JMS-KSC

SANDRA LEE DEMORUELLE, <i>Pro Se</i>	)	PLAINTIFF'S
PLAINTIFF	)	MEMORANDUM OF
	)	POINTS OF LAW AND
v.	)	AUTHORITIES IN OPPOSITION
ANDREW WHEELER, et al.	)	TO DEFENDANTS' MOTION
	)	TO DISMISS; CERTIFICATE OF
DEFENDANTS	)	SERVICE
	)	
	)	Hearing Date: Oct. 29, 2018
	)	Time: 10:00 a.m.
	)	Judge: Hon. J. Michael Seabright

PLAINTIFF'S MEMORANDUM OF POINTS OF LAW AND AUTHORITIES IN  
OPPOSITION TO DEFENDANTS' MOTION TO DISMISS

I. INTRODUCTION

Plaintiff Sandra Lee Demoruelle, *Pro Se*, respectfully submits her Opposition to Defendants' Motion to Dismiss. The Plaintiff claims that the two County of Hawaii Department of Environmental Management ("COHDEM") Ka'u wastewater treatment plants ("WWTPs") Project Work Plans are proceeding in violation of National Environmental Policy Act ("NEPA") 42 USC Sec. 4321 *et seq.* because in failing to follow statutory and regulatory procedure for public participation, no environmental impact statement has been considered or prepared and submitted for publication as required by the NEPA and Hawaii environmental review statutes

1 (“HEPA”), Hawaii Revised Statutes (“HRS”) 343 *et seq.* Plaintiff challenges the decision by  
2 Kate Rao, the EPA Responsible Official under 40 CFR 6.200, determining that only the Pahala  
3 Large Capacity Cesspool (“LCC”) Closure Project, Def. Ex. 1-A and Ex. 6, would be subject to  
4 NEPA environmental review procedures and “other environmental cross-cutters (see 40 CFR  
5 6.300 *et seq.*) applicable to this project.” Ex.5 [Grant Agreement P1].

7 According to the Defendants’ Exhibit 5, which is not authenticated by any affidavit  
8 [FRCP Rule 12(d) Presenting Matters Outside the Pleadings], purported to be the original EPA-  
9 County of Hawaii Grant Agreement XP-96942401 dated September 20, 2005, Section P1  
10 requires that, ever since 2005, the EPA must comply with NEPA “and other environmental  
11 crosscutters” for the “Kau Cesspool Replacement Project” for the “design and construction of  
12 wastewater system improvements in Naalehu and Pahala in the Kau district of the Big Island of  
13 Hawaii.” Dkt. No. 25-11.

14 As stated in the original Grant Agreement [Def. Ex. 5], the EPA-assisted project  
15 “involves replacement of sewer lines ..., installation of community septic tank systems and  
16 elimination of 5 large capacity cesspools.” The Naalehu and Pahala LCCs, being geographically  
17 located 11 miles apart in the remote, sparsely populated District of Kau, were initially treated as  
18 a single project with EPA having the sole responsibility to comply with NEPA/cross-cutting  
19 statutes and regulations since 2005.

20 After Plaintiff filed her Complaint on May 14, 2018, on May 30, 2018, Defendants and  
21 County of Hawaii Department of Environmental Management (“COHDEM”) entered into an  
22 “Assistance Amendment” [XP-96942401-7] that caused harm to the Plaintiff by “the shift[ing] of  
23 project location from Naalehu to Pahala” and allocating the EPA funding, with concurrent  
24 NEPA/cross-cutting obligations, “only to the ‘Construction-Wastewater Treatment and Disposal  
25 System’ task in the approved Pahala Community Large Capacity Cesspools Replacement Project  
26 work plan,” thereby avoiding any NEPA/crosscutting procedures for the Naalehu Work Plan and  
27 causing the Plaintiff concrete injuries. The Plaintiff claims that the EPA Defendants are  
28 proceeding in violation of NEPA 42 USC Sec. 4321 *et seq.* because no environmental impact

1 statement for the Naalehu and Pahala LCC Closure Project has been prepared and submitted as  
2 required by NEPA and Hawaii environmental review statutes (“HEPA”), HRS 343 *et seq.*  
3 Defendant, Kate Rao, EPA’s Responsible Official, has failed her duty to provide environmental  
4 review (40 CFR 6.200) of the cumulative effects of two new-build municipal secondary  
5 wastewater treatment plants planned to service under 170 households at each site (40 CFR  
6 1508.25 (2)), projects which further have the geographic and common timing that require EPA  
7 “to treat them in a single impact statement.” 40 CFR 1508.25 (3).

8 The Plaintiff also alleges that the Defendants failed to comply with the  
9 procedural requirements of 40 CFR Part 25 – PUBLIC PARTICIPATION IN  
10 PROGRAMS UNDER THE RESOURCE CONSERVATION AND  
11 RECOVERY ACT, THE SAFE DRINKING WATER ACT, AND THE CLEAN  
12 WATER ACT for public participation in activities under the Clean Water Act  
13 (Pub. L. 95-217). Plaintiff argues that “by failing to prepare an [EA/EIS] the  
14 defendants eliminated the public’s right to participate.” *City of South Pasadena*  
15 *V. Slater*, 56 F.Supp.2d 1106 (C.D.Cal. 1999). “When substantive judgments  
16 are committed to the very broad discretion of an administrative agency,  
17 procedural safeguards that assure public access to the decisionmaker should be  
18 vigorously enforced.” *Western Oil & Gas v. EPA*, 633 F.2d 803, 813 (9<sup>th</sup>  
19 Cir.1980).

20 Further, lacking an EIS, there is no “sound basis” for all the past and  
21 current COHDEM studies – and ongoing studies without an EIS to “provide a  
22 sound basis for investigation...” *Sierra Club v. Froehlike*, 630 F. Supp. 1215,1227  
23 (S.D.Tex. 1986).



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## II. ARGUMENT

### A. Defendants' Failure to State a Claim FRCP 12(b)(6) Allegation

Plaintiff seeks declaratory and injunctive relief to protect Plaintiff's interests at law, especially her interests that the EPA comply with the NEPA and EPA regulatory requirements for public participation in identifying alternatives to the recommended projects (40 CFR 1501.7). The Plaintiff seeks this relief by requiring EPA to comply with NEPA statutes and other public participation requirements, treating the two remaining Ka'u LCC closures as one project and completing the NEPA Section 102 Environmental Impact Statement as a single document for both the Pahala and Naalehu Work Plans before any further wastewater planning; design; engineering, biologic and/or archaeological studies; or construction is done at any proposed site in either Naalehu or Pahala.

### B. Defendants' Lack of Jurisdiction FRCP 12(b)(1) or (2) Allegation

The Defendants suggest that adjudication of the procedural challenge at this point is improper because a future site-specific EA/EIS might eliminate the concrete injury the Plaintiff has endured because of COHDEM procedural NEPA violations and render this adjudication unnecessary. ("[Defendant] suggests adjudication of [the] challenge at this point is improper because future project-specific consultations might result in mitigation or elimination of any potential harm to [Plaintiff], thus rendering adjudication unnecessary. We conclude, however, that [Plaintiff's] lawsuit is ripe for adjudication." *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015).

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A procedural dispute, such as the case in question, is ripe "at the time the [procedural] failure takes place." When a party suffers a procedural injury, it "may complain of that failure at the time the failure takes place, for the claim can never get riper." *See Ohio Forestry Association v. Sierra Club et al.*, 523 U.S. 726, 737 (1998); *see also* "The imminence of project-specific implementation 'is irrelevant to the ripeness of an action raising a procedural injury.'" *Citizens for Better Forestry v. USDA*, 341 F.3d 961, 977 (9<sup>th</sup> Cir. 2003) as cited in *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015). "This dispute needs no additional factual development because the procedural injury has already occurred." *Id.*

#### 1. NEPA Standard of Review

"NEPA is essentially a procedural statute (*Daly v. Volpe*, 514 F.2d 1106 (9<sup>th</sup> Cir. 1975)) and we have recognized that careful compliance with its provisions is necessary to fulfill the statute's fundamental goals..." *Alpine Lakes Protection Society v. Schlapfer*, 518 F.2d 1089 (9<sup>th</sup> Cir. 1975) (*See Kleppe v. Sierra Club*, 427 U.S. 390, 409-410 (1976) (The court's role is to ensure that the agency has taken a "hard look" at environmental consequences.)

It is unusual for cases in this century to find that agencies have fully avoided NEPA procedures for thirteen years (September 20, 2005 to present), so the Court needs to look back to the original 1971 *Calvert Cliffs' Coordinating Committee* for guidance:

The NEPA statute establishes a "strict standard of compliance" mandating "a particular sort of careful and informed decisionmaking process and creates judicially enforceable duties. ... [I]f the [agency] decision was reached procedurally without individualized consideration and balancing

1 of environmental factors – conducted fully and in good faith – it is the  
2 responsibility of the courts to reverse.” The Court said environmental  
3 issues must be considered at every important stage in the decisionmaking  
4 process, i.e., at every stage where an overall balancing of environmental  
5 and non-environmental factors is appropriate and where alterations might  
6 be made in the proposed action to minimize environmental costs. “NEPA,  
7 first of all, makes environmental protection a part of the mandate of every  
8 federal agency and department.”

9 “[Every federal agency] is not only permitted but compelled to take  
10 environmental values into account. Perhaps the greatest importance of  
11 NEPA is to require the Atomic Energy Commission and other agencies to  
12 consider environmental issues just as they consider other matters within  
13 their mandates.” at 1112

14 The court must determine whether “the actual balance of costs and  
15 benefits that was struck was arbitrary or clearly gave insufficient weight to  
16 environmental values.”

17 “To ensure that the balancing analysis is carried out and given full effect,  
18 Section 102(2)(c) requires that responsible officials of all agencies prepare  
19 a ‘detailed statement’ covering the impact of particular actions on the  
20 environment, the environmental costs which might be avoided, and  
21 alternative measures which might alter the cost-benefit equation. The  
22 apparent purpose of the ‘detailed statement’ is to aid in the agencies’ own  
23 decision making process and to advise other interested agencies and the  
24 public of the environmental consequences of planned federal action.  
25 Beyond the ‘detailed statement,’ Section 102(2)(D) [now 102(2)(E)]  
26 requires all agencies specifically to ‘study courses of action in any  
27 proposal which involves unresolved conflicts concerning alternative uses  
28 of available resources.’ This requirement, like the ‘detailed statement’  
29 requirement, seeks to ensure that each agency decision maker has before  
30 him and takes into proper account all possible approaches to a particular  
31 project (including total abandonment of the project) which would alter the  
32 environmental impact and the cost-benefit balance. Only in that fashion is  
33 it likely that the most intelligent, optimally beneficial decision will  
34 ultimately be made.

35 Thus the Section 102 duties are not inherently flexible. They must be  
36 complied with to the fullest extent, unless there is a clear conflict of  
37 statutory authority. Considerations of administrative difficulty, delay or  
38 economic cost will not suffice to strip the section of its fundamental  
39 importance.

40 We conclude, then, that Section 102 of NEPA mandates a particular sort  
41 of careful and informed decisionmaking process and creates judicially

1 enforceable duties. The reviewing courts probably cannot reverse a  
2 substantive decision on its merits, under Section 101, unless it be shown  
3 that the balance of costs and benefits that was struck was arbitrary or  
4 clearly gave insufficient weight to environmental values. But if the  
5 decision was reached procedurally without individualized consideration  
6 and balancing of environmental factors – conducted fully and in good faith  
7 – it is the responsibility of the courts to reverse.

8 The question here is whether the Commission is correct in thinking that its  
9 NEPA responsibilities may ‘be carried out *in toto* outside the hearing  
10 process’ – whether it is enough that environmental data and evaluations  
11 merely ‘accompany’ an application through the review process, but  
12 receive no consideration whatever from the hearing board.

13 We believe that the Commission’s crabbed interpretation of NEPA makes  
14 a mockery of the Act. What possible purpose could there be in Section  
15 102(2)(c) requirement (that the ‘detailed statement’ accompany proposals  
16 through agency review processes) if ‘accompany’ means no more than  
17 physical proximity – mandating no more than the physical act of passing  
18 certain folders and papers, unopened, to reviewing officials along with  
19 requiring the ‘detailed statement’ to be before hearing boards, if the boards  
20 are free to ignore entirely the contents of the statement? NEPA was meant  
21 to do more than regulate the flow of papers in the federal bureaucracy.  
22 The word ‘accompany’ in Section 102(2)(c) must not be read so narrowly  
23 as to make the Act ludicrous. It must, rather, be read to indicate a  
24 congressional intent that environmental factors, as compiled in the  
25 ‘detailed statement,’ be *considered* through agency review processes.  
26 *Calvert Cliffs’ Coordinating Committee v. AEC*, 449 F.2d 1109, 1113–  
27 1114 (D.C.Cir. 1971)

28 “[A]n EIS is in compliance with NEPA when its form, content, and  
29 preparation substantially (1) provide decision-makers with an environmental  
30 disclosure sufficiently detailed to aid in the substantive decision whether to  
31 proceed with the project in light of its environmental consequences, and (2)  
32 make available to the public, information of the proposed project’s  
33 environmental impact and encourage public participation in the development of  
34 that information.” *Trout Unlimited v. Morton*, 509 F.2d 1276, 1283 (9<sup>th</sup> Cir.  
35 1974)

1 It is important that draft environmental statements be prepared and  
2 circulated for comment and furnished to the Council as early as possible in  
3 the agency review process in order to permit agency decisionmakers and  
4 outside reviewers to give meaningful consideration to the environmental  
5 issues involved. In particular, agencies should keep in mind that such  
6 statements are to serve as the means of assessing the environmental impact  
7 of proposed agency actions, rather than as a justification for decisions  
8 already made. This means that draft statements on administrative actions  
9 should be prepared and circulated for comment prior to the first significant  
10 point of decision in the agency review process. *State of California v.*  
11 *Block*, 690 F.2d 753 (9<sup>th</sup> Cir. 1982).

12 The EPA refused to disclose the Proposed Action – the actual Work Plan  
13 for the Naalehu WWTP – prior to ALL opportunity for public to comment had  
14 passed. (“By refusing to disclose its Proposed Action until after all opportunity  
15 for comment has passed, an agency insulates its decision-making process from  
16 public scrutiny. Such a result renders NEPA’s procedures meaningless.”) *State of*  
17 *California v. Block*, 690 F.2d 753 (9<sup>th</sup> Cir. 1982). Therefore, without sufficient  
18 information to permit “meaningful consideration” of the Naalehu Work Project  
19 under EPA review for AOC compliance, the Ka’u community and the general  
20 public could not participate through intelligent comments before the June 2016  
21 deadline.

22 This lack of specific EIS information on the Proposed Action made all the  
23 Naalehu Work Plan comments irrelevant and EPA responses dismissed all the  
24 critical comments without any consideration of the dire warnings of  
25 environmental harm. (“[T]he gravamen of their claim is that there was insufficient  
26 information to adequately participate in the comment process.” *Idaho ex rel.*  
27 *Kemphorne v. US Forest Service*, 142 F. Supp.2d 1248, 1260 (D. Idaho 2001)).  
28 The AOC Work Plans the EPA provided for comments in May 2016 failed to

1 provide the public with a meaningful opportunity to comment on the COHDEM  
2 WWTP Proposed Actions.

3 But EPA’s responsibility to respond to the Naalehu comments is shaped  
4 by the extreme degree of the human environmental effects of the siting of the  
5 Proposed Action – a secondary WWTP –adjoining a rural elementary school as  
6 described in the AOC Naalehu Work Plan and its compulsory compliance  
7 “Milestones.” (“The scope of an agency’s responsibility to respond to comments  
8 is shaped by the degree that the comments bear ‘on the environmental effects of  
9 the proposed action.’ 40 CFR 1500.10(a)(1977) as cited in *State of California v.*  
10 *Block*, 690 F.2d 753 (9<sup>th</sup> Cir. 1982)).

11 EPA failed to require that relevant COHDEM WWTP Projects  
12 environmental documents, comments, and responses accompany the proposed  
13 projects through existing EPA review processes so that the EPA officials could  
14 use the statement in making decisions. 40 CFR 1505.1(d). (*See also* 40 CFR  
15 25.11(b)(2) [At minimum the assisted agency work plan shall include:] “A  
16 proposed schedule for public participation activities to impact major decisions,  
17 including consultation points where responsiveness summaries will be.”)

18 By failing to ensure COHDEM followed even the minimal schedule of  
19 “talkstory” community meetings, the EPA “denied the public that very  
20 opportunity to participate in the decisionmaking process which is among the very  
21 purposes of the [NEPA] Act itself.” *Columbia Basin Land Protection Ass’n v.*  
22 *Schlesinger*, 643 F.2d 585 (9<sup>th</sup> Cir. 1981).

## 23 2. Rationalize and Justify Decisions

1 By waiting thirteen years to even begin preparation of any environmental  
2 review documents, the agencies are merely rationalizing and justifying their  
3 decisions which are made without consideration of the environmental effects.  
4 EPA has shown that it failed to grasp the fact that environmental review laws are  
5 “procedural” by allowing COHDEM Director Kucharski to determine that an EA  
6 cannot even be started for the pre-determined wastewater treatment projects until  
7 the County has done site-specific environmental studies, which is after the fact  
8 rationalization. Word-for-word, Director Kucharski said: “*In an EA you come up  
9 with a preferred alternative, and that preferred alternative is what all of the  
10 environmental studies and impacts are centered around. And you have to go  
11 through a justification as to how you got to that preferred site. And that is the  
12 process.*” Director Kucharski statement at COH Environmental Management  
13 Commission meeting minutes of June 27, 2018 [approved as presented July 26,  
14 2018], page 26.

### 15 C. Defendants’ Lack of Plaintiff’s Standing Allegation

16 To establish Article III standing, “a plaintiff must show (1) it has  
17 suffered an ‘injury in fact’ that is (a) concrete and particularized and (b) actual or  
18 imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the  
19 challenged action of the defendant; and (3) it is likely, as opposed to merely  
20 speculative, that the injury will be redressed by a favorable decision.” *Friends of  
21 the Earth v. Laidlaw Environmental Services (TOC), Inc.*, 528 U.S. 167, 180-81  
22 (2000).  
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1 The Plaintiff’s declaration sufficiently establishes “a geographic nexus  
2 between the individual asserting the claim and the location suffering an  
3 environmental impact.” *Western Watersheds Project v. Kraayenbrink*, 632 F.3d  
4 472, 485 (9<sup>th</sup> Cir. 2011) (internal quotation marks omitted); *see also Wilderness  
5 Society, Inc. v. Rey*, 622 F.3d 1251, 1256 (9<sup>th</sup> Cir. 2010). In the present case, the  
6 Naalehu ESA Phase I names the Naalehu Elementary School as the western  
7 boundary of the WWTP facility. As Plaintiff’s great-grandson’s first grade  
8 classroom is currently within 100 feet of the Naalehu WWTP boundary with the  
9 school, the geographic nexus between the individual and the location of the  
10 Proposed Action is clearly established.  
11

12 Where a procedural violation is at issue, “a litigant need only demonstrate  
13 that he has a procedural right that, if exercised, could protect his concrete interests  
14 and that those interests fall within the zone of interests protected by the statute at  
15 issue.” *NRDC v. Jewell*, 749 F.3d 776, 783 (9<sup>th</sup> Cir.2014) (internal alterations and  
16 quotations omitted). “Thus, where a procedural violation is at issue, a plaintiff  
17 need not ‘meet [] all normal standards for redressability and immediacy.’” *Lujan  
18 v. Defenders of Wildlife*, U.S. 555, 572 n. 7 (1992) as cited in *Cottonwood  
19 Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015).  
20 (A plaintiff that sues a federal agency must also demonstrate that: (1) its  
21 complaint “relate[s] to ‘agency action,’ which is defined to include ‘failure to  
22 act’”; and (2) it “suffered either ‘legal wrong’ or an injury falling within the ‘zone  
23 of interests’ sought to be protected by the statute on which [its] complaint is  
24 based.” “We have explained that injury to aesthetic, recreational, or scientific  
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1 interests may constitute 'concrete injury,' but we have stressed that 'plaintiffs can  
2 only suffer a concrete injury if the Forest Service ... [is] undertaking or  
3 threatening to undertake activities that cause or threaten harm to the plaintiffs'  
4 protected interests.'") *Center for Biological Diversity v. Lueckel*, 417 F.3d 532,  
5 536,537 (6<sup>th</sup> Cir. 2005).

6  
7 **III. CONCLUSION**

8 For the reasons stated above, this Court should deny the Defendants' motion for  
9 dismissal. The Defendants have threatened the Naalehu community with a horrendous sewage  
10 project adjoining the elementary school, and even taken action to condemn the property.

11 Every day causes more injury to the Plaintiff and her affected community.

12 The COHDEM has a commitment to completing 90% of the projects' tasks before the  
13 end of December, making it almost impossible to undo the effects of these ill-conceived projects.  
14 And if the Work Plan pre-determines the future, how much more of a concrete injury is carrying  
15 out the Project Work Schedule, in compliance with the AOC? How very true that it "**is now or  
16 it is never.**" *Idaho Conservation League v. Mumma*, 956 F.2d 1508 at 1516 (9<sup>th</sup> Cir. 1992).

17 Here, the violation of NEPA and the failure to provide any EIS and incorporate the  
18 essential function of public participation has had more traumatic effects, and critically immediate  
19 impact, than generally occurs from the injury of violating NEPA statutes.

20 To this very day, the EPA has not required the COHDEM to follow the NEPA procedural  
21 statutes which require an EIS be developed early and accompany the COHDEM and EPA  
22 decision-making. Lacking any environmental review process, COHDEM had no opportunity for  
23 any community input for guidance, resulting in the unacceptable proposal that placed a full-  
24 sized, newly built secondary sewage treatment plant with four open sewage lagoons right beside  
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1 an elementary school, an unexamined action that COHDEM thought was such an optimal  
2 decision that they had begun condemnation in violation of their own County regulations.

3 Ironically, the County has not even complied with the extended time for public  
4 participation in their Project Schedules that EPA agreed to in June 2018. The Naalehu Work  
5 Plan promised EPA the "Second Round Outreach B&C and County" was to have "Finished" by  
6 8/4/18, with a "Final Round Outreach" 12/23 to 12/27/18. No "outreach" occurred on 8/4/2018.<sup>1</sup>

7 If the EPA is not enjoined, as Plaintiff has requested of this Court, to provide NEPA  
8 procedural environmental review of the two Ka'u WWTP Projects, the EPA will continue to act  
9 unchecked with no transparency for citizens. The Court is requested to dismiss the Defendants'  
10 motion and allow this case to move forward.

11 Dated: October 2, 2018 at Naalehu, Hawaii.

12 Plaintiff:

13 /Sandra Lee Demoruelle

14 SANDRA LEE DEMORUELLE, *Pro Se*

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26 <sup>1</sup> 40 CFR 25.11(b)(2) [At minimum the assisted agency work plan shall include:] "A  
27 proposed schedule for public participation activities to impact major decisions,  
28 including consultation points where responsiveness summaries will be prepared."

1 CV18-00172 JMS-KSC

2 CERTIFICATE OF SERVICE

3 I HEREBY CERTIFY THAT, on this date and by the method of service noted below, a true and  
4 correct copy of the Plaintiff's Opposition and Memorandum of Opposition was served on the  
5 following at their last known address:

6 Served via U.S. Mail

7 Andrew Wheeler  
8 U.S. EPA Acting Administrator  
9 1200 Pennsylvania Ave, NW, Washington DC 20460

10 Michael Stoker  
11 U.S. EPA Region 9 Administrator  
12 U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105

13 Kathleen H. Johnson  
14 Director, Enforcement Division  
15 U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105

16 Kate Rao  
17 LCC Project Coordinator  
18 Drinking Water Protection Section (WTR 3-2)  
19 U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105

20 Simi Baht  
21 Trial Attorney  
22 Environmental Defense Section, Environment and Natural Resources Division  
23 U.S. Department of Justice  
24 301 Howard St. Ste 1010, San Francisco, CA 94105

25 Kenji M. Price  
26 United States Attorney, District of Hawaii  
27 Michael Albanese  
28 Assistant U.S. Attorney  
Room 6-100, 300 Ala Moana Boulevard, Honolulu HI 96850

DATED: October 2, 2018 in Naalehu, Hawaii

/Sandra Lee Demoruelle

SANDRA LEE DEMORUELLE, *Pro Se*

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CASE NO. CV18-00172 JMS-KCS

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF HAWAII

SANDRA LEE DEMORUELLE, *Pro Se* )  
PLAINTIFF )

- v. - )

ANDREW WHEELER, in his official capacity )  
as Acting Administrator of the United States )  
Environmental Protection Agency, and )  
ALEXIS STRAUSS, in her official capacity )  
as Acting Regional Administrator of the United )  
States Environmental Protection Agency )  
Region 9, KATHLEEN H. JOHNSON, )  
in her official capacity as Director of the )  
United States Environmental Protection )  
Agency Region 9 Enforcement Division, and )  
KATE RAO, in her official capacity as United )  
States Environmental Protection Agency )  
Region 9 LCC Project Coordinator )  
DEFENDANTS )

SECOND AMENDED  
COMPLAINT FOR  
DECLARATORY AND  
INJUNCTIVE RELIEF;  
ATTACHMENT A;  
CERTIFICATE OF  
SERVICE

Hearing: October 29, 2018  
Time: 10:00 a.m.  
Honorable J. Michael Seabright

Jury Trial: No

SECOND AMENDED COMPLAINT FOR DECLARATORY AND INJUNCTIVE  
RELIEF

1) Plaintiff SANDRA LEE DEMORUELLE *Pro Se*, respectfully files this timely amended complaint as a matter of right under F.R.C.P. 15(a) within "21 days after service of a motion under Rule 12(b)." On September 14, 2018, Defendants filed their Motion to Dismiss, Dkt. No. 25, *inter alia* "under Rule 12(b)(6) for failure to state a claim..." Dkt. No. 25-1 P. 12. Plaintiff's Second Amended Complaint is timely filed before October 5, 2018.

2) Plaintiff brings this action to compel Defendant ANDREW WHEELER in his capacity as Acting Administrator of the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (“EPA”), Defendant ALEXIS STRAUSS in her capacity as Acting Regional Administrator of the EPA Region 9, KATHLEEN H. JOHNSON in her capacity as Director, EPA Region 9 Enforcement Division, and Defendant KATE RAO in her capacity as EPA Region 9 Large Capacity Cesspool (“LCC”) Project Coordinator who is EPA’s NEPA “Responsible Official” under 40 CFR 6.200 *et seq.*, to perform their mandatory duties to ensure that EPA grant funds are used in compliance with the National Environmental Protection Act (“NEPA”) (42 USC 4321 - 4347; 40 CFR 1502, 1503, 1504, 1505, 1506 and 1507) and EPA regulations (40 CFR 35 *et seq.*; 40 CFR 6.300 *et seq.*; 40 CFR 1501.2(d); 40 CFR 25 *et seq.*).

3) Plaintiff challenges the decision by Kate Rao, the EPA Responsible Official under 40 CFR 6.200, determining that only the Pahala Large Capacity Cesspool (“LCC”) Closure Project, Def. Ex. 1-A and Ex. 6, would be subject to NEPA environmental review procedures and “other environmental cross-cutters (see 40 CFR 6.300 *et seq.*) applicable to this project.” Ex.5 [Grant Agreement P1].

4) According to the Defendants’ Exhibit 5, which is not authenticated by any affidavit [FRCP Rule 12(d) Presenting Matters Outside the Pleadings], purported to be the original EPA-County of Hawaii Grant Agreement XP-96942401 dated September 20, 2005, Section P1 requires that, ever since 2005, the EPA must comply with NEPA “and other environmental crosseutters” for the “Kau Cesspool Replacement Project” for the “design and construction of wastewater system improvements in Naalehu and Pahala in the Kau district of the Big Island of Hawaii.” Dkt. No. 25-11.

5) As stated in the original Grant Agreement [Def. Ex. 5], the EPA-assisted project “involves replacement of sewer lines ..., installation of community septic tank systems and elimination of 5 large capacity cesspools.” The Naalehu and Pahala LCCs, being geographically located 11 miles apart in the remote, sparsely populated District of Kau, were initially treated as a single project with EPA having the sole responsibility to comply with NEPA/cross-cutting statutes and regulations since 2005.

6) After Plaintiff filed her Complaint on May 14, 2018, on May 30, 2018, Defendants and County of Hawaii Department of Environmental Management (“COHDEM”) entered into an “Assistance Amendment” [XP-96942401-7] that caused harm to the Plaintiff by “the shift[ing] of project location from Naalehu to Pahala” and allocating the EPA funding, with concurrent NEPA/cross-cutting obligations, “only to the ‘Construction-Wastewater Treatment and Disposal System’ task in the approved Pahala Community Large Capacity Cesspools Replacement Project work plan,” thereby avoiding any NEPA/crosscutting procedures for the Naalehu Work Plan and causing the Plaintiff concrete injuries.

7) The Plaintiff claims that the EPA Defendants are proceeding in violation of NEPA 42 USC Sec. 4321 *et seq.* because no environmental impact statement for the Naalehu and Pahala LCC Closure Project has been prepared and submitted as required by NEPA and Hawaii environmental review statutes (“HEPA”), HRS 343 *et seq.* Defendant, Kate Rao, EPA’s Responsible Official, has failed her duty to provide environmental review (40 CFR 6.200) of the cumulative effects of two new-build municipal secondary wastewater treatment plants planned to service under 170 households at each site (40 CFR 1508.25 (2)), projects which further have the geographic and common timing that require EPA “to treat them in a single impact statement.” 40 CFR 1508.25 (3).

8) The Plaintiff also alleges that the Defendants failed to comply with the procedural requirements of 40 CFR Part 25 – PUBLIC PARTICIPATION IN PROGRAMS UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT, THE SAFE DRINKING WATER ACT, AND THE CLEAN WATER ACT for public participation in activities under the Clean Water Act (Pub. L. 95-217).

9) This Complaint seeks declaratory and injunctive relief requiring EPA to comply with NEPA statutes and other public participation requirements, treating the two remaining Ka'u LCC closures as one project and completing the NEPA Section 102 Environmental Impact Statement as a single document for both the Pahala and Naalehu Work Plans before any further wastewater planning; design; engineering, biologic and/or archaeological studies; or construction is done at any proposed site in either Naalehu or Pahala.

#### PARTIES

10) PLAINTIFF SANDRA LEE DEMORUELLE, natural-born citizen of the United States of America, is and, at all times relevant, was a resident of 94-1513 Kaalualu Road, Naalehu in the District of Kau in the County and State of Hawaii. Plaintiff has been actively seeking remedies for the harm caused by the failure to provide any environmental review from 2005 up until the publication of the sole Draft Environmental Assessment of the Pahala LCC Replacement Project with an [anticipated] Finding of No Significant Impact (“DEA/FONSI”) on September 23, 2018 in *The Environmental Notice (“TEN”)* of the Hawaii Office of Environmental Quality Control (“OEQC”).

11) To demonstrate her standing based upon her ongoing interest, in Plaintiff’s request for “Consulting Party” signed and dated September 21, 2018, she made the following attestation that

her aesthetic, recreational, scientific, spiritual, educational and economic interests have been and will continue to be affected by Defendants’ actions:

Dear Ms. Rao

I am a homeowner and 38 year resident of Naalehu in the historic district of Ka’u. I raised two children here who graduated from Naalehu Elementary School (NES) and, currently, my 7 year old great-grandson attends first grade there. I serve as the Parent Representative on the NES School Community Council.

The Naalehu Elementary School is listed on the National Register of Historic Places so I have an active interest in the Naalehu Work Plan receiving NHPA Section 106 consultation, as is being done for the Pahala Work Plan.

Therefore, under 36 CFR 800.2(c)(5), I request Consulting Party Status for the Kau District Cesspool Replacement Project, EPA Assistance ID Number (now FAIN) XP 96942401-7.

The EPA and County are making an irrevocable commitment of resources to place two full-sized, new-build secondary wastewater treatment plants to service about 300 homes in remote, rural Ka’u. This is a commitment of resources our community holds sacred – as Nohea Kaawa testified, her family says that “sacred is anything that cannot be replaced.” (*County Council* testimony on Res. 650-18).

To demonstrate my interest in this EPA undertaking, I would point to my attentive participation through testimony to relevant County authorities:

#### **County of Hawaii Council**

May 9, 2018 REGARDING BILL 142: LONO KONA SEWAGE PROJECT BONDS (3 Pages).

May 22, 2018 [Special Budget Hearing] REGARDING BILL 111: NAALEHU AND PAHALA WASTEWATER SYSTEMS COHDEM CIP 2018-19 BUDGET PRIORITIES #2 AND #3 TALLING \$41,051,000.

June 6, 2018 [Special Budget Hearing] REGARDING BILL 111: NAALEHU AND PAHALA WASTEWATER SYSTEMS COHDEM CIP 2018-19 BUDGET PRIORITIES #2 AND #3 TALLING \$41,051,000.

#### **County of Hawaii Council Finance Committee**

August 7, 2018 [REGARDING FAILURE TO PLACE KA’U COMMUNITY REQUEST FOR AUDIT OF LCC CLOSURE PROJECTS FROM NOVEMBER 5, 2004 TO PRESENT].



August 21, 2018 REGARDING RES. 654-18: GRANT FOR FORMER NAALEHU SEWAGE TREATMENT SITE.

**County of Hawaii Environmental Management Commission**

April 25, 2018 "Lots of Pork, Little Sewage at the Two Ka'u Sewage Plants" (2 Pages).

May 23, 2018 Provided Commissioners with copies of 1) the Naalehu WWTP CWSRF Funding Form showing 33 points making it Priority #1; 2) the DEM CIP Budget changes 2005 to 2019; 3) AOC, Naalehu Work Plan Attachment B, and EPA Reponse to community comments; 4) Demoruelle v. EPA et al., CV 18-00172 JMS-RSC Complaint; 5) *Ka'u Calendar* dated May 2018 article; 6) County records demonstrating Souza family ownership of Naalehu property since 1968.

June 27, 2018 Complaining of the lack of environmental review and the Naalehu EA is still Step #8 – to be done AFTER the COHDEM has decided on the treatment plant site, and the COHDEM has not been transparent and has withheld requests for the two Ka'u DEAs, PERs and ESA Phase I.

July 27, 2018 RE: ITEM (1) DIRECTOR'S INFORMATIONAL UPDATE – *Status of the proposed Naalehu WWTP* (Provided Commissioners with copies of the COHDEM Extension Compliance Request letter dated June 14, 2018 to EPA; article about Ka'u Royal Hawaiian Coffee and Tea LP and its land manager, John Cross.

July 27, 2018 RE: ITEM 5.A. Policy on commenting on environmental review.

Therefore, I am formally requesting "consulting party" status under NEPA, HEPA, and all cross-cutting statutes including ESA and NHPA, and to be consulted and informed of all EPA and COH historic property identification and determination of effect for the Naalehu Work Plan project, and for the remaining environmental review actions and decisions on mitigation measures for the Pahala Work Plan project.

- 12) DEFENDANT ANDREW WHEELER is Acting Administrator of the EPA. The Administrator is charged with implementing and enforcing the NEPA.
- 13) DEFENDANT ALEXIS STRAUSS is Acting Regional Administrator of the EPA Region 9, with authority delegated by the EPA Administrator, EPA Delegation 9-34 (May 11, 1994), to take actions to close the Ka'u LCCs.

14) DEFENDANT KATHLEEN H. JOHNSON is Director of the EPA Region 9 Enforcement Division.

15) DEFENDANT KATE RAO is EPA Region 9 LCC Project Coordinator who historically has been the EPA decision-maker for the EPA Grant payment to the County when on January 4, 2011, Kate Rao approved the payment of \$133,853 of COH contact Robin Bauman's \$207,006 requested for EFT # 90204 U.S. EPA Payment Request of November 5, 2010.

16) Defendant Rao, in her capacity as EPA Region 9 Large Capacity Cesspool Project Coordinator, is also EPA's NEPA "Responsible Official" under 40 CFR 6.200 *et seq.*, who is thereby required to perform her mandatory duties to ensure that the COHDEM-EPA grant funds are used in compliance with the National Environmental Protection Act ("NEPA") (42 USC 4321 -4347; 40 CFR 1502, 1503, 1504,1505, 1506 and 1507) and EPA regulations (40 CFR 35 *et seq.*; 40 CFR 6.300 *et seq.*; 40 CFR 1501.2(d); 40 CFR 25 *et seq.*

**BASIS FOR JURISDICTION AND VENUE**

17) This action arises under the laws of the United States and involves the United States as a defendant. Therefore, this Court has jurisdiction over the claims specified in this Complaint pursuant to 28 U.S.C. Secs. 1331 (federal question jurisdiction) and 1361 (action to compel officer or agency to perform a duty owed to the Plaintiff).

18) This is a civil action for judicial review under Administrative Procedures Act 5 U.S.C. Sec. 701 -706, as the Defendants evaded NEPA/cross-cutters statutory requirements when, on May 30, 2018, Defendants and COHDEM entered into the "Assistance Amendment" [XP-96942401-7] that caused harm to the Plaintiff by "the shift[ing] of project location from Naalehu to Pahala" and allocating the EPA funding, with concurrent NEPA/cross-cutting obligations,

“only to the ‘Construction-Wastewater Treatment and Disposal System’ task in the approved Pahala Community Large Capacity Cesspools Replacement Project work plan,” thereby avoiding any NEPA/crosscutting procedures for the Naalehu Project and causing the Plaintiff concrete injuries.

19) Under 5 USC 702:

A person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof. An action in a court of the United States seeking relief other than money damages and stating a claim that an agency or an officer or employee thereof acted or failed to act in an official capacity or under color of legal authority shall not be dismissed nor relief therein be denied on the ground that it is against the United States or that the United States is an indispensable party. The United States may be named as a defendant in any such action, and a judgment or decree may be entered against the United States: Provided, That any mandatory or injunctive decree shall specify the Federal officer or officers (by name or by title), and their successors in office, personally responsible for compliance.

20) Plaintiff has suffered procedural injuries based on a procedural right test where the decisionmaking failure to follow NEPA/HEPA was a violation of her procedural rights under HRS 343. The Plaintiff seeks public participation during the review process because such participation as she seeks “benefits all parties involved and society as a whole.” (HRS 343-1; *see also* , HRS 344-4(10)).

21) Factually, the EPA is the “ultimate authority” for the two Kau LCC Closure Projects’ NEPA procedures as the EPA stated on June 7, 2018: “This project triggers the application of the National Environmental Policy Act (NEPA) and numerous Federal cross-cutting authorities including the Endangered Species Act (ESA).”

22) The Court has jurisdiction in this claim because even a perfunctory review of remedies available to the Plaintiff for “concrete injuries” caused by violation of NEPA statutes and the EPA’s own regulations would demonstrate no other Court holds the remedies Plaintiff requires

to repair the NEPA violations. “To the extent that the [Work] [P]lan pre-determines the future, it represents a **concrete injury** that plaintiffs must, at some point, have standing to challenge.

**That point is now or it is never.**” [emphasis added.] (*Idaho Conservation League v. Mumma*, 956 F.2d 1508 at 1516 (9<sup>th</sup> Cir. 1992)); and in *Ohio Forestry Association v. Sierra Club*, 523 U.S. 726 (1998) the Supreme Court stated: “Hence a person with standing who is injured by a failure to comply with the NEPA procedure may complain of that failure at the time the failure takes place, for the claim can never get riper.”)

23) First, the remedy for Plaintiffs’ personal injuries from emotional distress, along with other affected Ka’u residents, must be individually addressed in a State Court, which cannot address Federal issues.

24) Next, the recalcitrance of the County of Hawaii Department of Environmental Management has caused it repeatedly to fail to grasp the fact that environmental review laws are “procedural,” while COHDEM Director Kucharski maintains that an EA cannot even be started for the pre-determined wastewater treatment projects until the County has done site-specific environmental studies, which is “substantive,” after the fact, rationalization. Word-for-word, Director Kucharski said: “*In an EA you come up with a preferred alternative, and that preferred alternative is what all of the environmental studies and impacts are centered around. And you have to go through a justification as to how you got to that preferred site. And that is the process.*” Director Kucharski statement at COH Environmental Management Commission meeting minutes of June 27, 2018 [approved as presented July 26, 2018], page 26.

25) The State Courts could order this local agency, the County of Hawaii, to enact NEPA/HEPA environmental review procedures, following the NEPA statutes EPA acknowledges is “ultimately their responsibility” (June 7, 2018 letter to F&WS), but the County

obviously does not have the capacity to learn, as the Plaintiff has explained the NEPA/HEPA triggers and requirements for public participation, “early and often,” [as cited from the OEQC justification for revisions in the new HAR] at every meeting of the EMC since she first learned of the violation of NEPA statutes at the April 2018 Naalehu “talkstory” meetings.

26) Since the only remedy for the injury of NEPA procedural violations, especially enacting stronger means of on-going public participation at every level of environmental review, requires actions by the EPA, this Court is the appropriate place for judicial review and has jurisdiction to provide the Plaintiff her required remedy.

27) Plaintiff herein demonstrates a substantial likelihood that the judicial relief she seeks that is directed at this illegal government action will have the effect of reducing Plaintiff’s ongoing environmental injury.

28) Venue in this case is proper under 28 U.S.C. 1391(e)(1)(B). A substantial part of the events and omissions giving rise to this claim occurred in the State of Hawaii.

#### **STATEMENT OF CLAIM**

29) When faced with EPA enforced closure of Ka’u LCCs owned by the COH, in compliance with HEPA, a Final Environmental Assessment with Finding of No Significant Impact (“FEA/FONSI”) was published in the August 23, 2007 *The Environmental Notice*.

30) No notice of “withdrawal” of the 2007 LCC Conversion FEA/FONSI has been published as required by Hawaii statute and regulations.

31) COHDEM stated an “amended Draft Environmental Statement for the Naalehu Wastewater Transmission, Treatment and Disposal System” “was issued in 2013” and “drew a number of concerns and objections,” and “that the County would need to expend additional time

and effort to achieve **community acceptance** of not only the proposed land location, but also the proposed type of wastewater treatment and disposal system.”

32) No Naalehu Project “amended DEA” has ever been published in *TEN* as required by HEPA Hawaii Revised Statutes (“HRS”) 343-5(b)(1)(A) and Hawaii Administrative Rules (“HAR”) Chapter 11-200 *et seq.*, so it is unclear how under NEPA/HEPA the public expressed “a number of concerns and objections” to COHDEM.

33) The COHDEM and the Mayor’s Office have both denied access to provide the publicly referenced Naalehu DEA to either the Plaintiff or to the local public libraries, enabling community review of the controversial actions.

34) The EPA Region 9 Enforcement Division has also been derelict in ensuring that the County of Hawaii Department of Environmental Management, an “assisted agency,” used EPA grant funds in compliance with 40 CFR 1506.6(a) (involving the public in preparing and implementing NEPA procedures) and 40 CFR Part 25 (Public Participation in Programs under ... the Safe Drinking Water Act ...) when the Naalehu/Pahala Large-Capacity Cesspool (“LCC”) Replacement Project became two separate Wastewater System Projects in 2012.

35) Defendants’ provided EPA grant funding for the Kau LCC Closure in 2011 without an Environmental Impact Statement (“EIS”) in violation of the National Environmental Protection Act Sec. 102(2), 42 U.S.C. Sec. 4332 *et seq.* which require a “hard look” at the environmental effects of the Projects before any agency decision is made.

36) Plaintiff seeks declaratory and injunctive relief to protect Plaintiff’s interests at law, especially her interests that the EPA comply with the NEPA and EPA regulatory requirements for public participation in identifying alternatives to the recommended projects (40 CFR 1501.7)

and the EPA's failure to require an environmental review statement from COHDEM to guide EPA officials in decision-making when significant environmental impacts should have been reasonably anticipated from two secondary wastewater treatment plant Projects placed where none have ever existed, one being located next to an elementary school (*see* Attachment A).

37) Further, without documented consideration of alternatives which included implementing the original decision to simply convert the LCCs to septic systems that has a Final Environmental Assessment ("FEA") with a Finding of No Significant Impact ("FONSI") that was approved in 2007, EPA and COHDEM were not able to make intelligent, optimally beneficial decisions without an early EIS (40 CFR 1501.2).

38) Plaintiff requests that the Court enjoin the EPA and COHDEM from implementing the Projects until Defendants fully comply with NEPA and their own 40 CFR 25 to require public input.

39) The decision to prepare an EIS is not a matter committed to the particular agency's discretion because NEPA's statutory EIS Directive is mandatory in nature.

40) Based on the EPA failure to oversee the assisted agency's public participation leading to failure to receive any public input into development of the Kau LCC Closure Projects, Plaintiff seeks a declaratory judgment, injunctive relief, the award of costs of suit, and other such relief as this Court deems just and proper.

41) Herein are described actual and concrete injuries caused by the Defendants' failure to comply with mandatory duties, including requiring the assisted agency to aid EPA to prepare the EIS/EID for the Naalehu Project.

42) The requested relief would redress these injuries and this Court has authority to grant the Plaintiff's requested relief.

***Claim 1: The Defendants are proceeding in violation of NEPA 42 USC Sec. 4321 et seq. because the EPA Responsible Official failed to determine whether the criteria require an environmental impact statement (40 CFR 6.200(a)) for the Naalehu and Pahala LCC Closure Project be prepared and submitted as required by NEPA and Hawaii environmental review statutes ("HEPA"), HRS 343 et seq.***

43) Plaintiff hereby incorporates all the allegations contained in paragraphs 1 through 42 above.

44) The EPA Responsible Official has failed to determine whether any environmental review documents evaluating the Naalehu LCC Closure Project's impact on the environment, environmental costs and alternative measures that described any appropriate alternatives to the COHDEM sole recommended course of action [NEPA 102(2)(C) and (E)] are required.

45) Initially, the EPA provided major funding for the \$3,600,000 "Ka'u Cesspool Replacement Project" with grant funding (XP-96942401-0 Original and XP 96942401-1) totaling \$1,980,000 in EPA funding with a 45% COH matching funding.

46) On January 4, 2011, Kate Rao of the EPA Region 9 Ground Water Office approved the payment of \$133,853 of the \$207,006 COH requested.

47) Having been awarded grant funding from EPA, COHDEM became an assisted agency and EPA Region 9 was required to provide oversight of the agency's environmental assessment of the Project's Work Plans under 40 CFR 35 *et seq.*, 40 CFR 1506.6 and 40 CFR 6.301 related to financial assistance awarded to "local agencies."

48) The Responsible Official failed to determine the scope of the environmental review for the Naalehu Project and has taken steps to avoid any NEPA/cross-cutting review by the “shift of project location from Naalehu to Pahala.” Def. Ex. 7 Dkt. No. 25-11.

49) Without documented consideration of alternatives which included implementing the original decision to simply convert the LCCs to septic systems that has a Final Environmental Assessment with a Finding of No Significant Impact that was approved in 2007, EPA and COHDEM were not able to make intelligent, optimally beneficial decisions without an early EIS (40 CFR 1501.2).

**Claim 2: The Plaintiff suffers procedural injury because the two COHDEM Wastewater Treatment Plant Projects are proceeding in violation of NEPA 42 USC Sec. 4321 *et seq.* and no environmental impact statement has been prepared considering the cumulative impacts of the two similar actions, and submitted as required by NEPA and Hawaii environmental review statutes (“HEPA”), HRS 343 *et seq.***

50) Plaintiff hereby incorporates all the allegations contained in paragraphs 1 through 49 above.

51) No notice of “withdrawal” of the 2007 LCC Conversion FEA/FONSI has been published as required by Hawaii statute and regulations.

52) No notice of an EA or EIS for the Naalehu LCC Closure Project has been published in *TEN* as required by HEPA statutes and regulations.

53) No environmental statement has accompanied the Kau LCC Closure Project proposals through EPA and COH decision-making from 2005 to present.

54) The decision to prepare an EIS is not a matter committed to the particular agency's discretion because NEPA's statutory EIS Directive is mandatory in nature.

**Claim 3: The Plaintiff suffered procedural injuries because EPA Region 9 has been derelict in ensuring that the COHDEM, an EPA assisted agency, used EPA grant funds in compliance with 40 CFR Part 25 *et seq.*; 40 CFR 35 *et seq.*; 40 CFR 6.300 *et seq.*; and 40 CFR 1501.2(d).**

55) Plaintiff hereby incorporates all the allegations contained in paragraphs 1 through 54 above.

56) The reasons the COH abandoned the original 2004 LCC conversion agreement with the affected Naalehu homeowners is unclear as no verifiable reason as evidenced by COHDEM records has been given by COHDEM for why the “field studies” were done after the FEA concluded the LCC conversion projects had no significant impacts.

57) There is no documentation available for Plaintiff's review of consideration of any appropriate alternatives to the COH recommended course of action to construct two new secondary wastewater treatment systems, nor is there any evidence of public input in this LCC Closure Projects' decision.

58) The COH unilateral decision to construct two full-size secondary wastewater treatment plants in Naalehu and Pahala was in direct contradiction to the recommended course of action which public participation through the August 31, 2004 vote deemed optimally beneficial to both communities.

**REQUESTED RELIEF**

59) WHEREFORE, Plaintiff Sandra Demouelle requests that the Court award her the following relief:

- (A) Adjudge and declare that the EPA decision to reject following NEPA procedural statutes for environmental review of the original Kau LLC Closure Project and the current Naalehu Project is arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law under APA and NEPA ;
- (B) Enjoin the Federal Defendants from authorizing any elements of the Kau LCC Closure Project in Naalehu or Pahala pending their full compliance with NEPA;
- (C) Enjoin the Defendants from allowing COHDEM to do any planning; design; engineering, biologic and/or archaeological studies; or construction activities on the Naalehu and Pahala Wastewater System Projects until EPA fully complies with NEPA;
- (D) Order Defendants to make all COHDEM and EPA environmental assessment documents, notices of meetings and comment periods, drafts and final documents available for public review, both in the Hilo Wastewater Department office and in the Pahala and Naalehu Libraries for community review because of the communities' remote locations and limited access to public transportation.
- (E) Order Defendants to take remedial actions to mitigate the adverse effects of the COHDEM's failure since 2010 to meet the public participation requirement in decision-making and assure the COHDEM does not avoid public input in the future;

- (F) Enter other appropriate injunctive relief to ensure that the Defendants comply with NEPA and APA and prevent irreparable harm to the Plaintiff and to the environment until such compliance occurs;
- (G) Retain jurisdiction of this matter until Defendants have fulfilled their legal and Court-ordered obligations as set forth in this Complain;
- (H) Award Plaintiff costs and reasonable attorney's fees, as incurred in this action;
- (I) Grant such other relief as the Court may deem just and proper.

**CERTIFICATION AND CLOSING**

60) Under Federal Rule of Civil Procedure 11, by signing below, I certify to the best of my knowledge, information, and belief that this complaint: (1) is not being presented for an improper purpose, such as to harass, cause unnecessary delay, or needlessly increase the cost of litigation; (2) is supported by existing law or by non-frivolous argument for extending, modifying, or reversing existing law; (3) the factual contentions have evidentiary support and the complaint otherwise complies with the requirements of Rule 11.

61) I agree to provide the Clerk's Office with any changes to my address where case-related papers may be served. I understand that my failure to keep a current address on file with the Clerk's Office may result in the dismissal of my case.

Dated: September 26, 2018 at Naalehu, Hawaii

Plaintiff:

Sandra Lee Demouelle, *Pro Se*

ATTACHMENT A

*Six year-old Daniel McDowell points to his Naalehu Elementary School kindergarten classroom beside the four open sewage lagoons proposed by the County of Hawaii at the April 12, 2018, Brown and Caldwell "talkstory" meeting – the sole opportunity for "public participation."*

CV18-00172 JMS-KSC

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT, on this date and by the method of service noted below, a true and correct copy of the Plaintiff's Second Amended Complaint was served on the following at their last known address:

Served via U.S. Mail

Andrew Wheeler, U.S. EPA Acting Administrator  
1200 Pennsylvania Ave, NW  
Washington DC 20460

Alexis Strauss  
U.S. EPA Acting Region 9 Administrator  
75 Hawthorne St., San Francisco CA 94105

Kathleen H. Johnson  
Director, Enforcement Division  
U.S. EPA Region 9  
75 Hawthorne St., San Francisco CA 94105

Kate Rao  
LCC Project Coordinator  
Drinking Water protection Section (WTR 3-2)  
U.S. EPA Region 9  
75 Hawthorne St., San Francisco CA 94105

Jeffrey H. Wood  
Acting Assistant Attorney General  
Simi Bhat  
Trial Attorney  
Environmental Defense Section  
Environment and Natural Resources Division  
U.S. Department of Justice  
301 Howard St., Ste.1051  
San Francisco, CA 94105

Kenji M. Price  
United States Attorney, District of Hawaii  
Michael Albanese  
Assistant U.S. Attorney  
Room 6-100, 300 Ala Moana Boulevard  
Honolulu HI 96850

DATED: September 26, 2018  
Signed in Naalehu, Hawaii

Sandra Lee Demoruelle, *Pro Se*

**NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT,  
16 U.S.C. 1540 (g)(1)(A) and (2)(A)(i)**

**PERSON GIVING NOTICE:**

Sandra Demoruelle,

Physical address: 94-1513 Kaalualu Road, Naalehu HI 96772

Mailing address: PO Box 588, Naalehu HI 96772-0588

Telephone: 1-808-929-9244

Email: [naalehuthetheatre@yahoo.com](mailto:naalehuthetheatre@yahoo.com)

**NOTICE:**

**Location: Naalehu and Pahala, District of Kau, County of Hawaii, State of Hawaii, U.S.A.**

**Date of commencement** of ongoing ESA Sec. 7 consultation violation:

Date: **September 20, 2005** per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-0 for project period 06/01/2005 – 12/31/2007.

COH Project Manager: Dora Beck

**EPA Project Officer: Laura Bose (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 5, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

*The recipient [County of Hawaii] agrees not to bill or request reimbursement from EPA for any costs associated with the design or construction of the project [Kau Cesspool Replacement Project for Naalehu and Pahala in Kau] funded by this grant ... until EPA has complied with the National Environmental Policy Act and other environmental cross-cutters (see 40 CFR 6.300 et seq) applicable to this project. (Id. Section P1.)*

Current Date: 05/30/2018 per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-7 for project period 06/01/2005 – 10/30/2020.

COH Project Manager: Dora Beck

**EPA Project Officer: Kate Rao (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 7, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

**Dates of violation: Ongoing during period of Grant Condition P1. from date of award 09/20/2005 through current Grant Period commencing 05/30/2018**

**EPA DISCRETIONARY ACTION IN VIOLATION OF ESA:**

1) EPA FAILED TO TAKE EARLY HARD LOOK AT THE KAU PROJECTS AS REQUIRED BY NEPA AND CONSEQUENTLY FAILED TO COMPLY WITH ESA

In the original EPA-COH Grant Agreement Section P1 dated Sept. 20, 2005 (XP-96942401-0), EPA was first required to comply with NEPA “and other environmental cross-cutters” – including the ESA. Seven Grant Agreement revisions have resulted in splitting the original Naalehu and Pahala Projects, both requiring the EPA NEPA/cross-cutters ESA environmental review procedures, into two separate EPA WWTP Work Plans, only one of which will require ESA Section 7 consultation process. In the response to EPA from FWS, the need for a Naalehu ESA process, like what was occurring for Pahala, was expressed.

NEPA requires Federal agencies, including the EPA, to prepare a “detailed statement” prior to approving any “major federal action significantly affecting the quality of the human environment. 42 CFR 4332(2)(c). “The requirement to prepare an environmental impact statement creates a democratic decisionmaking process that assures that agency decisionmakers and the public review and carefully consider detailed information about environmental impacts before any decision is made. Agencies must “[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment.” 40 CFR 1500.2(d) as cited in *Dine CARE v. BIA, Complaint*, Case3:16 cv-08077-SPL Doc. 1 Page 19,



2) EPA HAS SEPARATED THE KAU LCC CLOSURE GRANT XP-96942401[As Amended 0 through 7] INTO TWO SEPARATE PROJECTS AND REFUSED TO FOLLOW NEPA/ESA PROCEDURES THAT EPA FOLLOWED FOR THE PAHALA PROJECT DEA AS FOR THE NAALEHU WWTP WORK PLAN

No NEPA environmental review procedures have been followed since the original project – the LCC conversion to septic for all of the illegal Kau LCCs – provided Notice of the FEA/FONSI in August 23, 2007 issue of *TEN*. The original 2007 FEA/FONSI for both the Pahala and Naalehu LCC closures has never had a Supplemental Notice published to account for the obvious changes to the original Kau Cesspool Project.

Further since this Naalehu/Pahala 2007 FEA/FONSI never been Supplemented or Withdrawn as Noticed in *TEN*, it is inappropriate to publish the *TEN* Pahala DEA/AFNSI Notice on September 23, 2018 as part of the NEPA/HEPA requisite procedural review.

“To make an informed decision about how or whether to proceed with the proposed projects and to comply with NEPA, an agency must identify their potential combined environmental impacts and make that information available to the public.” *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

Therefore, I contend herein that the COHDEM proposed Naalehu WWS EA and the proposed Pahala WWS EIS/EID are legally inadequate because, being two separate studies and documents prepared at different points in time, fail to consider the aggregated and cumulative effects of the connected actions of the proposed wastewater sewage treatment projects on the human environment in the isolated and sparsely populated District of Ka’u.

CEQ regulations implementing NEPA “require that an agency consider ‘connected actions’ and ‘cumulative actions’ within a single EA or EIS.” *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1118 (9<sup>th</sup> Cir. 2000) (emphasis added) (citing 40 CFR 1508.25). Further, under 1508.25, two or more agency actions must be discussed in the same impact statement when they are “connected” or “cumulative” action. 40 CFR 1508.25(a)(1),(2) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

A cumulative impact is defined in NEPA’s implementing regulations as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . . Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 CFR 1508.7.

For “connected” and “cumulative” actions, the agency is told it “should” analyze them in a single impact statement, which the 9<sup>th</sup> Circuit interpreted as a mandatory requirement. See *Eagle Island Institute v. USFS*, 351 F.3d 1291 (9<sup>th</sup> Cir. 2003) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

3) EPA HAS PUBLISHED NOTICE OF AVAILABILITY OF THE PAHALA DEA PUBLIC COMMENT PERIOD WITHOUT CONSIDERING THE CUMULATIVE EFFECTS OF THE AOC TWIN WWTP WORK PLANS WHICH SPECIFY BUILDING TWO SECONDARY SEWAGE TREATMENT PLANTS JUST 11 MILES APART IN REMOTE, RURAL KAU BEFORE APRIL 17, 2022

Despite Kate Rao approving EPA SAAP funding for the original Ka’u LCC to LCSS conversion projects, she has permitted the Naalehu Work Plan to be implemented in violation of NEPA, and failed to enact ESA Section 7 consultation with FWS, as she did with Pahala, designating ERG to do this ESA in the June 7, 2018 letter. By allowing avoidance of consideration of cumulative impacts and avoiding NEPA and ESA statutes, Ms. Rao has allowed the separation of the two Ka’u new-build WWTPs with no aggregation of impacts on the numerous affected endangered plants and wildlife and apparently intentionally avoiding any NEPA cumulative impact analysis. (“[T]he district court properly determined that the Forest Service violated the ESA when it decided not to reinstate consultation after the FWS revised its critical habitat designation...” *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015)).

In *Cottonwood*, the Forest Service contended that “[t]he EA or EIS on each action . . . will document the cumulative impacts of that action and all previous actions.” The Court believed “that consideration of cumulative impacts after the road has already been approved is insufficient to fulfill the mandate of NEPA. A central purpose of the EIS is to force the consideration of environmental impacts in the decisionmaking process. See, e.g., *Columbia Basin Land Protection Ass’n v. Schlesinger*, 643 F.2d 585 (9<sup>th</sup> Cir. 1981); *City of Davis v. Coleman*, 521 F.2d 661 (9<sup>th</sup> Cir. 1975); *Lathan v. Brinegar*, 506 F.2d 677,693 (9<sup>th</sup> Cir. 1974) (*en banc*);

*Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109, 1113-1114 (D.C.Cir. 1971). That purpose requires that the NEPA process be integrated with agency planning 'at the earliest possible time,' 40 C.F.R. 1501.2, and the purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step is already taken." *Thomas v. Peterson*, 753 F.2d 754, 760 (9<sup>th</sup> Cir. 1985).

Because the EPA has taken specific steps to change the EPA-COH Grant Assistance Amendments for XP-96942401, as demonstrated by the May 30, 2018 amendment #7, which result in effectively evading the same NEPA/ESA procedures on the Naalehu WWTP Project by simply moving the EPA statutory obligations 11 miles away to the twin Pahala WWTP Project, I hereby give Notice of a pending citizen suit under the ESA.

Herein I object to the EPA failure to implement the ESA Sec. 7 consultation for Naalehu as Kate Rao did for Pahala and request that before there is any decisions on either Project, that the EPA-COH be required to provide the same ESA Section 7 consultation and issuance of a Biological Opinion covering the cumulative actions that will "jeopardize the continued existence" of multiple Hawaiian endangered creatures and plants for both the Pahala and the Naalehu WWTP Projects.

I declare under penalty of perjury that the forgoing is true and correct.

Dated: September 24, 2018 at Naalehu, Hawaii

s/Sandra Demoruelle  
SANDRA DEMORUELLE

SANDRA DEMORUELLE  
P.O. Box 588  
Naalehu, HI 96772  
Tel. No. 808/929-9244  
Email: naalehutheatre@yahoo.com

Case #:  
Environmental Court

IN THE CIRCUIT COURT OF THE THIRD CIRCUIT  
STATE OF HAWAII

SANDRA L. DEMORUELLE, <i>Pro Se</i>	)	
	)	
PLAINTIFF	)	
	)	
- v -	)	
DORA BECK, P.E. et al.	)	PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION WITH MEMORANDUM OF LAW.
	)	
DEFENDANTS	)	
	)	

PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

COMES NOW Plaintiff *pro se*, Sandra L. Demoruelle, who moves for a Preliminary Injunction halting all County of Hawaii planning and development activities on the Naalehu and Pahala Wastewater Treatment Plant Projects until the Environmental Assessments with the Finding of No Significant Impact ("FEA/FONSI") or Final Environmental Impact Statement are accepted. Plaintiff also seeks release of the Naalehu Draft Environmental Assessment ("DEA") under Uniform Information Practices Act ("UIPA") Hawaii Revised

Statutes 92f *et seq.* and immediate publication of notice for both DEAs in Office of Environmental Quality Control's *The Environmental Notice* on September 23, 2018.

In support of this Motion for Preliminary Injunction, Plaintiff relies upon the accompanying Memorandum of Law, Exhibits 1 through 23, and her Declaration in Lieu of an Affidavit

Plaintiff moves for a Preliminary Injunction on the ground that the County of Hawaii Department of Environmental Management through its officers, Dora Beck, P.E., Division Chief of the Wastewater Division and Director William A. Kucharski, has "[p]urposely or not"<sup>1</sup> failed to take "a hard look"<sup>2</sup> at their proposals for building two full-sized secondary sewage treatment plants, with one sited adjoining the Naalehu Elementary School, in the District of Ka'u, so, therefore, Plaintiff is entitled to judgment as a matter of law.

## CONCLUSION

Because the Plaintiff has proven in her pleadings that the officers of the County of Hawaii Department of Environmental Management ("COHDEM") have violated HRS 343 *et seq.* and the Hawaii UIPA, she respectfully requests

that the Court Order the Preliminary Injunction that will halt all COHDEM activities and expenditures on any and all implementation actions and consultant and sub-consultant contracts. COH shall provide the staff to complete the EA on both projects, and if significant impacts are determined, to produce and publish the Final EIS for acceptance by the Governor.

Further, as relief to the Plaintiff's injuries because the COHDEM failed to publish the DEAs and provide the Plaintiff and the two Ka'u libraries with copies of the DEAs, it is also ordered that COHDEM submit the DEAs to Hawaii Office of Environmental Quality Control by September 12<sup>th</sup> for *TEN* publication on September 23<sup>rd</sup>, 2018, and immediately provide the document to the Plaintiff and the Ka'u libraries under the UIPA requests.

The Plaintiff, on behalf of the whole Ka'u community, requests that the Court order that until the FEIS for both the Naalehu and Pahala Wastewater Treatment Plants have been accepted by the appropriate HRS 343 accepting authority, the COHDEM is to take no further actions to develop or site these sewage treatment plant projects under Order of this Court.

Dated: August 21, 2018 at Naalehu, Hawaii

Plaintiff:

Sandra Lee Demoruelle, *Pro Se*

<sup>1</sup> *Sierra Club v. Department of Transport (Superferry I)*, 167 P.3d 292, 335 (2007).

<sup>2</sup> *Id.* (citing *Price v. Obayashi Haw. Corp.*, 81 Haw. 171, 182 n. 12, 914 P.2d 1364, 1375 n. 12(1996)(citation omitted)).



10349-01  
March 6, 2020

ref (18)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka‘u, Hawai‘i  
Response to Comment – October 10, 2018 10:50 p.m.

Dear Ms. Demoruelle:

Thank you for your October 10, 2018 10:50 p.m. comment message regarding the County of Hawai‘i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

There is no requirement under Chapter 343, Hawaii Revised Statutes, as amended, or Hawaii Administrative Rules (HAR), Title 11, Chapter 200 that proposed wastewater treatment plants must be reviewed through an environmental impact statement (EIS). Pursuant to Section 11-200-11.1, “(a) After preparing an environmental assessment and reviewing public and agency comments, if any, applying the significance criteria in section 11-200-12, if the proposing agency...anticipates that the proposed action is not likely to have a significant effect, it shall issue a notice of determination which shall be an anticipated negative declaration subject to the public review provisions of section 11-200-9.1.” As stated in the Pāhala Large Capacity Cesspool Replacement Draft EA Preface, this Draft EA was published in compliance with HAR 11-200.

HAR 11-200-10, Contents of an environmental assessment, does not specify a number of pages for an EA.

Other references are not comments to content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#19

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct19-2018  
**Sent:** Friday, October 12, 2018 10:20 AM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck; eplan1@aol.com  
clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan;  
iconstantinescu@brwncald.com; John Sakaguchi; Bhat Simi (ENRD); TESSA BERMAN;  
kaena.horowitz@hawaiicounty.gov; Joe Kamelamela; Bob Martin; Albanese Michael  
(USAHI); David Albright; Linda Morgan; Ka'u Calendar News; The Ka'u Calendar  
Newspaper and Daily News Briefs; Nancy Cook Lauer; mail@environment-hawaii.org;  
Shannon Rudolph  
**Subject:** Cease and Desist the Invasion of My Privacy

Several members of the Ka'u community have informed me that the "public participation" sub-contractor, Bernadette Senelly, has approached them requesting personal information about me, Sandra Demoruelle. This is invading my privacy as I have never called any contractor/sub-contractor/public officials' immediate community seeking personal information on them because I would consider such behavior criminal invasion.

Please be on notice that I am asking Pele Defense Fund to provide me with Counsel, and seeking their guidance in reporting these activities to the local FBI Public Corruption Officer to request the FBI's assistance in investigating what has happened to the Ka'u LCC Closure Project for over 13 years.

Any further invasion will be considered an intentional action and be reported to the local police. as well.

Sincerely,  
/s Sandra Demoruelle  
SANDRA DEMORUELLE

Dated October, 12, 2018 at Naalehu, Hawaii

On Wednesday, October 10, 2018 10:50:05 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Dear Mr. Matsukawa,

The Pahala DEA meeting tonight was held without the aforementioned DEA volume present to consult.

It was like having a Bible study class without any Bibles!

Was I the only person in the room who has actually read the meager DEA offerings? I mean 21 blank pages and untold repetition makes about 50 real pages to read. But to read it, you have to have a real live volume of the DEA to read. None were present at the DEA meeting???!!

5

But not to worry! You will have hundreds of pages of comments to add bulk to your FEA - which will have yet another law suit since you did not go direct to EIS like ALL HAWAII WWTPS DO. Name one project without an EIS?!!!!

And you could very well lose your prelim inj. and no one will be paid for the meeting I so enjoyed tonight. But then, I didn't get paid, either.

Best, Sandra Demoruelle

On Monday, October 1, 2018 10:40:37 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
S/ Sandra Demoruelle  
SANDRA DEMORUELLE

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiros**, when her name is listed on the COH website as "**Maile Medeiros David**."

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

6

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 8.1 Page 8-17, so under 205-8(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

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10349-01  
March 6, 2020

ref (19)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 12, 2018 10:20 a.m.

Dear Ms. Demoruelle:

Thank you for your October 12, 2018 10:20 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment to content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#20

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**Sent:** Saturday, October 13, 2018 8:51 AM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck; eplan1@aol.com  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan;  
iconstantinescu@brwncald.com; John Sakaguchi; Bhat Simi (ENRD); TESSA BERMAN;  
kaena.horowitz@hawaiicounty.gov; Joe Kamelamela; Bob Martin; Albanese Michael  
(USAHI); David Albright; Linda Morgan; Ka'u Calendar News; The Ka'u Calendar  
Newspaper and Daily News Briefs; Nancy Cook Lauer; mail@environment-hawaii.org;  
Shannon Rudolph  
**Subject:** Re: Cease and Desist the Invasion of My Privacy - CORRECTION

I was in error stating I would be consulting Pele Defense Fund - I have been informed that is not occurring. I apologize to all who were affected by my erroneous claim. Pele Defense Fund is harmless, I am the one totally at fault for any misunderstanding. *Mea culpa!*

So correctly, re-stating my position:

Brown and Caldwell Sub-contractor Bernadette Senelly has been inquiring about me and I am placing everyone on notice that I am a private person by nature of my upbringing and have nothing to hide. But since I do not share private things like sex or finances with anyone - no Facebook persona for example - I find it offensive to have Bernadette Senelly make inquiries about me within Ka'u for any purpose. It comes to mind that she is seeking "dirt" to cause me harm, but she has driven me to paranoia with her ongoing traumatizing of me, so I have been informed that I may be overreacting.

**In any case, my personal emotional distress from the Brown and Caldwell Ka'u "outreach" activities pales when compared to the harm being done to the whole community!!**

**Everyone in Ka'u wants to know the truth about the LCC Closure fiasco and we will continue to seek legitimate investigation of the 13 year ordeal. Either the County Council will request an audit or I will take my evidence of malfeasance to the FBI.**

Please let me know so I can take appropriate action on my own.

Sincerely, Sandra Demoruelle

On Friday, October 12, 2018 10:19:49 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Several members of the Ka'u community have informed me that the "public participation" sub-contractor, Bernadette Senelly, has approached them requesting personal information about me, Sandra Demoruelle. This is invading my privacy as I have never called any contractor/sub-contractor/public officials' immediate community seeking personal information on them because I would consider such behavior criminal invasion.

Please be on notice that I am asking Pele Defense Fund to provide me with Counsel, and seeking their guidance in reporting these activities to the local FBI Public Corruption Officer to request the

FBI's assistance in investigating what has happened to the Ka'u LCC Closure Project for over 13 years.

Any further invasion will be considered an intentional action and be reported to the local police. as well.

Sincerely,  
/s Sandra Demoruelle  
SANDRA DEMORUELLE

Dated October, 12, 2018 at Naalehu, Hawaii

On Wednesday, October 10, 2018 10:50:05 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Dear Mr. Matsukawa,

The Pahala DEA meeting tonight was held without the aforementioned DEA volume present to consult.

It was like having a Bible study class without any Bibles!

Was I the only person in the room who has actually read the meager DEA offerings? I mean 21 blank pages and untold repetition makes about 50 real pages to read. But to read it, you have to have a real live volume of the DEA to read. None were present at the DEA meeting???!!!

But not to worry! You will have hundreds of pages of comments to add bulk to your FEA - which will have yet another law suit since you did not go direct to EIS like ALL HAWAII WWTPS DO. Name one project without an EIS?!!!

And you could very well lose your prelim inj. and no one will be paid for the meeting I so enjoyed tonight. But then, I didn't get paid, either.

Best, Sandra Demoruelle

On Monday, October 1, 2018 10:40:37 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
S/ Sandra Demoruelle  
SANDRA DEMORUELLE

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii

borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiros, when her name is listed on the COH website as "Maile Medeiros David."**

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

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SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

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10349-01  
March 6, 2020

ref (20)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 13, 2018 8:51 a.m.

Dear Ms. Demoruelle:

Thank you for your October 13, 2018 8:51 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#21

#21

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct22-2018  
**Sent:** Sunday, October 21, 2018 4:12 PM  
**To:** clekven@brwnald.com; Irina Constantinescu; Kim Wagoner; Patrick Goodwin; braden.rosenberg@erg.com; Earl Matsukawa; Public Comment; John Sakaguchi; eplan1@aol.com  
**Subject:** Fw: Courtesy copy of PI Reply  
**Attachments:** COH\_PI\_REPLY.docx

SANDRA L. DEMORUELLE  
P.O. Box 588  
Naalehu, HI 96772  
Tel. No. 808/929-9244  
Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

BTW, if the PI is granted, you don't get paid. Lucky for you, I am having trouble finding a mass/tort attorney, but someone will be attracted to this cause. Its all God's Will. Best, Sandra Demoruelle

----- Forwarded Message -----

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**To:** kaena.horowitz@hawaiicounty.gov <kaena.horowitz@hawaiicounty.gov>  
**Cc:** William Kucharski <william.kucharski@hawaiicounty.gov>; Dora Beck <dora.beck@hawaiicounty.gov>; TESSA BERMAN <berman.tessa@epa.gov>; Joe Kamelamela <joe.kamelamela@hawaiicounty.gov>  
**Sent:** Sunday, October 21, 2018 03:59:54 PM HST  
**Subject:** Courtesy copy of PI Reply

Aloha, Am I going to have to tell the Court that you never made any attempt to even TALK to me about this case?

Best, Sandra Demoruelle

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Case #: 18-1-00206  
Environmental Court

IN THE CIRCUIT COURT OF THE THIRD CIRCUIT  
STATE OF HAWAII

SANDRA L. DEMORUELLE, <i>Pro Se</i> PLAINTIFF	)	REPLY TO DEFENDANTS' OPPOSITION TO MOTION FOR PRELIMINARY INJUNCTION; CERTIFICATE OF SERVICE
- v. -	)	
DORA BECK, P.E. and WILLIAM A. KUCHARSKI,	)	
DEFENDANTS	)	
	)	
		Hearing: October 25, 2018 Time: 8:30 a.m. The Honorable Greg K. Nakamura

REPLY TO DEFENDANTS' OPPOSITION TO MOTION FOR PRELIMINARY  
INJUNCTION

The Plaintiff, Sandra L. Demoruelle, herein replies to the *Defendants Dora Beck, P.E. and William Kucharski's Memorandum in Opposition to Plaintiff's Motion for Preliminary Injunction*. The Plaintiff filed its Motion for Preliminary Injunction seeking to enjoin and restrain Defendants during the pendency of this action, and for publication of the Naalehu and Pahala Wastewater Treatment Plant Draft Environmental Assessment ("DEA") documents.

**I. STIPULATED FACTS – Naalehu and Pahala LCC Closure Project and the AOC**

- A. Defendants' Exhibit A titled *Naalehu and Pahala Villages Large Capacity Cesspool Conversion Project* and dated August 2007 prepared for the County of Hawaii Department of Environmental Management is the actual Final Environmental Assessment with a Finding of No Significant Impact ("FEA/FONSI") published in *The Environmental Notice ("TEN")* on August 23, 2007 and it has never been withdrawn or supplemented since that date.
- B. The reason the FEA/FONSI was completed was because this single "project is subject to the environmental documentation requirements prescribed under Chapter 343, Environmental Impact Statements, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200 (Environmental Impact Statement Rules) of the State Department of Health's (DOH) Administrative Rules (HAR)." (Def. Memo of Opp. Ex. A, P. 5, Sec. 1.1.2).
- C. Def. Memo of Opp. Ex. A on page 24 states the Naalehu Service Area of 164 parcels would generate a sewage flow rate of 103,800 gallons per day and the Pahala Service Area of 127 parcels would generate approximately 117,300 gallons of sewage flow per day.
- D. Because of the cost consideration, DOH and all other parties "[a]pproved individual wastewater systems consisting of septic tanks will be used for the treatment of wastewater collected. Effluent from the septic tanks will be disposed through the use of seepage pits or leach fields to allow the effluent to percolate into the ground." *Id.*
- E. In considering alternatives to the FEA/FONSI approved large capacity septic, the County of Hawaii Department of Environmental Management ("COHDEM") considered other community wastewater systems "such as small aerobic package treatment and disposal systems." "However, the residents from the Naalehu and Pahala community along with the County cannot practically afford the costs for constructing and operating such systems." *Id.* P. 25.
- F. The letter from the COH Department of Research and Development dated March 9, 2007 echoed the need to consider costs of the project: "4. The operation and maintenance costs of the proposed septic systems should be significantly lower than the operation and maintenance cost of mechanized secondary wastewater treatment plants such as that of the wastewater treatment plant in Hilo. Therefore, the user fees for the residents of Naalehu and Pahala should be significantly lower than the current County rates." *Id.*
- G. The COHDEM explains the change from the FEA/FONSI approved Kau LCC Closure Project to two secondary treatment plants thus: "In 2008, based on poor soil percolation test results<sup>1</sup> for the disposal concept, the large capacity septic system was determined to not be a suitable option. Consequently, the County began exploring other land options that would accommodate a secondary treatment plant and disposal area that would

provide better wastewater treatment and be expandable for potential growth of the community." HID 1:18-cv-00172 JMS-KSC Document 25-10 Page 4, Sec. #1 (the so-called *Pahala Grant Work Plan* which was dated the same as the AOC Attachment A Pahala Work Plan on April 21, 2017).

- H. The COHDEM went from this single LCC closure project with a FEA/FONSI to two new-build, four lagoon, secondary sewage treatment plants with significantly higher costs as described in "F." above without any timely environmental review of the two newly proposed projects from 2008 to present day, including the Pahala DEA, which only considers siting of the secondary sewage treatment plant to close the LCC for 109 households without considering decentralized options.
  - I. Therefore, the present suit is because COHDEM failed to implement the FEA/FONSI project construction that was to have begun in 2008 and ended with the closure of all COH-owned, Large Capacity Cesspools ("LCC") in Kau, which would have been completed by 2009, and do environmental review on their two new projects. *Id.* P. 32.

**II. STIPULATED FACTS – Naalehu Revised Workplan/Opportunity to Participate**

- A. The *Naalehu Project Schedule* showed in Section 3.2.4 of Def. Opp. Memo. Ex. D that two additional meetings were to have been held between May 28 and July 27, 2018, but were not held.
- B. The *Naalehu Project Schedule* showed in Section 5.1 of the "HRS 343 EA Process" in the Def. Opp. Memo. Ex. D, highlighted on Opposition Memorandum on page 3, that two additional meetings were to have been held between August 27 and October 25, 2018, but again, no meetings were held as required by the AOC time line.

**III. ARGUMENT**

- A. The AOC Sec. states: COH Cannot Rely on AOC for Relief

The AOC itself states that "[c]ompliance with this Consent Order shall not be a defense to any actions commenced pursuant to applicable laws, regulations, or permits, nor does it constitute a release." If it were otherwise, the COHDEM original timelines requiring acquisition of the County's preferred sites in Naalehu and Pahala before any EA/EIS was completed would not have needed the revision approved in Def. Ex. B, said to be needed to accommodate the HRS 343, as cited to Director Kucharski on Page 1 Paragraph 2 of Ex. B.

<sup>1</sup> Cf. The Def. Ex. A, P. 39, Sec. 3.1.2 states that two separate soil tests by SCS and Masa Fujioka and Associates findings were consistent for both the Naalehu and Pahala project areas.

If the AOC did not constitute a release for the purchase of the chosen site land prior to environmental review, the AOC cannot constitute a release from any other HRS 343 requirement, including denying the requirement for an “early hard look.”

B. COHDEM Failed to Withdraw or Supplement FEA/FONSI

Plaintiff has directly told Defendant, William Kucharski, that COHDEM has failed to consider the change from the FEA approved LCC conversion to two separate secondary wastewater treatment plants. The detailed minutes of the June 27, 2018, COH Environmental Management Commission (“EMC”) meeting document the following exchange:

Director Kucharski: ...”In the initial stages, the [LCC conversion to septic] option was thought to be acceptable, however when they did their final testing, the technical evaluation determined that this is not an acceptable site. We cannot construct this facility here. So we are left with an initial okay, let’s try to do this. But then technically, it doesn’t work. Okay? **And so we are back to the drawing board.**<sup>2</sup> We’re in the situation now. We know the technology. Where we are going to put it is not yet determined. We’ve looked at over 30 sites in Naalehu alone. ...”

Ms. Demoruelle: There has never been – what he’s talking about is site selection [for] something that has not been [environmentally] reviewed. There has never been an EIS on the [sewage] treatment system. ... He’s saying do you want the sewage system treatment plant beside your [Naalehu Elementary] school, or do you want it somewhere else? He’s not allowing us a review of the sewage treatment system. They went from the LCC conversion to septic, and then all of a sudden, with no – just because they [COHDEM] said it’s not suitable for the site that they were going to put the septic – they just suddenly went to two [new-build] wastewater treatment plants. **And that’s what Mr. Kucharski hasn’t addressed, is when are you going to do the EIS on these projects themselves? Not the siting of the project, but the project itself? ...**

... You don’t do EAs after the [fact]. I can cite you the law. EISs are done early in the process, early[!] And the decision not to do an EIS on these two projects was made in the wastewater treatment department. Dora Beck, who is not here to discuss this with us today, as to why she changed from having the simple project, the sewage septic conversion, which may or may not be [needed], because they will not share with me the actual results of their [2008] studies. They won’t give us the

<sup>2</sup> According to HRS 343/HAR 11-200, it is at this point that the COHDEM were procedurally required to either supplement or withdraw the August 2007 FEA.

studies, put them in our library so we can review them ourselves. **He’s just saying “trust me, we really do need two sewage treatment plants in Kau.” And I am saying “I really do not trust that.”** I have an FEA in front of me that shows that the sewage, septic, was going to be fine. So why – somewhere show me the paperwork that shows that we do need two sewage treatment plants.

At another point in the June 27<sup>th</sup> EMC meeting, Director Kucharski was directly asked if the siting of the secondary wastewater treatment plant with four lagoons located adjacent to the Naalehu Elementary School was “off the table.” The June 27<sup>th</sup> EMC minutes state:

Commissioner Osborne: So is the [Naalehu Elementary] school off the table, then, is the school site off the table or is it still being considered?

Director Kucharski: When you do an EIS or an EA, you need to provide alternative sites for the process, whatever it is you’re looking to do. So until the EA, the EIS, has started for this final location, completed, and a draft is put out, nothing is off the table.”

Director Kucharski has made clear at other EMC meetings that the EA/EIS is to justify, but HAR 11-200.1-1(b) states that the EIS shall not be merely a self-serving recitation of benefits and a rationalization of the proposed action.

The Defendant, COHDEM Director William Kucharski said he has failed to do an “early” EA or EIS on the Naalehu Project because he cannot decide on his preferred site. Director Kucharski is stuck because he continues using the EA document as a rationalization for his pre-chosen alternative, and factually, for many years, COHDEM has looked at over 30 sites without deciding upon an alternative to the Naalehu Elementary School site. As Defendant Kucharski says: “*you have to go through a justification as to how you got to that preferred site ...*,” showing he is in violation of Hawaii statutes and regulations.<sup>3</sup>

<sup>3</sup> Director Kucharski statement in the County of Hawaii Environmental Management Commission meeting minutes of June 27, 2018 [approved as presented July 26, 2018], Page 26.

By waiting thirteen years to even begin preparation of the requisite “early” environmental review documents, the agencies are merely rationalizing and justifying their decisions which have been and are currently being made without any consideration of the environmental effects. EPA has shown that it failed to grasp the fact that environmental review laws are “procedural” by allowing COHDEM Director Kucharski to determine that an EA cannot even be started for the pre-determined wastewater treatment projects until the County has done site-specific environmental studies, which is after the fact rationalization. Word-for-word, Director Kucharski said: “*In an EA you come up with a preferred alternative, and that preferred alternative is what all of the environmental studies and impacts are centered around. And you have to go through a justification as to how you got to that preferred site. And that is the process.*” Director Kucharski statement in the County of Hawaii Environmental Management Commission meeting minutes of June 27, 2018 [approved as presented July 26, 2018], Page 26.

C. Naalehu DEA Document Exists

Plaintiff read about the Naalehu DEA in the AOC Attachment B, the Naalehu WWS Work Plan on Page 3, and again when it was publicly announced in a County press release printed in the local monthly newspaper, *The Ka'u Calendar*, June 2018 (see Plain. Ex. 17). It is this document that is requested under UIPA.

D. Defendants Failed to Offer the Meaningful Opportunity to Participate

The COHDEM provided empty promises to the public and the Plaintiff in stating that the COHDEM provided “meaningful opportunities” for public participation. Since none of the four meetings shown on the Naalehu Work Plan time line have occurred, the Plaintiff and the rest of

the community have suffered concrete injuries from Defendants’ mendacity in telling the Court that they are offering any “meaningful opportunity to participate.”

**IV. PRELIMINARY INJUNCTION: COHDEM Continue EA/EIS Procedures Without Contractors/Sub-contractors**

Plaintiff seeks to have the current Contractors and Sub-contractors, who have wronged the Kau community in general and the Plaintiff in particular, discharged from further development and siting activities. Plaintiff does not seek to stop the COHDEM from continuing the environmental review of the change of the original, single LCC closure project to consider other infrastructure options, especially in light of improved wastewater treatment technology and Act 131-18.<sup>4</sup>

Plaintiff argues that since the County taxpayers are paying millions of dollars for Contractors/Sub-contractors who are doing a very bad job of following the laws, at least the COHDEM staff could do a bad job at a cheaper cost.

The exact relief Plaintiff seeks through the Preliminary Injunction:

1) *Defendants immediately release to Plaintiff the Naalehu Wastewater System Draft Environmental Assessment (“DEA”) as requested under Uniform Information Practices Act, HRS 92F et seq., and immediately submit and publish notice of the Naalehu and the Pahala Wastewater Plant DEAs in Hawaii Office of Environmental Quality Control’s “The Environmental Notice” as required by HRS 343-3(d).*

2) *County of Hawaii immediately to cease any and all County expenditures on consultant and sub-consultant contractors and halt all planning and development activities on the Naalehu and Pahala Wastewater Treatment Plant (“WWTP”) Projects during the pendency of this action or until the requisite HRS 343 Final Environmental Assessments with the Finding of No Significant Impact (“FEA/FONSI”) or Final Environmental Impact Statement (“FEIS”) are accepted, whichever occurs first, as the public interest in being heard on the Ka’u WWTP*

<sup>4</sup> Act 131, dated July 5, 2018, limiting underground injection and providing that, generally, no permits will be issued for sewage wastewater injection wells.

*Projects will be harmed by the irretrievable investment of resources in proceeding on the siting and planning activities. Further, until the final Court decision or the FEA/FONSI or FEIS are accepted, and since the present consultants and sub-consultants failed to follow statutory environmental review procedures, the County of Hawaii will use its own personnel to carry out the HRS 343 statutory environmental review procedures, and provide the requisite public participation for these LCC Closure Projects as required by the Ka'u CDP and HEPA HRS 343 et seq.*

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT, on this date and by the method of service noted below, a true and correct copy of the Plaintiff's Opposition to Defendants' Motion to Dismiss were served on the following at their last known address:

Served via postage pre-paid U.S. Mail.

Dora Beck, P.E.  
Division chief, Wastewater Division  
County of Hawaii Department of Environmental Management  
108 Railroad Avenue  
Hilo, Hawaii 96720  
Fax: 961-8644

William A. Kucharski  
Director, County of Hawaii Department of Environmental Management  
345 Kekuanaoa Street, Suite 41  
Hilo, Hawaii 96720  
Fax: 961-8086

Corporation Counsel  
101 Aupuni Street Unit 325  
Hilo Hawaii 96720  
Fax: 961-8622

Dated: October 21, 2018 at Naalehu, Hawaii

SANDRA LEE DEMORUELLE, *Pro Se*

For the reasons given in its pleadings, Plaintiff respectfully requests the Court order a Preliminary Injunction to enjoin and restrain Defendants during the pendency of this action, and for publication of the Naalehu and Pahala Wastewater Treatment Plant Draft Environmental Assessment documents,

Dated: October 21, 2018 at Naalehu, Hawaii.

Plaintiff:

SANDRA LEE DEMORUELLE, *Pro Se*



10349-01  
March 6, 2020

ref (21)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

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Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
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K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#22

#22

**Earl Matsukawa**

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct25-2108  
**Sent:** Wednesday, October 24, 2018 4:03 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan;  
iconstantinescu@brwncald.com; John Sakaguchi; TESSA BERMAN; eplan1@aol.com; Bob  
Martin; David Albright; Linda Morgan; Ka'u Calendar News; The Ka'u Calendar  
Newspaper and Daily News Briefs; Nancy Cook Lauer; mail@environment-hawaii.org;  
Shannon Rudolph; Senator Hirono (mailto:); Senator Hirono's Office;  
sengreen@capitol.hawaii.gov; HI Office of Environmental Quality Control;  
tnapeahi@yahoo.com; Solali Hanao  
**Subject:** Re: The Ka'u Community's Request to Extend the date for Pahala DEA/AFNSI comments  
**Attachments:** Pahala\_Hwy11\_Culvert.zip

Dear Mr. Matsukawa,

Because we in Ka'u have so many concerns that we have not been able to write into comments as yet - I myself have not even started on my concerns with the costs in the PER - I know a request has gone out for more time to comment.

With that in mind, I will continue to submit comments.

Like so many other people, I am concerned with the ACTUAL flooding potential of the water that flows through the culvert from the mac nut orchard where you want to place the four open sewage lagoons. All you COHDEM Contractors and Sub-contractors seemed totally unaware that this culvert even exists, so I am attaching pictures of it to prove it does exist.

I will continue submitting Pahala DEA comments because I have not had time to write up all my comments as yet - and we all deserve a chance to have our concerns fully heard on the two WWTPs in Kau - even if you are illegally making us do it one project at a time.

**We will be suing on this forever!** And maybe tomorrow **the snotty attitude of Corporate Counsel** will make the Judge sympathetic to this old lady!

To my Friends - pray that tomorrow in Hilo Courtroom 3E, I can speak truth to power, successfully. Aloha pumehana, Sandy Demoruelle

On Tuesday, October 23, 2018 02:47:36 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

I have not received any confirmation as was said would occur. Sandra Demoruelle

On Wednesday, October 10, 2018 10:50:05 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Dear Mr. Matsukawa,

The Pahala DEA meeting tonight was held without the aforementioned DEA volume present to consult.

It was like having a Bible study class without any Bibles!

Was I the only person in the room who has actually read the meager DEA offerings? I mean 21 blank pages and untold repetition makes about 50 real pages to read. But to read it, you have to have a real live volume of the DEA to read. None were present at the DEA meeting???!?!?

But not to worry! You will have hundreds of pages of comments to add bulk to your FEA - which will have yet another law suit since you did not go direct to EIS like ALL HAWAII WWTPS DO. Name one project without an EIS?!!!

And you could very well lose your prelim inj. and no one will be paid for the meeting I so enjoyed tonight. But then, I didn't get paid, either.

Best, Sandra Demoruelle

On Monday, October 1, 2018 10:40:37 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
S/ Sandra Demoruelle  
SANDRA DEMORUELLE

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle



SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiro, when her name is listed on the COH website as "Maile Medeiros David."**

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

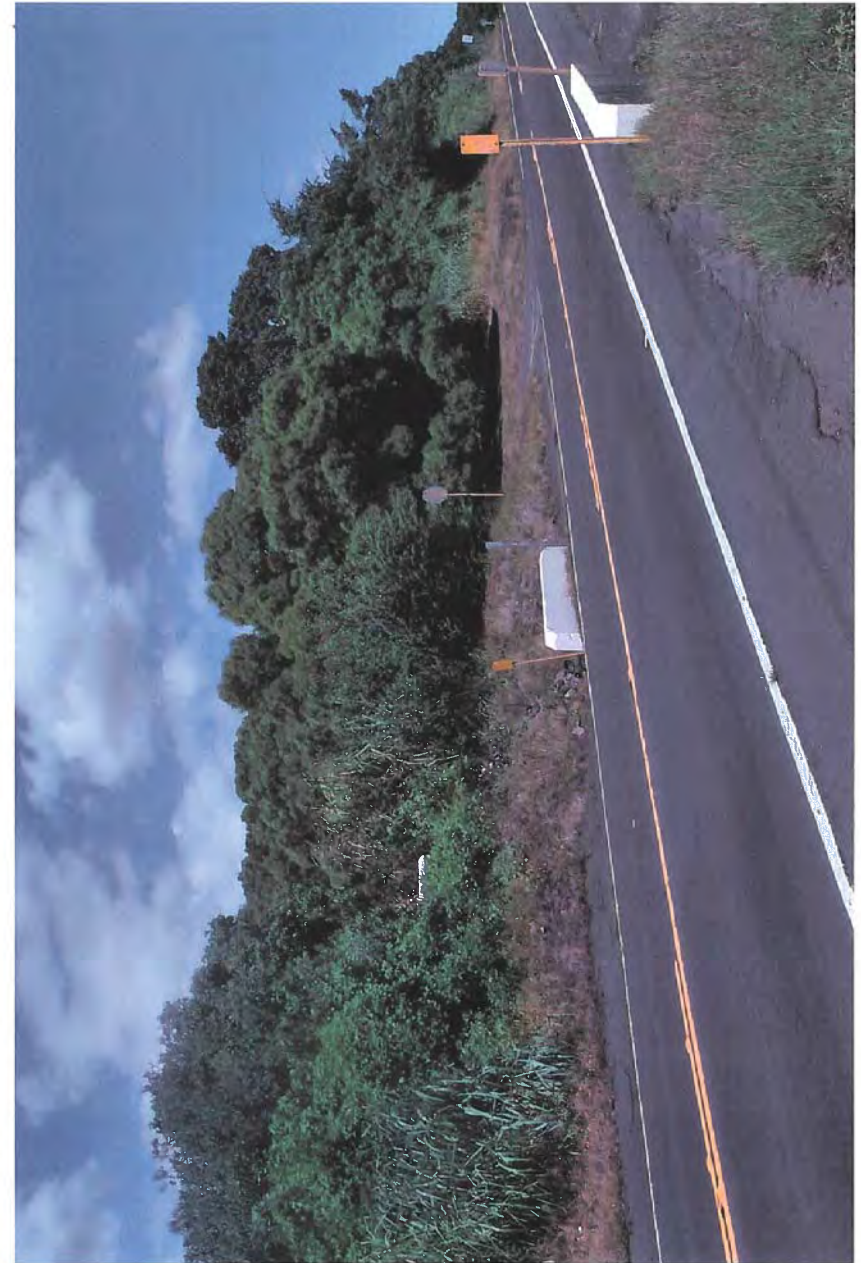
Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehuthatre@yahoo.com> wrote:

--

This message has been scanned for viruses and dangerous content using **Worry-Free Mail Security**, and is believed to be clean. [Click here to report this message as spam.](#)







10349-01  
March 6, 2020

ref (22)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Kaʻu, Hawaiʻi  
Response to Comment – October 24, 2018 4:03 p.m.

Dear Ms. Demoruelle:

Thank you for your October 24, 2018 4:03 p.m. comment message regarding the County of Hawaiʻi Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

The County is aware of two existing culverts that allow stormwater to flow across the Māmalahoa Highway in the vicinity of the project. The first is a box culvert located at the intersection with Maile Street that conveys stormwater under the highway. The second culvert is located approximately 600 feet east of the Maile Street intersection and was used to convey sugar mill flume water across the highway for disposal.

The Draft EA Section 3.9.1 (a) states:

“The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017 shows that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2-percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2-percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC-1 is very close to the edge of the 500-year floodplain.

On April 16, 2018, in response to the pre-assessment notification, the State of Hawaiʻi Department of Land and Natural Resources Engineering Division stated the responsibility for conducting research as to the flood hazard designation for the project site lies with the project proponent. Also on April 16, 2018 and in response to the pre-assessment notification, the

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

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Letter to Ms. Sandra Demoruelle  
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March 6, 2020

County of Hawaiʻi Department of Public Works confirmed that the proposed treatment and disposal project site at Site 7 is designated as *Zone X* on the FIRM and is outside the 500-year floodplain.”

The relevant FIRM panel is reproduced in Appendix B as Figure 4-13.

This information will be repeated in the Final EA.

The Draft EA Section 3.23.2 (a), states:

“The proposed wastewater treatment and disposal facility would include an on-site drainage system to address stormwater surface runoff created by new impervious surfaces within the facility. The site would include a system to collect runoff via grated inlets or swales, and flows would be conveyed to on-site drainage detention systems, such as subsurface linear infiltration or depressed detention basins.”

This information will be repeated in the Final EA.

The preferred alternative (Site 7) slopes from approximately north to south (mauka to makai) such that, during rain events, surface flows pass through the existing orchard to the southern (makai) end where the flows eventually drain through the culvert located at the Maile Street-Māmalahoa Highway intersection to the areas below (makai) the highway. Most of the land surface area below the existing macadamia nut orchard contains little to no vegetation to absorb or slow these flows. The gradient of Site 7 and surrounding area results in this natural pattern of surface flows which also existed when the area was planted in sugar cane and is not considered flooding.

Based on the roadway flooding concerns expressed by the community during the Pāhala public meetings held in December 2017 and October 2018, the State of Hawaiʻi Department of Transportation (DOT) Hawaiʻi District office was contacted to discuss drainage at the treatment and disposal facility project site and the culvert at the Maile Street and Māmalahoa Highway intersection. On February 20, 2019, the District office confirmed via telephone that the DOT owns and maintains the culvert at the Maile Street intersection, and that they have no record of the roadway being inundated by stormwater drainage during precipitation events at that location.

Stormwater runoff generated mauka of the treatment and disposal facility project site will be directed around the perimeter of the site via diversion swales that will convey flow back to the existing drainage pattern that flows to the existing culvert at Maile Street. During heavy rain events, stormwater may temporarily back up behind the culvert. There will be no changes to this culvert and the proposed treatment and disposal facility will not be located within the area of the culvert.

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As stated in the Draft EA, the on-site stormwater management system would meet the requirements of Hawai'i County Code (HCC), Chapter 27 Floodplain Management, Section 20, Standards for subdivisions and other developments (e) which mandates a site drainage plan to "comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected [design] storm event, as shown in the department of public works "Storm Drainage Standards"."

To meet the requirements of HCC, Chapter 27, Section 20 (f), the project "shall not alter the general drainage pattern above or below the development". Thus, for the design storm event, no increase in flow amount will be directed to either of the culverts at the highway as a result of the site development. A drainage study will be prepared during the design process to evaluate the improvements necessary to comply with HCC Chapter 27 requirements.

The wastewater treatment processes will be designed to accommodate the associated peak flows, including precipitation that falls on the area occupied by the aerated lagoon treatment system. The Draft EA Appendix B, Section 2.2 outlines the anticipated peak wastewater flows from the community, based on the applicable flow standard. The Draft EA Section 2.3.1, states the aerated lagoons will be lined to prevent water seepage through the bottom and sides of the lagoons. The Draft EA Appendix B, Section 5.3 shows the operational freeboard that will be available to contain and to equalize lagoon flows. In addition, the slow-rate land application groves will be designed to completely contain both peak effluent flows and precipitation from a 100-year, 24-hour storm event. A geotechnical engineering assessment of berm stability will be conducted during the design process. The tree groves will be designed in accordance with the EPA's "Process Design Manual, Land Treatment of Municipal Wastewater Effluents". Effluent will be applied at a hydraulic loading rate that is a small percentage of the percolation rate of the soil, ensuring sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event.

This information will be included in the Final EA

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 4  
March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#39

#26

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc oct 29-2018  
**Sent:** Tuesday, October 23, 2018 2:48 PM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin; braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan; iconstantinescu@brwncald.com; John Sakaguchi; Bhat Simi (ENRD); TESSA BERMAN; eplan1@aol.com; kaena.horowitz@hawaiicounty.gov; Joe Kamelamela; Bob Martin; Albanese Michael (USAH); David Albright; Linda Morgan; Ka'u Calendar News; The Ka'u Calendar Newspaper and Daily News Briefs; Nancy Cook Lauer; mail@environment-hawaii.org; Shannon Rudolph  
**Subject:** Pahala DEA comments with hard copies in the mail  
**Attachments:** COMMENTS\_Pahala\_DRAFT EA\_Joe\_Sandy\_Comments\_2.docx; COMMENTS\_Pahala\_DRAFT EA\_Joe\_Sandy\_Comments.docx; COMMENTS\_Pahala\_DRAFT EA\_Joe\_Sandy.docx; COMMENTS\_Pahala\_DRAFT EA\_Charles.docx; COMMENTS\_Pahala\_DRAFT EA\_lila.docx

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/s Sandra Demoruelle  
SANDRA DEMORUELLE

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/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

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/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

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--  
This message has been scanned for viruses and dangerous content by MailScanner, and is believed to be clean.



10349-01  
March 6, 2020

ref (39)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 23, 2018 2:48 p.m.

Dear Ms. Demoruelle:

Thank you for your October 23, 2018 2:48 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

This is not a comment to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

The attachment comments will be addressed under a separate cover.

We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read "Keola Cheng", is written over a light blue horizontal line.

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#46

KATE 47

From: Naalehu Theatre <naalehutheatre@yahoo.com>

woc 12-12-2018

Sent: Wednesday, October 31, 2018 8:03 PM

To: tessa@munekivohiraga.com

Cc: Rao, Kate <Rao.kate@epa.gov>; Dora Beck <dora.beck@hawaiicounty.gov>; HI Office of Environmental Quality Control <hiofficeofenvironmentalq@doh.hawaii.gov>; Albright, David <Albright.David@epa.gov>; Maile David <maile.david@hawaiicounty.gov>; Public Comment <pahalaea@wilsonokamoto.com>; Irina Constantinescu <irina.constantinescu@brwnald.com>; Kaena Horowitz <kaena.horowitz@hawaiicounty.gov>; BERMAN, TESSA <Berman.Tessa@epa.gov>; eplan1@aol.com

Subject: Your APA prize for the Ka'u CDP is a TOTAL JOKE!!!

Aloha,

The Hawaii County Planning announced that APA-Hawaii Chapter made an award for the totally ignored Ka'u CDP. A more obvious document produced just for the "looks" without actually impacting any "planning" activities could not be found.

It is laughable that APA-Hawaii thought anyone, like COHDEM, would actually IMPLEMENT it!!

The COHDEM is shoving two sewage plant projects - costing \$40.5 mill EACH! - down our throats and Ka'u is organizing and lawyering-up. So much for Ka'u CDP Policy 90 - involve the community and we will help raise money. What a laugh! The ink wasn't dry on the CDP before Brown and Caldwell was terrorizing us - as pictured attached below.

Everyone should re-consider the optics of awarding this prize for a CDP that is so totally ignored in practice - ALREADY!! The \$40.5 mill represents about \$250,000 per LCC/household closed and the homes are only worth about \$60,000.

For under \$10 mill, the homes could be purchased and save taxpayers the \$30 mill plus interest for 35 years. Doesn't the COHDEM "plan" to spend \$40 mill on a sewage plant for \$10 mill worth of housing sound downright stupid and not deserving of your "award?"

If you don't think I am accurate - just look for Policy 90 in the Pahala DEA. See if COHDEM gives a damn about what the Ka'u community thinks?

Most sincerely, Sandra Demoruelle



10349-01  
March 6, 2020

ref (46)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 31, 2018 8:03 p.m.

Dear Ms. Demoruelle:

Thank you for your October 31, 2018 8:03 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements of the Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#45

EA2246

From: Naalehu Theatre <naalehuthatre@yahoo.com>

woc 12-12-2018

Sent: Wednesday, October 31, 2018 8:13 PM

To: Public Comment <pahalaea@wilsonokamoto.com>; Dora Beck <dora.beck@hawaiicounty.gov>; Rao, Kate <Rao.kate@epa.gov>; Shareem, Jelani <SHAREEM.JELANI@EPA.GOV>

Subject: Since the Naalehu Project will cost \$40.5 mill. -or about \$250,000 per LCC household closed - how can this be an affordable option?

The Pahala Project is the twin of Naalehu and will cost a similar amount. How can the County justify spending over \$250,000 for each LCC/household closed.

The whole Ka'u community is concerned that these are totally excessive costs that will harm the economics of the County well into the future.

Much less expensive options must be found.

The solution should not cost more than the \$10 mill in property values - or the COH should just buy all the homes and save the \$30 mill in each town.

Sincerely, Sandra Demoruelle



10349-01  
March 6, 2020

ref (45)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'ū, Hawai'i  
Response to Comment – October 31, 2018 8:13 p.m.

Dear Ms. Demoruelle:

Thank you for your October 31, 2018 8:13 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

Hawai'i Administrative Rules (HAR) Title 11 Chapter 200-10 **Contents of an environmental assessment** does not include a requirement for evaluating the fiscal impacts of a project on a County's budget or ability to obtain funding.

The Nā'ālehu project is not the subject of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Earl Matsukawa, AICP  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
B. Rosenberg, ERG



#48

45

woc 12-17-2018

**From:** Naalehu Theatre <[naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)>  
**To:** David Albright <[albright.david@epa.gov](mailto:albright.david@epa.gov)>; shareem.jelanie@epa.gov <[shareem.jelanie@epa.gov](mailto:shareem.jelanie@epa.gov)>;  
Kate Rao <[rao.kate@epa.gov](mailto:rao.kate@epa.gov)>; Dora Beck <[dora.beck@hawaiicounty.gov](mailto:dora.beck@hawaiicounty.gov)>  
**Cc:** Sara Kamibayashi <[sara.kamibayashi@librarieshawaii.org](mailto:sara.kamibayashi@librarieshawaii.org)>; Maelene Kaapana  
<[maelene.kaapana@librarieshawaii.org](mailto:maelene.kaapana@librarieshawaii.org)>; Linda Morgan <[lindainhawaii65@gmail.com](mailto:lindainhawaii65@gmail.com)>; Bob Martin  
<[bmartin@naalehu.org](mailto:bmartin@naalehu.org)>; Maile David <[maile.david@hawaiicounty.gov](mailto:maile.david@hawaiicounty.gov)>; Ka'u Calendar News  
<[kaucalendarnews@gmail.com](mailto:kaucalendarnews@gmail.com)>  
**Sent:** Wednesday, October 31, 2018 11:39:24 AM HST  
**Subject:** Naalehu PER in Naalehu/Pahala Libraries?

Since this Naalehu Preliminary Engineering Report (PER) is a very important document that could potentially remove some of the terror that people have felt with the Naalehu School as a site for the sewage plant, has it been placed in the local libraries?

Attentive as I am to this issue, I did not know the Naalehu PER had been published Oct 26 because the Task 5.1 two meetings had not been held between August 27 and October 25, 2018 and the PER document isn't readily available at our libraries.

I remain extremely concerned as this property, like property #1 (Weatherford), is PONC land (see HCC Res. 650-18) under care of the Ala Kahakai group.

Sincerely, Sandra Demoruelle

----- Forwarded Message -----

**From:** Horowitz, Kaena <[Kaena.Horowitz@hawaiicounty.gov](mailto:Kaena.Horowitz@hawaiicounty.gov)>  
**To:** Naalehu Theatre <[naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)>  
**Cc:** Hirayama, Emily <[Emily.Hirayama@hawaiicounty.gov](mailto:Emily.Hirayama@hawaiicounty.gov)>  
**Sent:** Monday, October 29, 2018 10:19:03 AM HST  
**Subject:** RE: I have to cancel tomorrow's meeting

Ms. Demoruelle,

The below link went up on 10/26/18 and is available for public comment.

[http://records.co.hawaii.hi.us/webink/1/edoc/96399/Preliminary Engineering Report \(Naalehu WWTP\) October 2018.pdf](http://records.co.hawaii.hi.us/webink/1/edoc/96399/Preliminary%20Engineering%20Report%20(Naalehu%20WWTP)%20October%202018.pdf)

As you can see from Section 8 in the link (pdf pages 75 and 84), the recommended site to develop is TMK (3) 9-5-007:016, a parcel of land that is well away from the school that your grandson attends.

If I can be frank, Ms. Demoruelle, what is it that you're looking for? How can we resolve this matter?

Please advise.

Mahalo,

D. Kaena Horowitz

Deputy Corporation Counsel

County of Hawai'i

**From:** Naalehu Theatre [<mailto:naalehutheatre@yahoo.com>]  
**Sent:** Monday, October 29, 2018 9:25 AM  
**To:** Horowitz, Kaena <[Kaena.Horowitz@hawaiicounty.gov](mailto:Kaena.Horowitz@hawaiicounty.gov)>  
**Subject:** Re: I have to cancel tomorrow's meeting

Thank you so much. I put it on my calendar. Best, Sandra Demoruelle

On Monday, October 29, 2018 09:23:39 AM HST, Horowitz, Kaena <[Kaena.Horowitz@hawaiicounty.gov](mailto:Kaena.Horowitz@hawaiicounty.gov)> wrote.

Ms. Demoruelle,

I hope you feel better soon.

November 7 @ 1:30pm works for me.

Mahalo,

Kaena

**From:** Naalehu Theatre [<mailto:naalehuthatre@yahoo.com>]  
**Sent:** Monday, October 29, 2018 9:19 AM  
**To:** Horowitz, Kaena <[Kaena\\_Horowitz@hawaiicounty.gov](mailto:Kaena_Horowitz@hawaiicounty.gov)>  
**Subject:** I have to cancel tomorrow's meeting

Aloha, I am so sorry but I have been sick all weekend and will not be coming to Hilo tomorrow. Can I re-schedule for any time on November 7 or any day the week of Nov. 12 Mon. - 16 Fri?

Again, I apologize for the inconvenience this may cause you. Best, Sand





10349-01  
March 6, 2020

ref (48)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka‘u, Hawai‘i  
Response to Comment – October 31, 2018 11:39 a.m.

Dear Ms. Demoruelle:

Thank you for your October 31, 2018 11:39 a.m. comment message regarding the County of Hawai‘i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#47

Kate AB

From: Naalehu Theatre <naalehuthatre@yahoo.com>  
Sent: Wednesday, October 31, 2018 12:41 PM  
To: Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>  
Cc: Hirayama, Emily <Emily.Hirayama@hawaiicounty.gov>; Dora Beck <dora.beck@hawaiicounty.gov>; Joe Kamelamela <joe.kamelamela@hawaiicounty.gov>; clekven@brwncald.com; Public Comment <pahalaea@wilsonokamoto.com>; eplan1@aol.com; Albright, David <Albright.David@epa.gov>; ematsukawa@wilsonokamoto.com; Rao, Kate <Rao.kate@epa.gov>; Kim Wagoner <Kim.Wagoner@erg.com>; Patrick Goodwin <Patrick.Goodwin@erg.com>; Braden Rosenberg <braden.rosenberg@erg.com>  
Subject: Naalehu WWTP Prelim. Eng. Report w/details for spending over \$40 mill of taxpayers money [per project!]

woc 12-12-2018

Aloha Mr. Horowitz,

How can we make public comments?

It is just a Preliminary Engineering Report, not an Environmental Assessment document. In fact, your pleadings [P. 3 highlighted Exhibit C/D] indicate that under **Task 5.1, the Naalehu DEA was to have had two public meetings between Aug 27 and Oct 25, 2018 - neither of which were held.**

The problem has been that lacking publication of the Naalehu DEA under NEPA/ESA/NHPA, or even HEPA, the public has no way to comment on anything. "No comments" led to a sewage plant beside the Naalehu Elementary School, so it might be wise to receive public comment on this new location - which is right next to a well and is PONC land per Res. 650-18. And to support our personal injury lawsuits, the site now puts property held by my husband on the "must hook up" economically affected list.

Actually, Mr. Kucharski should send you, personally, out to meet with us since now we hold regular community meetings.

**Thanks to two true community heroes who are coming out each Monday to offer us their kokua - which includes rescuing people from a truck that had just flipped off the road in the flooding rain - Ka'u has meetings at 6:30 pm on Mondays at the Pahala Community Clubhouse that I am sure Terri and Pali would like to have you attend.**

Rain or shine, Ka'u is talking about the now \$40 million each WWTPs each Monday evening, and EVERYONE is welcome here, as far as I can see.

Therefore, so I can tell everyone at the next meeting, how can everyone make comments on this Naalehu WWTP plan?

Best, Sandra Demoruelle



10349-01  
March 6, 2020

ref (47)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 31, 2018 12:41 p.m.

Dear Ms. Demoruelle:

Thank you for your October 31, 2018 12:41 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#49

KATE SU

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**Sent:** Friday, October 26, 2018 11:12 AM  
**To:** pahalaea@wilsonokamoto.com; ematsukawa@wilsonokamoto.com; Rao, Kate <Rao.kate@epa.gov>; Dora Beck <dora.beck@hawaiicounty.gov>  
**Cc:** clekven@brwncald.com; Kim Wagoner <Kim.Wagoner@erg.com>; Patrick Goodwin <Patrick.Goodwin@erg.com>; Braden Rosenberg <braden.rosenberg@erg.com>; Maile David <maile.david@hawaiicounty.gov>; Rep. Richard Creagan <reocreagan@capitol.hawaii.gov>; jconstantinescu@brwncald.com; jsakaguchi@wilsonokamoto.com; BERMAN, TESSA <Berman.Tessa@epa.gov>; eplan1@aol.com; Bob Martin <bmartin@naalehu.org>; Albright, David <Albright.David@epa.gov>; Linda Morgan <lindahawaii65@gmail.com>; Ka'u Calendar News <kaucalendarnews@gmail.com>; The Ka'u Calendar Newspaper and Daily News Briefs <kaucalendarblog@gmail.com>; Nancy Cook Lauer <nclauer@gmail.com>; mail@environment-hawaii.org; Shannon Rudolph <shannonkona@gmail.com>; Senator Hirono (mailagent) <casework@hirono.senate.gov>; Senator Hirono's Office <hawaiioffice@hirono.senate.gov>; senngreen@capitol.hawaii.gov; HI Office of Environmental Quality Control <hiofficeofenvironmental@doh.hawaii.gov>; tnapaehi@yahoo.com; Solali Hanoa <saysohi@aol.com>  
**Subject:** Re: The Ka'u Community's Request to Extend the date for Pahala DEA/AFNSI comments -thank you for the extension

woc 12-12-2018

Dear Mr. Matsukawa,

To up date the hearing yesterday, while the Judge dismissed the preliminary injunction, he also dismissed the COH Motion to Dismiss, so the case will move forward,

I will be able to present my claim to the Court!

I will be submitting comments and thank you for acknowledging the earlier comments.  
Best, Sandra Demoruelle

On Wednesday, October 24, 2018 04:02:35 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Dear Mr. Matsukawa,

Because we in Ka'u have so many concerns that we have not been able to write into comments as yet - I myself have not even started on my concerns with the costs in the PER - I know a request has gone out for more time to comment.

With that in mind, I will continue to submit comments.

Like so many other people, I am concerned with the ACTUAL flooding potential of the water that flows through the culvert from the mac nut orchard where you want to place the four open sewage lagoons. All you COHDEM Contractors and Sub-contractors seemed totally unaware that this culvert even exists, so I am attaching pictures of it to prove it does exist.



10349-01  
March 6, 2020

ref (49)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – October 26, 2018 11:12 a.m.

Dear Ms. Demoruelle:

Thank you for your October 26, 2018 11:12 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#50

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc nov18-2018  
**Sent:** Friday, November 2, 2018 12:22 PM  
**To:** Tessa Munekiyo Ng  
**Cc:** Kate Rao; Dora Beck; HI Office of Environmental Quality Control; David Albright; Maile David; Public Comment; Irina Constantinescu; Kaena Horowitz; TESSA BERMAN; eplan1@aol.com  
**Subject:** Re: Your APA prize for the Ka'u CDP is a TOTAL JOKE!!!

Thank you for your response. However, you have not addressed the problem of an award for a CDP that has been totally ignored. The Pahala WWTP DEA shows no respect for the CDP Policy 90 - not even mentioning it.

The four judges were misled. Sandra Demoruelle

On Thursday, November 1, 2018 09:40:29 PM HST, Tessa Munekiyo Ng <tessa@munekiyohiraga.com> wrote:

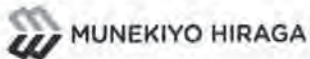
Aloha Ms. Demoruelle,

Thank you for your email and we appreciate you sharing your thoughts with us. The APA Hawaii Chapter awards are selected annually by a panel of four judges based on nomination materials submitted for the projects. This year, seven projects were recognized. As you noted, the Ka'u CDP was nominated and selected by the jury to receive an award.

Thank you again for reaching out and sharing your comments with us.

**Tessa Munekiyo Ng**, AICP, Vice President

Email: [tessa@munekiyohiraga.com](mailto:tessa@munekiyohiraga.com)



**Oahu:** 735 Bishop Street, Suite 321, Honolulu, Hawaii 96813 T: 808.983.1233

**Mau:** 305 High Street, Suite 104, Wailuku, Hawaii 96793 T: 808.244.2015 F: 808.244.8729

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CONFIDENTIAL AND PRIVILEGED COMMUNICATION: This message (including attachments) is intended for the use of the designated recipient(s) named above. The contents of this correspondence are considered privileged and confidential. If you have received this message in error, kindly notify us immediately by email or telephone, and delete this email from your computer system. Thank you.

**From:** Naalehu Theatre [mailto:naalehutheatre@yahoo.com]  
**Sent:** Wednesday, October 31, 2018 5:03 PM  
**To:** Tessa Munekiyo Ng  
**Cc:** Kate Rao; Dora Beck; HI Office of Environmental Quality Control; David Albright; Maile David; Public Comment; Irina Constantinescu; Kaena Horowitz; TESSA BERMAN; eplan1@aol.com  
**Subject:** Your APA prize for the Ka'u CDP is a TOTAL JOKE!!!

Aloha,

The Hawaii County Planning announced that APA-Hawaii Chapter made an award for the totally ignored Ka'u CDP. A more obvious document produced just for the "looks" without actually impacting any "planning" activities could not be found.

It is laughable that APA-Hawaii thought anyone, like COHDEM, would actually IMPLEMENT it!

The COHDEM is shoving two sewage plant projects - costing \$40.5 mill EACH! - down our throats and Ka'u is organizing and lawyering-up. So much for Ka'u CDP Policy 90 - involve the community and we will help raise money. What a laugh! The ink wasn't dry on the CDP before Brown and Caldwell was terrorizing us - as pictured attached below.

Everyone should re-consider the optics of awarding this prize for a CDP that is so totally ignored in practice - ALREADY!! The \$40.5 mill represents about \$250,000 per LCC/household closed and the homes are only worth about \$60,000.

For under \$10 mill, the homes could be purchased and save taxpayers the \$30 mill plus interest for 35 years. Doesn't the COHDEM "plan" to spend \$40 mill on a sewage plant for \$10 mill worth of housing sound downright stupid and not deserving of your "award?"

If you don't think I am accurate - just look for Policy 90 in the Pahala DEA. See if COHDEM gives a damn about what the Ka'u community thinks?

Most sincerely, Sandra Demoruelle

----- Forwarded Message -----

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>  
**To:** Jelani Shareem <shareem.jelani@epa.gov>  
**Sent:** Wednesday, October 31, 2018 11:49:07 AM HST

**Subject:** Fw: Naalehu PER in Naalehu/Pahala Libraries?

----- Forwarded Message -----

**From:** Naalehu Theatre <naalehutheatre@yahoo.com>

**To:** David Albright <albright.david@epa.gov>; shareem.jelanie@epa.gov <shareem.jelanie@epa.gov>; Kate Rao <rao.kate@epa.gov>; Dora Beck <dora.beck@hawaiicounty.gov>

**Cc:** Sara Kamibayashi <sara.kamibayashi@librarieshawaii.org>; Maelene Kaapana <maelene.kaapana@librarieshawaii.org>; Linda Morgan <lindahawaii65@gmail.com>; Bob Martin <bmartin@naalehu.org>; Maile David <maile.david@hawaiicounty.gov>; Ka'u Calendar News <kaucalendarnews@gmail.com>

**Sent:** Wednesday, October 31, 2018 11:39:24 AM HST

**Subject:** Naalehu PER in Naalehu/Pahala Libraries?

Since this Naalehu Preliminary Engineering Report (PER) is a very important document that could potentially remove some of the terror that people have felt with the Naalehu School as a site for the sewage plant, has it been placed in the local libraries?

Attentive as I am to this issue, I did not know the Naalehu PER had been published Oct 26 because the Task 5.1 two meetings had not been held between August 27 and October 25, 2018 and the PER document isn't readily available at our libraries.

I remain extremely concerned as this property, like property #1 (Weatherford), is PONC land (see HCC Res. 650-18) under care of the Ala Kahakai group.

Sincerely, Sandra Demoruelle

----- Forwarded Message -----

**From:** Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>

**To:** Naalehu Theatre <naalehutheatre@yahoo.com>

**Cc:** Hirayama, Emily <Emily.Hirayama@hawaiicounty.gov>

**Sent:** Monday, October 29, 2018 10:19:03 AM HST

**Subject:** RE: I have to cancel tomorrow's meeting

3

Ms. Demoruelle,

The below link went up on 10/26/18 and is available for public comment.

[http://records.co.hawaii.hi.us/weblink/1/edoc/96399/Preliminary\\_Engineering\\_Report\\_\(Naalehu\\_WWTP\)\\_October\\_2018.pdf](http://records.co.hawaii.hi.us/weblink/1/edoc/96399/Preliminary_Engineering_Report_(Naalehu_WWTP)_October_2018.pdf)

As you can see from Section 8 in the link (pdf pages 75 and 84), the recommended site to develop is TMK (3) 9-5-007:016, a parcel of land that is well away from the school that your grandson attends.

If I can be frank, Ms. Demoruelle, what is it that you're looking for? How can we resolve this matter?

Please advise.

Mahalo,

D. Kaena Horowitz

Deputy Corporation Counsel

County of Hawai'i

---

**From:** Naalehu Theatre [mailto:naalehutheatre@yahoo.com]

**Sent:** Monday, October 29, 2018 9:25 AM

**To:** Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>

**Subject:** Re: I have to cancel tomorrow's meeting

Thank you so much. I put it on my calendar. Best, Sandra Demoruelle

On Monday, October 29, 2018 09:23:39 AM HST, Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov> wrote:

4

Ms. Demoruelle,

I hope you feel better soon.

November 7 @ 1:30pm works for me.

Mahalo,

Kaena

---

**From:** Naalehu Theatre [mailto:[naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)]  
**Sent:** Monday, October 29, 2018 9:19 AM  
**To:** Horowitz, Kaena <[Kaena.Horowitz@hawaiicounty.gov](mailto:Kaena.Horowitz@hawaiicounty.gov)>  
**Subject:** I have to cancel tomorrow's meeting

Aloha, I am so sorry but I have been sick all weekend and will not be coming to Hilo tomorrow. Can I re-schedule for any time on November 7 or any day the week of Nov. 12 Mon. - 16 Fri?

Again, I apologize for the inconvenience this may cause you. Best, Sandra Demoruelle

—  
This message has been scanned for viruses and dangerous content by **MailScanner**, and is believed to be clean.







10349-01  
March 6, 2020

ref (50)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 2, 2018 12:22 p.m.

Dear Ms. Demoruelle:

Thank you for your November 2, 2018 12:22 p.m. comment message regarding the County Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements of the Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#51

1/20

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc nov18-2018  
**Sent:** Monday, November 5, 2018 9:26 AM  
**To:** Public Comment; Earl Matsukawa; Kate Rao; Dora Beck  
**Cc:** clekven@brwncald.com; kim.wagoner@erg.com; Patrick Goodwin;  
braden.rosenberg@erg.com; Maile David; Rep. Richard Creagan;  
iconstantinescu@brwncald.com; John Sakaguchi; TESSA BERMAN; eplan1@aol.com;  
Bob Martin; David Albright; Linda Morgan; Ka'u Calendar News; The Ka'u Calendar  
Newspaper and Daily News Briefs; Nancy Cook Lauer; mail@environment-hawaii.org;  
Shannon Rudolph; Senator Hirono (mailto:); Senator Hirono's Office;  
sengreen@capitol.hawaii.gov; HI Office of Environmental Quality Control;  
tnapeahi@yahoo.com; Solali Hanoa; tcallis@hawaii-tribune-herald.com;  
valerie.poindexter@hawaii-county.gov; tim.richards@hawaii-county.gov;  
aaron.chung@hawaii-county.gov; Dru Kanuha; karen.eoff@hawaii-county.gov; Sue Lee  
Loy; eileen.ohara@hawaii-county.gov; jen.ruggles@hawaii-county.gov; Jelani Shareem;  
Joe Kamelamela; Kaena Horowitz; Tom Hasslinger; mpoffice@earthjustice.org; Charles  
Tuttle  
**Subject:** Re: COST OF THE PAHALA PROJECT IS TOTALLY INACCURATE  
**Attachments:** PAHALA\_WWTP\_COST\_ESTIMATES\_OCT\_2018.jpg

The Section 5.5 Cost Estimates are totally off for the Pahala WWTP Project.

The Pahala EA shows costs as \$14.6 mill. while the actual total cost will be more like \$40 mill - see the Naalehu Sec 5.5 Cost Estimates attached.

The COHDEM is lying to the people by claiming the costs will be "only" \$14.6 mill when it will actually cost at least \$40 mill!

Can the County afford over \$80 mill in loan obligation for at least 30 years?

The County Council should set a limit for costs and it should not exceed the value of the 109 (Pahala) and 163 (Naalehu) LCC households - or about \$10 mill!

**Think about it - \$81 mill divided by 272 (total households) results in spending \$300,000 for each home to just close the offending LCCs.**

**The County cannot afford these twin boondoggles!**

**Submitted on Nov. 5, 2018 by Sandra Demoruelle**

On Wednesday, October 24, 2018 04:02:35 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Dear Mr. Matsukawa,

Because we in Ka'u have so many concerns that we have not been able to write into comments as yet - I myself have not even started on my concerns with the costs in the PER - I know a request has gone out for more time to comment.

With that in mind, I will continue to submit comments.

Like so many other people, I am concerned with the ACTUAL flooding potential of the water that flows through the culvert from the mac nut orchard where you want to place the four open sewage lagoons. All you COHDEM Contractors and Sub-contractors seemed totally unaware that this culvert even exists, so I am attaching pictures of it to prove it does exist.

I will continue submitting Pahala DEA comments because I have not had time to write up all my comments as yet - and we all deserve a chance to have our concerns fully heard on the two WWTPs in Kau - even if you are illegally making us do it one project at a time.

**We will be suing on this forever!** And maybe tomorrow the snotty attitude of Corporate Counsel will make the Judge sympathetic to this old lady!

To my Friends - pray that tomorrow in Hilo Courtroom 3E, I can speak truth to power, successfully. Aloha pumehana, Sandy Demoruelle

On Tuesday, October 23, 2018 02:47:36 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

I have not received any confirmation as was said would occur. Sandra Demoruelle

On Wednesday, October 10, 2018 10:50:05 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Dear Mr. Matsukawa,

The Pahala DEA meeting tonight was held without the aforementioned DEA volume present to consult.

It was like having a Bible study class without any Bibles!

Was I the only person in the room who has actually read the meager DEA offerings? I mean 21 blank pages and untold repetition makes about 50 real pages to read. But to read it, you have to have a real live volume of the DEA to read. None were present at the DEA meeting????!!

But not to worry! You will have hundreds of pages of comments to add bulk to your FEA - which will have yet another law suit since you did not go direct to EIS like ALL HAWAII WWTPS DO. Name one project without an EIS!!!!

And you could very well lose your prelim inj. and no one will be paid for the meeting I so enjoyed tonight. But then, I didn't get paid, either.

Best, Sandra Demoruelle

On Monday, October 1, 2018 10:40:37 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
S/ Sandra Demoruelle  
SANDRA DEMORUELLE

On Friday, September 28, 2018 01:42:46 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiros**, when her name is listed on the COH website as "**Maile Medeiros David**."

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is an LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq. ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

--  
This message has been scanned for viruses and dangerous content using **Worry-Free Mail Security**, and is believed to be clean. [Click here to report this message as spam.](#)

PAAHALA

### 5.5 Cost Estimates

An order of magnitude probable construction is summarized in Table 5-3. The estimate includes a 25 percent estimating contingency. The detailed cost estimate is included as Appendix A.

Description	Estimated Construction Cost
Electrical and Instrumentation	\$1,976,000
Headworks	\$908,000
Odor Control	\$412,000
Lagoons	\$2,222,000
Constructed Wetland	\$611,000
Land Application	\$925,000
On-site improvements	\$6,325,000
Off-site improvements	\$1,223,000
<b>Total Estimated Construction Cost</b>	<b>\$14,600,000</b>

### 5.6 Future Expansion

#### 5.6.1 Full Buildout Flows

Full buildout wastewater flow projections were developed using the Draft Ka'u Community Development Plan (March 2015) and the CCH's current (2017) wastewater standards. Table 5-4 summarizes the projected full buildout flows for the community, and Figure 2-1 shows the WWTP full buildout service area.

Description	Value	Peaking Factor
Average dry weather flow	360,000 gallons per day	1.0
Peak day wet weather flow	1,260,000 gallons per day	3.5
Peak hour wet weather flow	1,200 gallons per minute	4.8

#### 5.6.2 Improvements

To accommodate the flow increase anticipated from the full buildout of the Pahala wastewater collection system, the WWTP will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the 14.9-acre site.

Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solids recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater



10349-01  
March 6, 2020

ref (51)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 5, 2018 9:26 a.m.

Dear Ms. Demoruelle:

Thank you for your November 5, 2018 9:26 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

The Draft EA Appendix B Section 5.5 and Table 5.3 provides a conceptual planning level construction cost estimate of about \$14.6 million for the secondary wastewater treatment and disposal facility only. Table 5.3 does not reflect the total cost of the Proposed Action and does not include planning, design, land acquisition, the collection system or past project costs. As stated in the Draft EA Section 2.1.2, the project may be funded by the State of Hawai'i Department of Health Clean Water State Revolving Fund which authorizes low interest loans for the construction of publicly owned wastewater treatment works and an EPA Special Appropriation Grant. This information will be included in the Final EA.

Hawai'i Administrative Rules (HAR) Title 11 Chapter 200-10 **Contents of an environmental assessment** does not include a requirement for evaluating the fiscal impacts of a project on a County's budget or ability to obtain funding.

The cost estimate for the Nā'ālehu project is not pertinent to the content requirements for the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng

10349-01

Letter to Ms. Sandra Demoruelle

Page 2

March 6, 2020

Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#52

10/1

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc nov18-2018  
**Sent:** Tuesday, November 6, 2018 11:51 AM  
**To:** sengreen@capitol.hawaii.gov; senruderman@capitol.hawaii.gov; Rep. Richard Creagan; reponishi@capitol.hawaii.gov; Senator Hirono (mailto:); Senator Hirono's Office; Office of U.S. Senator Brian Schatz; Congresswoman Tulsi Gabbard; Maile.David@hawaiicounty.gov  
**Cc:** cohdem@hawaiicounty.gov; rao.kate@epa.gov; eplan1@aol.com; Jelani Shareem; Dora Beck; Kaena Horowitz; Linda Morgan; TESSA BERMAN; Bob Martin; Ka'u Calendar News; The Ka'u Calendar Newspaper and Daily News Briefs; Nancy Cook Lauer; tcallis@hawaiitribune-herald.com; Shannon Rudolph; mail@environment-hawaii.org; Joe Kamelamela; Charles Tuttle; mpoffice@earthjustice.org; Tom Hasslinger; Dru Kanuha; Sue Lee Loy; David Albright; Craig Lekven; Earl Matsukawa; Public Comment; aaron.chung@hawaiicounty.gov; eileen.ohara@hawaiicounty.gov; tim.richards@hawaiicounty.gov; karen.eoff@hawaiicounty.gov; valerie.poindexter@hawaiicounty.gov; jen.ruggles@hawaiicounty.gov  
**Subject:** Re: The sewage projects in Ka'u will cost at least \$40.5 million - EACH - and still climbing!  
**Attachments:** NAALEHU\_WWTP\_COST\_ESTIMATES\_Nov\_2018.jpg

These Wastewater Projects have become a total boondoggle. Please stop this waste of tax dollars and set a firm budget of under \$10 million! Sincerely, Sandra Demoruelle

On Sunday, April 22, 2018 10:57:00 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Aloha Ka'u legislators.

Are you expecting COH and State taxpayers to volunteer to cover this oversized, overpriced monstrosity (the COHDEM AOC) that is neither wanted or needed? Meanwhile, no alternatives have been offered to the taxpayers (or the communities affected, if anyone cares), such as a micro-sewage projects serving the under 300 properties in total?

How can ANYONE who is sane justify spending at least \$23,340,000 for 300 properties on LCCs? You plan to spend almost \$100,000 per household!

Please come and meet with our community! This is the dumbest idea that has ever been planned down here (and that is saying a lot because Ka'u seems to be the epicenter of dumb ideas being foisted upon the community by outsiders). Just ask my great-grandson Daniel how much he looks forward to having the four open sewage lagoons right next door to his classroom (pictured below).

If you think the community is not going to fight this with every legal means available to us, especially citizen suits, you are badly mistaken.

Plus, since we do have a sense of humor down here so look for us to form an organization to fight COHDEM and the EPA. Something like "People Opposed to Oppressing People" - POOP - and then we can have a Poop Festival this 4th of July and highlight the dumb WWTP projects in Ka'u - which are costing Hawaii taxpayers \$23,340,000 because the meter is now running and COHDEM has their contracts for spending this money already in place.

Mahalo, Sandra Demoruelle

----- Forwarded Message -----

**From:** Amanda Tuttle <anredowel4929@gmail.com>  
**To:** "naalehutheatre@yahoo.com" <naalehutheatre@yahoo.com>  
**Sent:** Thursday, April 12, 2018 06:05:05 PM HST  
**Subject:**

--  
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# NAALEHU

## 5.5 Cost Estimates

An order of magnitude probable capital cost is summarized in Table 5-3. The estimate includes a 20 percent estimating contingency. The detailed cost estimate is included in Appendix B.

Description	Estimated Construction Cost
Wastewater treatment plant and utilities	\$14,600,000
Land application system	\$6,400,000
Drainage improvements	\$11,400,000
Total construction cost	\$32,400,000
Engineering, administration, and legal at 25% of construction cost	\$8,100,000
Total capital cost	\$40,500,000

## 5.6 Future Expansion

### 5.6.1 Full Buildout Flows

Full buildout wastewater flow projections were developed using the Draft Ka'u Community Development Plan (March 2015) and the CCH's current (2017) wastewater standards. Table 5-4 summarizes the projected full buildout flows for the community, and Figure 2-2 shows the WWTP full buildout service area.

Description	Value	Peaking Factor
Average dry weather flow	390,000 gallons per day	1.0
Peak day wet weather flow	1,200,000 gallons per day	2.5*
Peak hour wet weather flow	1,250 gallons per minute	4.6

\*Derived from Crites and Tchobanoglous, 1998

### 5.6.2 Improvements

To accommodate treatment of the increased flow anticipated from the full buildout of the Naalehu wastewater collection system, the WWTP will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the existing WWTP site.

Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solids recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater opportunity for contact between the naturally-occurring micro-organisms in the lagoon and dissolved organic matter. As a result, complete mix lagoons provide greater levels of treatment within a smaller volume than partial mix lagoons. However, facilities must be provided downstream of

Brown & Caldwell



10349-01  
March 6, 2020

ref (52)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 6, 2018 11:51 a.m.

Dear Ms. Demoruelle:

Thank you for your November 6, 2018 11:51 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

This is not a comment pertinent to the content requirements of the Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

The Draft EA Section 2.4 to 2.8 provides an evaluation of siting, treatment, and effluent management alternatives

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#53

11/8/18

Earl Matsukawa

**From:** Naalehu Theatre <naalehtheatre@yahoo.com> nov18-2018  
**Sent:** Thursday, November 8, 2018 11:52 AM  
**To:** State Office of Environmental Quality Control; Public Comment; Earl Matsukawa; Dora Beck; Kaena Horowitz  
**Cc:** Kate Rao; Jelani Shareem; David Albright; TESSA BERMAN; Craig Lekven; Irina Constantinescu; eplan1@aol.com  
**Subject:** Re: The November 8, 2018 Issue of The Environmental Notice - Pahala DEA notice is still deficient because the 9A Wastewater Unit is not listed as a trigger!

The COHDEM has failed to include the true purpose of this project in the latest Pahala DEA notice, which actually is to place a secondary sewage treatment plant with four open sewage lagoons in remote Ka'u.

The failure to include the "9A" trigger in this OEQC notice and calling this just a "collection system" is totally deceptive and will be challenged in Court.

EVERY Wastewater Treatment Unit in Hawaii has had an EIS - and there is no reason to expect a FONSI when the controversy has already caused this second notice and extension of the comment period.

The County is guilty of inequitable behavior by publishing this deceitful notice a second time!

Everyone involved should be very ashamed of these unconscionable representations to OEQC and the public - since the COHDEM and its Contractors were warned, it must be considered bad faith by the Courts.

Pahala DEA comment submitted by Sandra Demoruelle

On Thursday, November 8, 2018 09:10:50 AM HST, State Office of Environmental Quality Control <oeqchawaii@doh.hawaii.gov> wrote:

*Maria,*

The November 8, 2018 Issue of The Environmental Notice is now available online for your review.



Regards,

Office of Environmental Quality Control  
 (808) 586-4185  
<http://health.hawaii.gov/oeqc/>

x  
x  
x  
x

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10349-01  
March 6, 2020

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Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 8, 2018 11:52 a.m.

Dear Ms. Demoruelle:

Thank you for your November 8, 2018 11:52 a.m. comment message regarding the County Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project.

The Office of Environmental Quality Control *The Environmental Notice* dated November 8, 2018 indicated under status that the proponent is republishing the draft EA originally published September 23, 2018 and provided the following project description:

The County of Hawai'i Department of Environmental Management proposes to construct wastewater system improvements replacing the large capacity cesspools (LCCs) currently serving Pāhala, in order to comply with U.S. Environmental Protection Agency (EPA) regulations. The project improvements would include a new wastewater collection system located primarily within public streets in the Pāhala community, and a treatment and disposal system on land to be acquired by the County (TMK: 9-6-002: 018). The project would be partially funded by an EPA grant and by the Clean Water State Revolving Fund loan program. The proposed wastewater collection system is described in the Draft EA, and the existing LCCs and associated collection system would be abandoned.

A link was provided in the November 8 2018 TEN to the Draft EA: [http://oeqc2.doh.hawaii.gov/EA\\_EIS\\_Library/2018-11-08-HA-Republished-DEA-Pahala-Community-Large-Capacity-Cesspool-Replacement.pdf](http://oeqc2.doh.hawaii.gov/EA_EIS_Library/2018-11-08-HA-Republished-DEA-Pahala-Community-Large-Capacity-Cesspool-Replacement.pdf). Section 2 of the Draft EA is the project description.

The Office of Environmental Quality Control *The Environmental Notice* dated September 23, 2018 provided the following project description:

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Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

The project improvements would include a new wastewater collection system located primarily within public streets in the Pāhala community, and a treatment and disposal system on land to be acquired by the County (TMK: 9-6-002: 018). The project would be partially funded by an EPA grant and by the Clean Water State Revolving Fund loan program.

The collection system would consist of approximately 12,120 linear feet of 8 to 12-inch diameter underground gravity flow piping in Maile, 'Ilima, Huapala, Hinano, Hala, Puahala and Pitake Streets. The treatment and disposal facility would occupy about 14.9 acres and consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen with an adjacent disinfection system to remove pathogens, and four slowrate land treatment basins for further treatment and disposal of the treated effluent. A perimeter security fence would enclose the entire facility. The existing LCCs and associated wastewater collection system would be abandoned.

The Purpose and Need for Action is included in the Draft EA Section 2.2.

Hawai'i Revised Statutes (HRS) Chapter 343 Section 5 (a)(9)(A), states as follows: "(a) 'Except as otherwise provided, an environmental assessment shall be required for actions that: (1) Propose the use of state or county lands or the use of state or county funds...' as well as, '(9) Propose any: (A) Wastewater treatment unit...'"

The County of Hawai'i is the Proposing Agency for the Pāhala Large Capacity Cesspool Replacement Project.

Hawai'i Revised Statutes (HRS) Section 343-5 Applicability and requirements states under item (c) (4) "A(n environmental impact) statement shall be required if the agency finds that the proposed action may have a significant effect on the environment..." The criteria by which the proposing agency makes the significance determination is provided in Hawai'i Administrative Rules (HAR) Title 11 Section 200-12 (a) and (b) which states: "(a) In considering the significance of potential environmental effects, agencies shall consider the sum of the effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action. (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences,... and the...effects of the action."

HAR Section 11-200-10 Contents of an environmental assessment includes "(9) Findings and reasons supporting the agency determination or anticipated determination..." The Draft EA provides this in Chapter 8 Findings and Determination. Neither HRS Chapter 343 nor HAR Title 11, Chapter 200 contain any requirement that all proposed wastewater systems require an Environmental Impact Statement (EIS).

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Letter to Ms. Sandra Demoruelle  
Page 3  
March 6, 2020

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#54

Earl Matsukawa

**From:** Naalehu Theatre <naalehtheatre@yahoo.com> woc nov18-2018  
**Sent:** Tuesday, November 13, 2018 12:40 PM  
**To:** Sara Kamibayashi; Maelene Kaapana  
**Cc:** Kate Rao; Dora Beck; Kaena Horowitz; TESSA BERMAN; David Albright; Public Comment; Terri Napeahi; Solali Hanoa  
**Subject:** Naalehu Preliminary Engineering Report Oct. 2018 in the Naalehu & Pahala Libraries?

Aloha Sara,

Because of the interest generated by the community meetings they are holding Monday evenings in Pahala (and in Naalehu, starting on Sat., Nov. 24th at 10 am at Punaluu Bakery rear pavilion), I need to know if the County or EPA provided the copies of the new Preliminary Engineering Report for the Naalehu sewage treatment plant (dated Oct. 2018) to the Ka'u libraries so we can let folks know where to find the information?

Considering the extreme public controversy of the twin \$81 mill. wastewater projects, thank you so much for maintaining this reference info for us to use!! Mahalo, Sandy Demoruelle

----- Forwarded Message -----

**From:** Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>  
**To:** Naalehu Theatre <naalehtheatre@yahoo.com>  
**Cc:** Hirayama, Emily <Emily.Hirayama@hawaiicounty.gov>  
**Sent:** Monday, October 29, 2018 10:19:03 AM HST  
**Subject:** RE: I have to cancel tomorrow's meeting

Ms. Demoruelle,

The below link went up on 10/26/18 and is available for public comment.

[http://records.co.hawaii.hi.us/web/Link/L.edoc/96399-Preliminary\\_Engineering\\_Report\\_\(Naalehu\\_WWTP\)\\_October\\_2018.pdf](http://records.co.hawaii.hi.us/web/Link/L.edoc/96399-Preliminary_Engineering_Report_(Naalehu_WWTP)_October_2018.pdf)

As you can see from Section 8 in the link (pdf pages 75 and 84), the recommended site to develop is TMK (3) 9-5-007.016, a parcel of land that is well away from the school that your grandson attends.

If I can be frank, Ms. Demoruelle, what is it that you're looking for? How can we resolve this matter?

Please advise.

Mahalo,

D. Kaena Horowitz

Deputy Corporation Counsel

County of Hawai'i

---

**From:** Naalehu Theatre [mailto:naalehtheatre@yahoo.com]  
**Sent:** Monday, October 29, 2018 9:25 AM  
**To:** Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>  
**Subject:** Re: I have to cancel tomorrow's meeting

Thank you so much. I put it on my calendar. Best, Sandra Demoruelle

On Monday, October 29, 2018 09:23:39 AM HST, Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov> wrote:

Ms. Demoruelle,

I hope you feel better soon.

November 7 @ 1:30pm works for me.

Mahalo,

Kaena

---

**From:** Naalehu Theatre [mailto:naalehtheatre@yahoo.com]  
**Sent:** Monday, October 29, 2018 9:19 AM

Mahalo,

D. Kaena Horowitz

Deputy Corporation Counsel

County of Hawai'i

---

**From:** Naalehu Theatre [mailto:naalehutheatre@yahoo.com]  
**Sent:** Monday, October 29, 2018 9:25 AM  
**To:** Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>  
**Subject:** Re: I have to cancel tomorrow's meeting

Thank you so much. I put it on my calendar. Best, Sandra Demoruelle

On Monday, October 29, 2018 09:23:39 AM HST, Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov> wrote:

Ms. Demoruelle,

I hope you feel better soon.

November 7 @ 1:30pm works for me

Mahalo,

Kaena

---

**From:** Naalehu Theatre [mailto:naalehutheatre@yahoo.com]  
**Sent:** Monday, October 29, 2018 9:19 AM  
**To:** Horowitz, Kaena <Kaena.Horowitz@hawaiicounty.gov>  
**Subject:** I have to cancel tomorrow's meeting

Aloha, I am so sorry but I have been sick all weekend and will not be coming to Hilo tomorrow. Can I re-schedule for any time on November 7 or any day the week of Nov. 12 Mon. - 16 Fri?

Again, I apologize for the inconvenience this may cause you. Best, Sandra Demoruelle

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10349-01  
March 6, 2020

ref (54)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 13, 2018 12:40 p.m.

Dear Ms. Demoruelle:

Thank you for your November 13, 2018 12:40 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

The Nā'ālehu project PER is not part of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#57

Earl Matsukawa

**From:** Naalehu Theatre <naalehuthatre@yahoo.com>  
**Sent:** Friday, November 16, 2018 10:03 AM  
**To:** Public Comment; Dora Beck; Kate Rao; David Albright  
**Subject:** FWS required Sec. 7 Consult for Pahala

On Page 5 of the FWS letter to Earl Matsukawa (dated April 23, 2018) - and long before the Pahala Project was designated for NEPA/crosscutters like Sec. 7 Consultation in Grant Amendment 7 on May 30, 2018 - you were informed that this federal funding would "require a Section 7 consultation with the [FW]Service."

This Sec. 7 consultation is part of the full EIS process and is not included in this hasty EA/AFNSI document.

The COHDEM and its Contractors are purposely avoiding this Section 7 consultation (under Endangered Species Act) on both this Pahala WWTP Project and the Naalehu WWTP Project - most notably avoided on the Naalehu Project because the ESA had been applied to the Naalehu WWTP Project from September 20, 2005 up until May 29, 2018, and appears to have been purposely changed to avoid ESA on the "Waikapuna" Public Access, Open Space, and Natural Resources property, the so-called PONC property described as TMK (3) 9-5-007:016 per County of Hawaii Resolution 650-18 authorizing acquisition of the land.

The current Naalehu PER dated October 2018 states TMK (3) 9-5-007:016 is now the site of the new secondary sewage treatment plant and the Res. 650-18 describes native and endangered bird and plant species and this upper portion includes the remnants of a lowland dry forest. Yet, the COHDEM refuses to perform a Section 7 consultation for use of this PONC land as a WWTP.

Comment by Sandra Demoruelle

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10349-01  
March 6, 2020

ref (57)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

**Subject:** Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 16, 2018 10:03 a.m.

Dear Ms. Demoruelle:

Thank you for your November 16, 2018 10:03 a.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Draft EA Section 3.13.2 states:

"On April 23, 2018, as part of the pre-assessment consultation process, the FWS provided a letter (01EPIF00-2018-TA-0275) with information on various avoidance and minimization measures to avoid adverse impacts to listed species (see Appendix A)."

"Prior to finalization of this EA and initiation of the Proposed Action, EPA and the County of Hawai'i will conclude consultation with FWS in accordance with Section 7 of the Endangered Species Act and will incorporate additional impact avoidance and minimization measures as necessary to result in a finding of Not Likely to Adversely Affect (NLAA) protected species."

On December 21, 2018, the designated non-Federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of the United States Environmental Protection Agency (EPA) and the County of Hawai'i, requested concurrence from the U.S. Fish and Wildlife Service (FWS) that the Pāhala Community Large Capacity Cesspool Replacement project is not likely to adversely affect federally-listed threatened and endangered species or critical habitat.

On February 19, 2019, the FWS provided a letter (REF 01EPIF00-2018-TA-0275; 01EPIF00-2019-1-0153) that concluded: "The Service has analyzed potential impacts to listed species due to the implementation of [the] project. Based on the inclusion of the avoidance and minimization measures listed above, the Service anticipates that any potential impacts will be discountable or

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Letter to Ms. Sandra Demoruelle

Page 2

March 6, 2020

insignificant and therefore we concur that the Pahala Large Capacity Cesspool Replacement Project may affect, but is not likely to adversely affect the endangered Hawaiian hoary bat, Hawaiian Hawk, Hawaiian goose, Hawaiian Petrel, Band-rumped Storm-Petrel, Hawaiian Stilt, and Hawaiian Coot, and the threatened Newell's Shearwater.”

This information will be included in the Final EA Section 3.13.2 and Appendix C.

The Nā'ālehu wastewater treatment plant PER is not a part of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project. Comments related to that document are not pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#58

126

Earl Matsukawa

**From:** Naalehu Theatre <naalehuthatre@yahoo.com> woc nov18-18  
**Sent:** Friday, November 2, 2018 12:14 PM  
**To:** Public Comment  
**Subject:** Re: Republication Notice for Draft Environmental Assessment/Anticipated Finding of No Significant Impact for Pahala Community Large Capacity Cesspool Replacement Project

I hope you listed the "9a wastewater unit" trigger!

It would be intentionally left off, since we told you of the failure to state this "9a" trigger on the first notice.

Sandra Demoruelle

On Friday, November 2, 2018 10:22:47 AM HST, Public Comment <PahalaEA@wilsonokamoto.com> wrote:

Dear Ms. Sandra Demoruelle,

On behalf of the County of Hawai'i Department of Environmental Management, we are notifying parties who submitted comments on the subject Draft Environmental Assessment (EA) that the document will be republished in the November 8, 2018 issue of the Office of Environmental Quality Control's *Environmental Notice*. This essentially extends the public comment period to December 10, 2018.

Attached is a copy of the press release issued by the County of Hawai'i Department of Environmental Management announcing the republication accompanied by a cover letter.

We appreciate your interest in this EA Process.



1907 South Beretania Street, Suite 400

Honolulu, Hawaii 96826

T (808) 946-2277 F (808) 946-2253

W <http://www.wilsonokamoto.com>

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March 6, 2020

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Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – November 2, 2018 12:14 p.m.

Dear Ms. Demoruelle:

Thank you for your November 2, 2018 12:14 p.m. comment message regarding the County Hawai'i Department of Environmental Management's (DEM) Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Hawaii Revised Statutes (HRS) Section 343-5 Applicability and requirements (a) states "Except as otherwise provided, an environmental assessment shall be required for actions that: (1) Propose the use of state or county lands or the use of state or county funds..." as well as, "(9) Propose any: (A) Wastewater treatment unit..."

However, Hawaii Administrative Rules (HAR) Title 11, Chapter 200, which implements HRS Chapter 343, differentiates between "agency actions" - those proposed by an agency to utilize state or county lands or funds; and, "applicant" actions" – those for which an applicant requires approval from an agency.

The Pāhala Large Capacity Cesspool Replacement project is a proposal by an agency (DEM) to use County funding, thereby "triggering" the need for an EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#64

#51

*Package Plant  
manpower  
sludge handling  
Electricity*

Earl Matsukawa

**From:** Naalehu Theatre <naalehutheatre@yahoo.com> woc 12-12-2018  
**Sent:** Monday, December 10, 2018 2:36 PM  
**To:** Public Comment  
**Cc:** Kaena Horowitz; Dora Beck; William Kucharski; Kate Rao; TESSA BERMAN; David Albright; Craig Lekven  
**Subject:** Comment on Engineer statement at the Pahala DEA meeting that 80,000 g/d flow is "municipal" quantities  
**Attachments:** COH\_Packaged\_Plant\_54\_Mill.jpeg; COH\_Packaged\_Plant\_Extra\_Costs.jpeg

At the October 10, 2018 Pahala DEA meeting, I specifically asked the Brown and Caldwell engineer, Craig Lekven if 80,000 gallons a day of waste flow was considered a "municipal" flow, and he replied that it was.

This is a false statement as EPA cites **small wastewater flows (non-municipal)** as under 1 million gallons a day.

The reason this is extremely critical is that all consideration of packaged treatment plants were dismissed because of Mr. Lekven's statement that the "municipal" flow (of under 80,000 g/d) for the Pahala wastewater treatment plant eliminated the choice.

Since a package plant that would be adequate to close the Pahala LCCs would cost around \$4 million (in 2012 dollars) per the Naalehu Sewage Transmission, Wastewater Treatment and Disposal System Revised PER (June 2013), this option should be given real consideration as a cost effective alternative. It also would require far less land and would fit closer to the existing LCCs.

Since packaged plants are modular, capacity could be easily expanded for future flows by just adding new units.

The added cost for sludge removal and electricity would be far off-set by the saving of \$10 million in borrowed SRF funds.

See attached information on the Naalehu WWTP Revised PER. Thank you for considering the packaged plant options in your upcoming EIS.

Sandra Demoruelle

This message has been scanned for viruses and dangerous content using Worry-Free Mail Security, and is believed to be clean. [Click here to report this message as spam.](#)

**5.1.5 Treatment Recommendation**

A lagoon system on the DLNR property is the recommended treatment option. Although a lagoon system has the highest capital cost and the largest footprint, it produces good effluent quality and does not require as much electricity, sludge disposal, or manpower as a packaged treatment plant. County operators are familiar with this type of system. Constructing the treatment plant on the DLNR property will not require a variance and is not located in a residential area. As described in section 5.1.4.4, three partial mix lagoons shall be constructed. The lagoons shall be constructed of reinforced concrete and can be expanded for additional wastewater flows by increasing the size of the aerator in the first tank.

A packaged treatment plant was not selected because the complexity of the process requires more manpower, sludge handling, and electricity than a lagoon system.

**5.2 FLOW METERING**

Metering of influent wastewater flow is necessary to monitor the quantity of wastewater entering the treatment plant. Monitoring influent flow can help to indicate if there are problems with the collection system. Flow metering can be accomplished using both open channels and closed conduits (pipe flow). Weirs and flumes are commonly used open channel flow metering devices. Propeller, magnetic, and ultrasonic flow meters are commonly used closed conduit flow metering devices.

**5.2.1 Flumes**

Flumes create a constriction in the flow channel that causes a hydraulic jump. Flow rate through the flume is determined by measuring the liquid depth upstream of the flume. Flumes are capable of accuracies of approximately 5% of the actual flow. Metering should be done downstream of the screening process so that any large debris is removed and will not affect the flow measurement. The water surface elevation or height within a flume can be verified by visual inspection. Flumes are self-cleaning with respect to solids and have moderate head loss. However, if the flume becomes submerged, flow readings will not be accurate. A relatively long and straight approach channel is required.

**5.2.2 Weirs**

Weirs create an obstruction in the flow path, where influent flow has to flow over a rectangular or v-notch weir. Flow is measured by measuring the height of the water passing over the weir. Weirs have an accuracy of measuring approximately 5% of the actual flow. Weirs are relatively easy to install at a low cost. The water surface elevation or height can be verified by visual inspection. If the weir becomes submerged, flow readings will not be accurate. Solids may build up on the upstream side of the weir plate. Weirs create a great deal of head loss.

*① Packaged Plant  
② Manpower  
③ Sludge handling  
④ Electricity*

### 5.1.5 Treatment Recommendation

A lagoon system on the DLNR property is the recommended treatment option. Although a lagoon system has the highest capital cost and the largest footprint, it produces good effluent quality and does not require as much electricity, sludge disposal, or manpower as a packaged treatment plant. County operators are familiar with this type of system. Constructing the treatment plant on the DLNR property will not require a variance and is not located in a residential area. As described in section 5.1.4.4, three partial mix lagoons shall be constructed. The lagoons shall be constructed of reinforced concrete and can be expanded for additional wastewater flows by increasing the size of the aerator in the first tank.

A packaged treatment plant was not selected because the complexity of the process requires more manpower, sludge handling, and electricity than a lagoon system.

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10349-01  
March 6, 2020

ref (64)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – December 10, 2018 2:36 p.m.

Dear Ms. Demoruelle:

Thank you for your December 10, 2018 2:36 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Hawaii Administrative Rules (HAR) 11-62-24 (b) requires County wastewater treatment works to be designed in accordance with County standards. If a county does not have design standards, then the design standards for the City and County of Honolulu shall be used. The County of Hawaii does not have design standards; therefore, the City and County of Honolulu standards are applicable to the Pāhala WWTP. The Draft EA Section 2.3.1 states that wastewater flow projections were developed for the treatment and disposal facility using the City and County of Honolulu wastewater standards, most recently updated during 2017. Based on these standards, the Pāhala treatment and disposal facility would be designed to provide an average dry weather flow capacity of 190,000 gallons per day (gpd), which would be sufficient capacity to allow closure of the two LCCs. The Draft EA Appendix B contains additional detail on the flow projections. The corresponding design peak day wet weather flow is 650,000 gpd. Future sewer main extensions and subdivisions will be accommodated, as capacity allows, on a first come, first served basis. Further, the wastewater treatment plant (WWTP) design will be expandable to not preclude treating future average dry weather flows up to 360,000 gpd (with a corresponding peak day wet weather flow of 1,260,000 gpd) to meet the future needs of the community in accordance with the requirements established in the Ka'ū Community Development Plan Policy 120. This information will be repeated in the Final EA.

It should be noted that wastewater flows from a community are highly variable, and peak flow rates from small community wastewater collection systems are typically three to five times higher than the average flow rates. The City and County of Honolulu standards take this variability into account, and application of the standards results in conservatively-designed facilities that are protective of human health and the environment in anticipated operational conditions.

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Letter to Ms. Sandra Demoruelle  
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Page 3  
March 6, 2020

This information will be added to the Final EA.

Package plants are pre-manufactured treatment facilities that may be used to treat wastewater in small communities, or on individual properties. Typical flows for this technology range between 10,000 and 250,000 gallons per day (Metcalf and Eddy, 1991). Although they have the advantage of a small footprint and associated capital cost, these plants have limited storage and equalization capacity, require the addition of chemicals, and are operationally complex. They are energy intensive, and the solids produced must be properly handled and disposed. Package plants do not commonly achieve denitrification or phosphorus removal without supplemental unit processes. Often, package plants utilize proprietary equipment adding to operational costs and equipment availability issues when replacements are unavailable or the equipment becomes obsolete.

Because of the need for daily operations and maintenance, on-site chemical storage and chemical addition, mechanical complexity, lack of operational flexibility under changing conditions, energy consumption, and sludge handling concerns, package plants were removed from consideration for the Proposed Action.

The above information will be included in the Final EA, Section 2.8.2

Regardless of the treatment process, the proposed treatment facility will require a method to dispose of the treated effluent. As outlined in the Draft EA section 2.3.1, the Proposed Alternative will utilize a land application system. As stated in the Draft EA Section 2.8.3, several effluent management options were evaluated for feasibility as an alternative to land application. Options removed from consideration included ocean discharge, injection wells, water recycling, and drain (leach) field. Additional detail can be found in the Draft EA Appendix B, Section 3.1.6.

The Naalehu PER is not the subject of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#65

W 52

Earl Matsukawa

**From:** Naalehu Theatre <naalehtheatre@yahoo.com>  
**Sent:** Monday, December 10, 2018 3:01 PM woc 12-12-2018  
**To:** Public Comment  
**Cc:** Kaena Horowitz; Dora Beck; William Kucharski; Kate Rao; TESSA BERMAN; David Albright; Craig Lekven  
**Subject:** Comment on failure to publish NHPA Section 106 Consultation in OEQC TEN  
**Attachments:** COH\_Naalehu\_NHPA\_106\_Feb\_2012.jpeg; COH\_Naalehu\_NHPA\_106\_Feb\_2012\_Page2.jpeg; EPA\_GRANT\_XP96942401\_7\_May\_30\_2018.pdf

The National Historic Preservation Act (NHPA), Section 106 Consultation in the OEQC *The Environmental Notice* for the Pahala WWTP Project was never published as required by statute.

Since the NHPA consultation should have also occurred on the Naalehu Project, as happened in 2012 (attached letter to COHDEM Wastewater Div.) when the NHPA 1Sec. 06 led to selecting a new site), neither one is valid at this time.

The Naalehu Project was subject to NEPA and NHPA/ESA statutes up to May 30, 2018, when the EPA and COHDEM with the assistance of their consultants - transferred the EPA Grant funding away from the Naalehu Project to evade the laws (see May 30, 2018 amendment 7 attached).

It is so illegal to proceed in violation of statutes and separate the NEPA/HEPA/NHPA/ESA for the twin Naalehu/Pahala wastewater treatment plants that far exceed the taxable value of the houselots being disconnected from the LCCs.

For example, the 165 houselots listed in the Naalehu Revised PER (June 2013) show a current value of about \$80,000 per lot - cumulatively amounting to **under \$25 million** - and the **COHDEM wants to spend \$40.5 million (and climbing) to put on sewage.**

This mad spending must be curbed with sensible alternatives as there is no way that the COH taxpayer should be stuck with these expensive boondoggles that no one can even properly comment upon since no EIS has been started on the designs or sites.

The NHPA consultation on the Pahala Project was done hastily and without due regard for the publication of notice. If I had been allowed to be a consulting party, I could have advised the COH and EPA on proper procedures and helped send some requests to the local Hawaiian individuals and groups, as none were ever pre-consulted before the hasty Sec. 106 was allowed to happen.

However, no one from EPA, COHDEM or any of the contractors has ever asked for my opinion or my assistance in any regard. The sole chance I have had to participate is through this one-way comment on a single DEA. It is terribly frustrating to all of us in Ka'u who should have been heard - if COHDEM had followed the CDP statutes for Ka'u and sought our help upfront.

Sincerely, Sandra Demoruelle

On Monday, December 10, 2018 02:36:17 PM HST, Naalehu Theatre <naalehtheatre@yahoo.com> wrote:

At the October 10, 2018 Pahala DEA meeting, I specifically asked the Brown and Caldwell engineer, Craig Lekven if 80,000 gallons a day of waste flow was considered a "municipal" flow, and he replied that it was.

This is a false statement as EPA cites **small wastewater flows (non-municipal)** as under 1 million gallons a day.

The reason this is extremely critical is that all consideration of packaged treatment plants were dismissed because of Mr. Lekven's statement that the "municipal" flow (of under 80,000 g/d) for the Pahala wastewater treatment plant eliminated the choice.

Since a package plant that would be adequate to close the Pahala LCCs would cost around \$4 million (in 2012 dollars) per the Naalehu Sewage Transmission, Wastewater Treatment and Disposal System Revised PER (June 2013), this option should be given real consideration as a cost effective alternative. It also would require far less land and would fit closer to the existing LCCs.

Since packaged plants are modular, capacity could be easily expanded for future flows by just adding new units.

The added cost for sludge removal and electricity would be far off-set by the saving of \$10 million in borrowed SRF funds.

See attached information on the Naalehu WWTP Revised PER. Thank you for considering the packaged plant options in your upcoming EIS.

Sandra Demoruelle

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This message has been scanned for viruses and dangerous content by MailScanner, and is believed to be clean.

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



NHPA  
Sec 106 consult  
Naalehu



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
501 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

February 07, 2012

Lyle Hirota, Deputy Division Chief  
Wastewater Division  
Department of Environmental Management  
108 Railroad Avenue  
Hilo, Hawaii 96720

WILLIAM J. MILA, JR.  
GOVERNOR  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSIONER  
GUY B. KAULIKEREE  
DEPUTY DIRECTOR  
WILLIAM M. TAM  
DEPUTY DIRECTOR  
STATE HISTORIC PRESERVATION DIVISION  
501 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

LOG NO: 2012.0292  
DOC NO: I202FD03  
Archaeology

Dear Mr. Hirota,

**SUBJECT: Chapter 6E-8 and National Historic Preservation Act Section 106 Consultation – Ethnohistoric Research, Proposed Na'alehu Waste Water Treatment Plant Kaunamano Ahupua'a, Ka'u District, Island of Hawai'i TMK: (3) 9-S-012: 002 and 005 (por.)**

This is in response to a request for comments on a letter report prepared by Pacific Legacy (Reeve, January 2012) regarding the subject 31-acre project area, which is being considered as the location for a County of Hawai'i waste water facility. The facility will be partially funded by the Environmental Protection Agency (EPA), triggering Section 106 consultation. The report was prepared for Fukunaga and Associates and the County of Hawai'i, and is based on background research conducted in preparation for an archaeological inventory survey. We received a copy of this report on January 23, 2012.

The report indicates that the proposed project area is situated at a place known historically as Kahua Olohu, a traditional gaming field and Makahiki grounds. The place name appears on USGS quadrangle maps dating 1962 and 1981; and its location is specifically identified by Mary Kawena Pukui, whose grandmother lived directly upslope from the site (Handy et al. 1972). Reeves (2012:3) notes that although several Makahiki grounds existed in Hawai'i, the actual locations of very few are known today. These places are directly linked to an important religious event in the Hawaiian calendar and were also the sites of rituals and ceremonies associated with the Makahiki games. In addition, this particular site is described in sources as being a famous bowling (*'uhu maika*) and *pahu* field. An estimated extent for this site is presented in Reeves' report (Figure 6); existing topographic contours show a distinctive flat area in the otherwise sloping terrain. The site encompasses approximately 38 acres, 24 of which are within the State-owned parcel 002.

We concur with the assessment that this site is significant under National Register criteria (a), (c), (d); and State of Hawaii significance criterion (e). Further research could potentially indicate significance under National Register criterion (b) as well. The site has been listed in the State Inventory of Historic Places (Site 50-10-74-29231), and is eligible for inclusion in the State and National Registers. The most suitable mitigation measure for historic properties and traditional cultural properties significant under multiple criteria is to avoid the site and take measures to ensure preservation and protection of the site. We concur with the recommendation that the project area be relocated to ensure there are no direct or indirect impacts to Kahua Olohu. We are willing to work with DLNR Land Division and the adjacent landowner of parcel 005 to pursue State and National Register nomination of this significant cultural property. Thank you for considering an alternative location for this project.

Aloha,

Theresa K. Donham  
Deputy State Historic Preservation Officer  
State Historic Preservation Division

cc: Wynn Miyamoto (via email)  
Gordon Heit (via email)  
Rowland Reeve (via email)

character of each feature. The Feature A platform, which possessed the potential to contain a burial or to mark a lava tube entrance, was determined to be just a stone platform. The lack of any cultural material, other than a single fragment of marine shell, makes determining the original function of the platform difficult. At this time Feature A has no identified function.

The opposite is true for the excavations at Site 29387. The site was originally postulated to be an agricultural terrace. Test excavations, however, recovered a number of historic materials (rubber, metal, glass and a red brick) within the fill of the supposed terrace. The recovered material allowed for the determination that the site was not an agricultural terrace, but rather, a ranch era wall against which soil and debris has been pushed during the bulldozing of an adjacent area. It is for these reasons that the subsurface testing was successful.

The seventeen sites located outside the two project parcels and identified during the reconnaissance survey were not recorded at the inventory survey level. Thus they cannot be adequately evaluated for their cultural and historic significance. However, for the purposes of future work in the area, the complex of sites should be viewed as a whole, in conjunction with the *makahiki* field, and should be considered during the planning process due to their importance and significance to the prehistory of the area.

If, for any reason, the current project areas are determined to be unsuitable for the waste water treatment facility and it is necessary to shift the site location to an area outside the limits of the two parcels which were examined during the present inventory survey, additional archaeological work will need. Another inventory survey will be need to be undertaken within this newly established project area.

It is our understanding that some of the funding for the Na'alehu WWTP is being provided by the Environmental Protection Agency (EPA). This makes the project a federal undertaking subject to Section 106 of the National Historic Preservation Act of 1966 (NHPA). Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties. It is understood that consultations related to the Section 106 process will be conducted for this project.

Sec 106  
on Naalehu  
July 2012

DRAFT – Archaeological Inventory Survey  
Na'alehu Wastewater Treatment Facility  
Kaunamano Ahupua'a, Ka'u District, Hawai'i Island  
July 2012 61



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 <b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> Assistance Amendment	<b>GRANT NUMBER (FAIN):</b> 96942401 <b>MODIFICATION NUMBER:</b> 7 <b>PROGRAM CODE:</b> XP	<b>DATE OF AWARD:</b> 05/30/2018
	<b>TYPE OF ACTION:</b> No Cost Amendment	<b>MAILING DATE:</b> 05/30/2018
	<b>PAYMENT METHOD:</b> Reimbursement	<b>ACH#</b>
	<b>Send Payment Request to:</b> Las Vegas Finance Center, Fax (702) 798-2423	
<b>RECIPIENT TYPE:</b> State	<b>PAYEE:</b>	
<b>RECIPIENT:</b> County of Hawaii 25 Aupuni Street Hilo, HI 96720 EIN: 99-6000567	County of Hawaii 25 Aupuni Street Hilo, HI 96720	
<b>PROJECT MANAGER</b> Dora Beck 25 Aupuni Street Hilo, HI 96720 E-Mail: <a href="mailto:dbeck@co.hawaii.hi.us">dbeck@co.hawaii.hi.us</a> Phone: 808-961-8513	<b>EPA PROJECT OFFICER</b> Kato Rao 75 Hawthorne Street, WTR-3-2 San Francisco, CA 94105 E-Mail: <a href="mailto:kao.kato@epa.gov">kao.kato@epa.gov</a> Phone: 415-972-3533	<b>EPA GRANT SPECIALIST</b> Martha Villarreal Grants Management Office, EMD-6-1 E-Mail: <a href="mailto:villarreal.martha@epa.gov">villarreal.martha@epa.gov</a> Phone: 415-972-3666
<b>PROJECT TITLE AND EXPLANATION OF CHANGES</b> Special Appropriation - Kau District Cesspool Replacement Project  The purpose of the award is for the design and construction of wastewater system improvements in Pahala (Kau District) in the County of Hawaii. The award description is being updated to reflect the shift of project location from Na'alehu to Pahala. Both of these sites are located in the Kau District. Federal funds and the recipient match will be allocated only to the 'Construction - Wastewater Treatment and Disposal System' task in the approved Pahala Community Large Capacity Cesspools Replacement Project work plan.  This action decreases the recipient contribution to \$1,507,214 which is reflected in the revised budget and project workplan.		
<b>BUDGET PERIOD</b> 06/01/2005 - 10/30/2020	<b>PROJECT PERIOD</b> 06/01/2005 - 10/30/2020	<b>TOTAL BUDGET PERIOD COST</b> \$3,349,364.00
<b>NOTICE OF AWARD</b>		
Based on your Application dated 03/24/2009 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards \$0. EPA agrees to cost-share 55.00% of all approved budget period costs incurred, up to and not exceeding total federal funding of \$1,842,150. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.		
<b>ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)</b>		<b>AWARD APPROVAL OFFICE</b>
<b>ORGANIZATION / ADDRESS</b> U.S. EPA, Region 9 - Grants Management Section, EMD 6-1 75 Hawthorne Street San Francisco, CA 94105		<b>ORGANIZATION / ADDRESS</b> U.S. EPA, Region 9 Water Division, WTR-1 75 Hawthorne Street San Francisco, CA 94105
<b>THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY</b>		
Digital signature applied by EPA Award Official for Carolyn Truong - Grants Management Officer Martha Villarreal - Award Official delegate		<b>DATE</b> 05/30/2018

**EPA Funding Information**

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$ 1,842,150	\$ 0	\$ 1,842,150
EPA In-Kind Amount	\$ 0	\$	\$ 0
Unexpended Prior Year Balance	\$ 0	\$	\$ 0
Other Federal Funds	\$ 0	\$	\$ 0
Recipient Contribution	\$ 5,657,850	\$ -4,150,636	\$ 1,507,214
State Contribution	\$ 0	\$	\$ 0
Local Contribution	\$ 0	\$	\$ 0
Other Contribution	\$ 0	\$	\$ 0
Allowable Project Cost	\$ 7,500,000	\$ -4,150,636	\$ 3,349,364

<b>Assistance Program (CFDA)</b> 68.606 - Surveys - Studies - Investigations and Special Purpose Grants	<b>Statutory Authority</b> Consolidated Appropriations Act of 2006 Consolidated Appropriations Act of 2004 (PL 108-199) Consolidated Appropriations Act of 2005 (PL 108-447) Consolidated Appropriations Resolution 2003 (PL 108-7)	<b>Regulatory Authority</b> 40 CFR PART 31
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Fiscal									
Site Name	Req No	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation

Budget Summary Page

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Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$0
2. Fringe Benefits	\$0
3. Travel	\$0
4. Equipment	\$0
5. Supplies	\$0
6. Contractual	\$3,349,364
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$3,349,364
10. Indirect Costs: % Base	\$0
11. Total (Share: Recipient 45.00 % Federal 55.00 %)	\$3,349,364
12. Total Approved Assistance Amount	\$1,842,150
13. Program Income	\$0
14. Total EPA Amount Awarded This Action	\$0
15. Total EPA Amount Awarded To Date	\$1,842,150

Detailed Table B Budget Page: 1

Table B - Program Element Classification (Non-construction)	Total Approved Allowable Budget Period Cost
1. A REQUIRED MATCH OF 45% OF THE TOTAL PROJECT COSTS IS REQUIRED.	\$
2.	\$
3.	\$
4.	\$
5.	\$
6.	\$
7.	\$
8.	\$
9.	\$
10.	\$
11. Total (Share: Recip % Fed %)	\$
12. Total Approved Assistance Amount	\$

**Administrative Conditions**

Previous Administrative Conditions Remain the Same

**Programmatic Conditions**

Previous Programmatic Conditions Remain the Same

END OF DOCUMENT

XP - 96942401 - 7 Page 4





10349-01  
March 6, 2020

ref (65)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka'u, Hawai'i  
Response to Comment – December 10, 2018 3:01 p.m.

Dear Ms. Demoruelle:

Thank you for your December 10, 2018 3:01 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our response follows:

The Draft EA Section 3.15 states, on March 29, 2018, consultation was initiated for the project under the National Historic Preservation Act. The Draft EA Section 10 provides a list of the consulted parties. The Final EA Section 3.15 will include that the list of Native Hawaiian Organizations (NHO) was generated by the EPA from the U.S. Department of the Interior, Office of Native Hawaiian Relations, Native Hawaiian Organization (NHO) Notification List for NHPA Section 106 and HRS Chapter 6E compliance. Letters were sent to 14 NHOs during the pre-assessment consultation. No responses were received from these organizations.

On March 13, 2019, the HRS Chapter 6E determination and Section 106 review packet were submitted to SHPD along with a draft Archeological Inventory Survey (AIS). The SHPD response is pending. The Draft EA Section 3.15.2 states that prior to finalization of this EA and initiation of the Proposed Action, the Environmental Protection Agency (EPA) and the County of Hawai'i will conclude consultation with SHPD in accordance with Section 106 of the NHPA and will incorporate additional impact avoidance and minimization measures as necessary to result in a finding of no adverse effects to historic properties.

The Final EA Section 7 will include that on September 26, 2018, a public notice was published in the *Hawaii Tribune Herald* and *West Hawaii Today* newspapers. The public notice was to advertise the October 10, 2018, public information meeting conducted by the County in the Pāhala at the Ka'u Gym Multi-Purpose Conference Room to discuss the availability of the Draft EA and process for submitting comments. The notice stated the second part of the meeting would address Section 106 of the National Historic Preservation Act of 1966, as amended (2006) involving consultation with Native Hawaiian Organizations and the Native Hawaiian descendants with ancestral lineal or cultural ties to, cultural knowledge or concerns for, and

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

10349-01  
Letter to Ms. Sandra Demoruelle  
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March 6, 2020

cultural religious attachment to the proposed project area. Eight persons placed their names on a sign in sheet at the October 10, 2018 public meeting to contribute during the second part of the meeting dedicated to the Section 106 consultation. No comments or information were forthcoming during the Section 106 portion of the meeting.

The Naalehu projects are not the subject of the Pāhala Large Capacity Cesspool Replacement Project Draft EA.

We appreciate your participation in the Draft EA process.

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#66

#53

Earl Matsukawa

**From:** Naalehu Theatre <naalehuthatre@yahoo.com>  
**Sent:** Monday, December 10, 2018 3:29 PM  
**To:** Public Comment  
**Cc:** Kaena Horowitz; Dora Beck; William Kucharski; Kate Rao; TESSA BERMAN; David Albright; Craig Lekven  
**Subject:** Pahala sewage flow rates not detailed

woc 12-12-2018

The engineers fail to justify the extremely high Pahala wastewater flow rates which should have been based on City and County of Honolulu Sewer Standards with an Average Wastewater Flowrate of 320 g/d per lot (4 persons per home X 80 gal. per person per day).

The LCC closure only required disconnecting from around a hundred households, so the flow rate for LCC closure purposes is around 32,000 g/d, which could easily be handled by one or two small packaged plants, affordably modular to accommodate growth, on a very small footprint of land with no noxious odors. **The Dec. 8, 2018 TEN shows a condo unit with a flow rate of 25,000 g/d handled by a renewable packaged plant. Why can't YOU consider 1 or 2 of these? The County and Ka'u taxpayers are not RICH! How can we afford your grandiose plans to spend \$81 million on two \$20 mill dollar towns?**

Plus, it is suspicious that the Naalehu Project should cite a "costs plus 25%" wherein over \$8 million of the projected total of \$40.5 mill. is allotted, loosely, to admin and legal costs. It suggests a "slush-fund" for kick-backs or other fraudulent purposes!

This whole boondoggle has resulted in spending untold dollars for no results - and the Hawaii County Council does not care enough about spending to call for a legislative audit.

Unfortunately, with the twin WWTP projects in Ka'u, the money has flowed more freely than the sewage will.

Sandra Demoruelle

--  
This message has been scanned for viruses and dangerous content using [Worry-Free Mail Security](#), and is believed to be clean. [Click here to report this message as spam.](#)



10349-01  
March 6, 2020

ref (66)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

**Subject:** Draft Environmental Assessment (EA) for the  
 Pāhala Large Capacity Cesspool Replacement Project  
 District of Ka'u, Hawai'i  
 Response to Comment – December 10, 2018 3:29 p.m.

Dear Ms. Demoruelle:

Thank you for your December 10, 2018 3:29 p.m. comment message regarding the County of Hawai'i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Hawaii Administrative Rules (HAR) 11-62-24 (b) requires County wastewater treatment works to be designed in accordance with County standards. If a county does not have design standards, then the design standards for the City and County of Honolulu shall be used. The County of Hawaii does not have design standards; therefore, the City and County of Honolulu standards are applicable to the Pāhala WWTP. The Draft EA Section 2.3.1 states that wastewater flow projections were developed for the treatment and disposal facility using the City and County of Honolulu wastewater standards, most recently updated in 2017. Based on these standards, the Pāhala treatment and disposal facility would be designed to provide an average dry weather flow capacity of 190,000 gallons per day (gpd) which would be sufficient capacity to allow closure of the two LCCs. The Draft EA Appendix B contains additional detail on the flow projections. The corresponding design peak day wet weather flow is 650,000 gpd. Future sewer main extensions and subdivisions will be accommodated, as capacity allows, on a first come, first served basis. Further, the wastewater treatment plant (WWTP) design will be expandable to not preclude treating future average dry weather flows up to 360,000 gpd (with a corresponding peak day wet weather flow of 1,260,000 gpd) to meet the future needs of the, in accordance with the requirements established in the Ka'u Community Development Plan Policy 120.

Further, The Draft EA, Appendix B states the proposed treatment facility will accommodate modification within the proposed 14.9-acre site for the future expansion of the service area.

It should be noted that wastewater flows from a community are highly variable, and peak flow rates from small community wastewater collection systems are typically three to five times higher than the average flow rates. The City and County of Honolulu standards take this variability into account, and application of the standards results in conservatively-designed

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facilities that are protective of human health and the environment in anticipated operational conditions. This information will be added to the Final EA.

Package plants are pre-manufactured treatment facilities that may be used to treat wastewater in small communities or on individual properties. Typical flows for this technology range between 10,000 and 250,000 gallons per day (Metcalf and Eddy, 1991). Although they have the advantage of a small footprint and associated capital cost, these plants have limited storage and equalization capacity, require the addition of chemicals, and are operationally complex. They are energy intensive, and the solids produced must be properly handled and disposed. Package plants do not commonly achieve denitrification or phosphorus removal without additional unit processes. Often, package plants utilize proprietary equipment adding to operational costs and equipment availability issues when replacements are unavailable or the equipment becomes obsolete.

Because of the need for daily operations and maintenance, on-site chemical storage and chemical addition, mechanical complexity, lack of operational flexibility under changing conditions, energy consumption and sludge handling concerns, packaged plants were removed from consideration for the Proposed Action.

The above information will be included in the Final EA, Section 2.8.2

Regardless of the treatment process, the proposed treatment facility will require a method to dispose of the treated effluent. As outlined in the Draft EA section 2.3.1, the Proposed Alternative will utilize a land application system. As stated in the Draft EA Section 2.8.3, several effluent management options were evaluated for feasibility as an alternative to land application. Options removed from consideration included ocean discharge, injection wells, water recycling, and drain (leach) field. Additional detail can be found in the Draft EA Appendix B, Section 3.1.6.

The Naalehu project is not the subject of the Pāhala Large Capacity Cesspool Replacement Project Draft EA.

We appreciate your participation in the Draft EA process.

Sincerely,



Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

# 75

808-946-3211  
Total Pages: 19  
11/23/2018

### COMMENT: PAHALA DEB

TO: Pahala Testimony to Environmental Management Commission  
FROM: SANDRA DEMORUELLE

November 28, 2018 Meeting

DEMORUELLE - The Naalehu PER reflects position of the Commission with factual information. The following provide the Commission with factual information.

- 1) Updated location and costs of the Naalehu WWTP
  - a. Site: 100 ft behind the Naalehu Hongwanji and 400 ft from the well

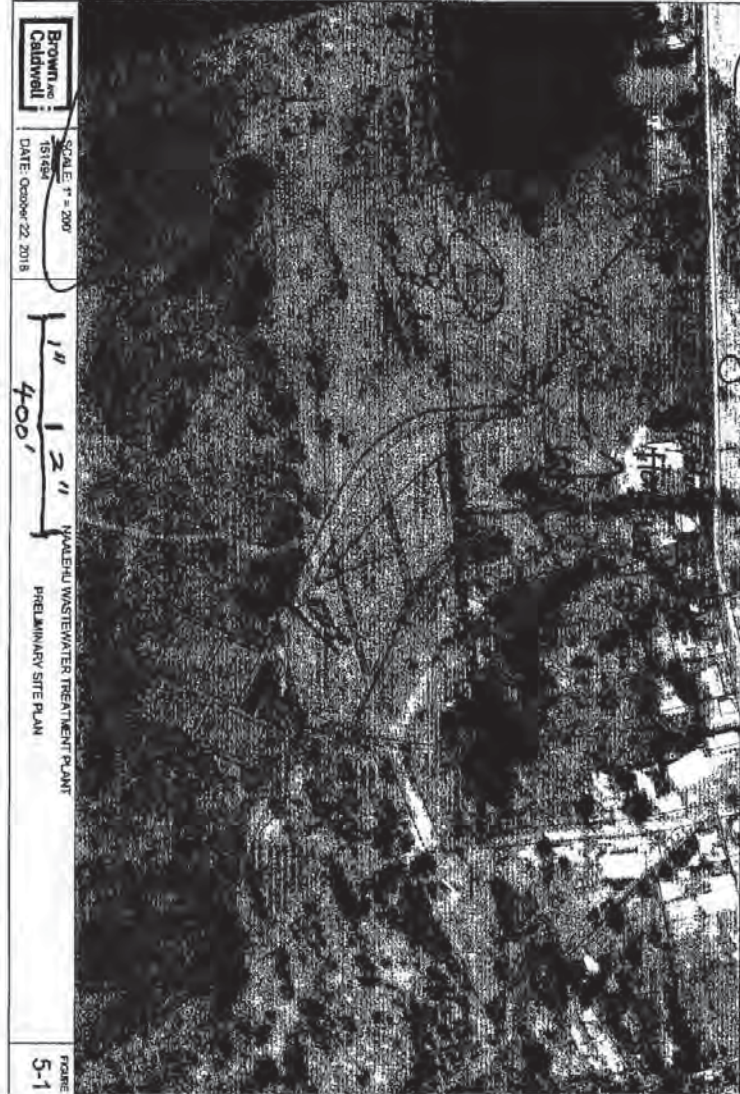
(Apparently Brown and Caldwell and COHDEM are not aware of the difference between a 1000 foot radius and a 1000 foot diameter as pictured in Figure 5-1)

- b. 30-year Cost (for 163 households on LCCs): Between \$50,317, 478 and \$91,059,595

- 2) Demoruelle v. Beck evidence of misconduct in following NEPA/HEPA
  - a. Original Joint Naalehu/Pahala EPA grant funding triggering NEPA/HEPA (see Section P1)
  - b. EPA grant payment of \$133,853 on 1/6/2011
  - c. Dora Beck signed Federal Financial Report for joint grant on 11/7/2011 leaving grant fund balance of \$1,728,297 as of that date
  - d. Naalehu LCC Conversion Schedule of Deliverables for EPA grant payment of \$133,853
  - e. "Pahala Grant Work Plan" dated April 21, 2017 that does not show the \$133,853 payment made in 2011, showing a continuing original grant funds payable balance of \$1,842,150 and stating that all six grant amendments were for the Naalehu project with the separation of projects to only Naalehu per Dora Beck's May 2009 Work Plan (see EPA Kate Rao email of 03/11/2009 9:46 AM)
  - f. While the Pahala Project was not subject to NEPA procedures until Grant Amendment 7 on 05/30/20118, EPA and COHDEM had started NEPA procedures much earlier (see Feb. 28, 2018 email starting NHPA consultation for ONLY Pahala - thus avoiding Historic Preservation and Endangered Species Act on the Naalehu [PONC] property - which is described in Res. 650-18 as having special historic and endangered species concerns)

Thank you, Sandra Demoruelle

PER: P:\Projects\Naalehu County Of (03111484) COH HONGWANJI WWTP PER, CADQ FIGURE PER # 0330  
File Name: 10188\FIG5-1\WWTP PreliminarySitePlan File Date: October 23, 2018 4:08 PM Cad User: jma Computer:



WELL  
well DNR COHDEM 03/31/09  
actually 400' from plant

COUNTY OF HAWAII



STATE OF HAWAII

RESOLUTION NO. 650 18

A RESOLUTION AUTHORIZING THE DIRECTOR OF FINANCE TO ENTER INTO NEGOTIATIONS FOR THE ACQUISITION OF LAND OR A CONSERVATION EASEMENT FOR ALL OR A PORTION OF THE PROPERTY IDENTIFIED AS TAX MAP KEY (3) 9-5-007:016 IN THE AHUPUA'A OF KAHILIPALI'IKI AND KAHILIPALINUI, DISTRICT OF KA'U, PURSUANT TO CHAPTER 2, ARTICLE 42, HAWAII COUNTY CODE 1983 (2016 EDITION, AS AMENDED).

WHEREAS, Ka'u Mahi, LLC owns the property identified as Tax Map Key: (3) 9-5-007:016, which comprises approximately 2,013.142 acres, in the Ahupua'a of Kahilipali'iiki and Kahilipalinui, District of Ka'u, which is located makai (oceanside) of Ne'alehu Town and includes the historic fishing village of Waikapuna, hereinafter referred to as the "Waikapuna Property" or the "Property"; and

WHEREAS, Chapter 2, Article 42, Hawaii County Code provides for a Public Access, Open Space, and Natural Resources Preservation Fund; and

WHEREAS, Section 2-215, Hawaii County Code, established the Public Access, Open Space, and Natural Resources Preservation Commission (hereinafter "Commission"); and

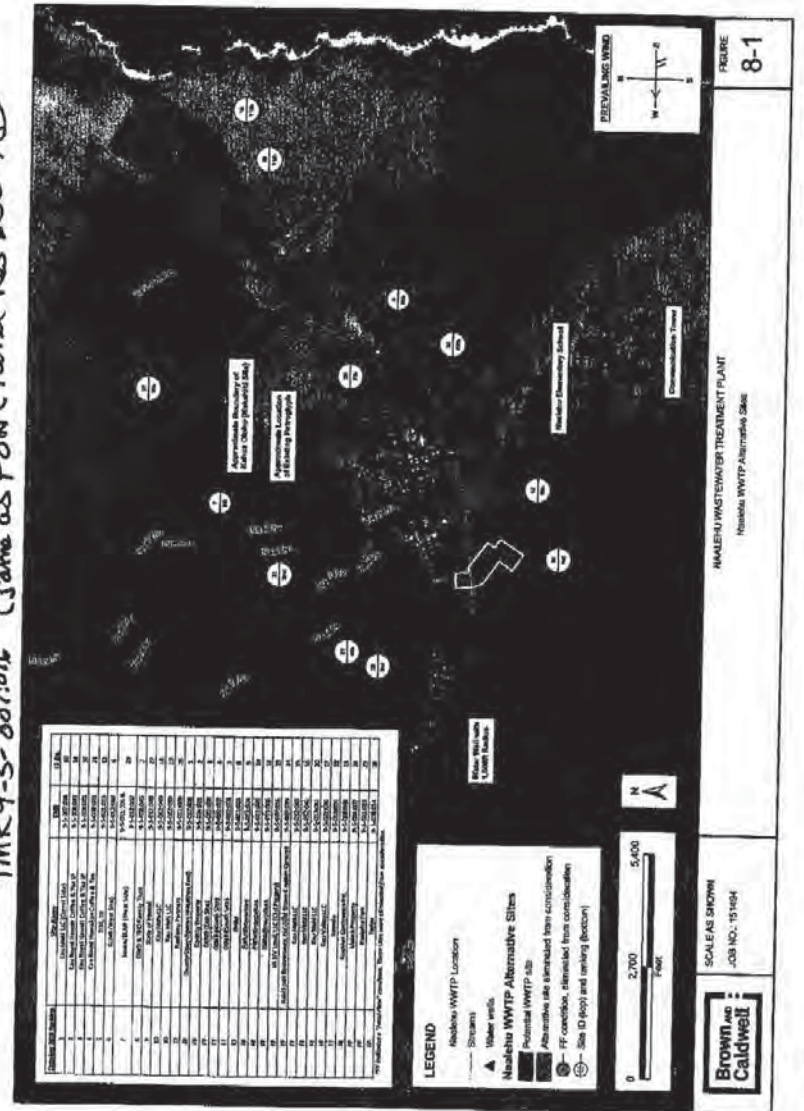
WHEREAS, Section 2-217, Hawaii County Code, provides, in pertinent part, that the Commission's first duty and responsibility is, "[t]o develop and submit to the Mayor an initial island-wide prioritized list of qualifying lands worthy of preservation ..." and for the priorities to be "listed on an island-wide rather than district basis"; and

WHEREAS, the 2017 Annual Report of the Commission listed the Waikapuna Property and assigned it the highest priority for acquisition of any property listed in the 2017 Annual Report; and

WHEREAS, Communication No. 72.2 from the Mayor, dated January 18, 2018, recommended that the Council accept the prioritized list presented in the 2017 Annual Report of the Commission, pursuant to Section 2-218(a) of the Hawaii County Code; and

WHEREAS, the Waikapuna Property has exceptional cultural, historical, environmental, and natural significance and value as it contains 2.3 miles of coastline that includes the ancient Aialoa footpath which once encircled the island, also known as the Alanui or Ala Kahakai National Historic Trail, and the Property is presently used by local fishermen, Native Hawaiian descendants, and gatherers of various natural and marine resources for subsistence, recreational, and cultural purposes; and

TMK 9-5-007:016 (Same as PONC Land Res 650-18)



COSTS

County of Hawaii, DEM  
Naaalehu WWTP Options Assessment  
Alternatives Net Present Value Analysis

Agency:	County of Hawaii, DEM	Sensitivity Adjustments (%)	Results
Project/Problem:	Naaalehu WWTP Options Assessment		
Alternative 1	Lagoons / wetlands/ dewatering / land application		\$40,500,000 (\$50,317,478)
Alternative 2	R-1 treatment / land application		\$45,000,000 (\$71,891,316)
Alternative 3	R-1 treatment / seasonal recycling (25%)		\$47,100,000 (\$72,719,613)
Alternative 4	R-1 treatment / annual storage res (100%)		\$54,400,000 (\$80,148,964)
Alternative 5	Limit of treatment technology / 25% recycle		\$55,000,000 (\$81,059,595)
Alternative 6			
Alternative 7			
Alternative 8			
Alternative 9			
Alternative 10			
Alternative 11			
Alternative 12			

Year of analysis: 2018  
 Escalation rate: 3.20%  
 Discount rate: 5.50%

Select one:  
 All entries in dollars  
 All entries in thousands of dollars

Note: "Status quo" refers to Alternative 1

Make entries in yellow cells only

County of Hawaii, DEM  
Naaalehu WWTP Options Assessment  
Alternatives Net Present Value Analysis

Agency:	County of Hawaii, DEM	Sensitivity Adjustments (%)	Results
Project/Problem:	Naaalehu WWTP Options Assessment		
Alternative 1	Lagoons / wetlands/ dewatering / land application		\$40,500,000 (\$50,317,478)
Alternative 2	R-1 treatment / land application		\$45,000,000 (\$71,891,316)
Alternative 3	R-1 treatment / seasonal recycling (25%)		\$47,100,000 (\$72,719,613)
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Alternative 5	Limit of treatment technology / 25% recycle		\$55,000,000 (\$81,059,595)
Alternative 6			
Alternative 7			
Alternative 8			
Alternative 9			
Alternative 10			
Alternative 11			
Alternative 12			

Year of analysis: 2018  
 Escalation rate: 3.20%  
 Discount rate: 5.50%

Select one:  
 All entries in dollars  
 All entries in thousands of dollars

Note: "Status quo" refers to Alternative 1

Make entries in yellow cells only

Lowest = \$ 50,317,478  
 ÷ 163 Households =  
 \$308,696 / Household  
 UP to  
 Highest = \$91,059,595  
 ÷ 163 =  
 \$558,648 / Household

PAHALA

Pahala Wastewater Treatment Plant Preliminary Engineering Report

Section 5

### 5.5 Cost Estimates

An order of magnitude probable construction is summarized in Table 5-3. The estimate includes a 25 percent estimating contingency. The detailed cost estimate is included as Appendix A.

Description	Estimated Construction Cost
Electrical and Instrumentation	\$1,976,000
Headworks	\$906,000
Odor Control	\$412,000
Lagoons	\$2,222,000
Constructed Wetland	\$811,000
Land Application	\$925,000
On-site improvements	\$8,325,000
Off-site improvements	\$1,223,000
<b>Total Estimated Construction Cost</b>	<b>\$14,800,000</b>

### 5.6 Future Expansion

#### 5.6.1 Full Buildout Flows

Full buildout wastewater flow projections were developed using the Draft Ka'u Community Development Plan (March 2015) and the CCH's current (2017) wastewater standards. Table 5-4 summarizes the projected full buildout flows for the community, and Figure 2-1 shows the WWTP full buildout service area.

Description	Value	Peaking Factor
Average dry weather flow	360,000 gallons per day	1.0
Peak day wet weather flow	1,260,000 gallons per day	3.5
Peak hour wet weather flow	1,200 gallons per minute	4.8

#### 5.6.2 Improvements

To accommodate the flow increase anticipated from the full buildout of the Pahala wastewater collection system, the WWTP will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the 14.9-acre site.

Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solids recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater

NAALEHU

Naalehu Wastewater Treatment Plant Preliminary Engineering Report

Section 5

### 5.5 Cost Estimates

An order of magnitude probable capital cost is summarized in Table 5-3. The estimate includes a 20 percent estimating contingency. The detailed cost estimate is included in Appendix B.

Description	Estimated Construction Cost
Wastewater treatment plant and utilities	\$14,800,000
Land application system	\$6,400,000
Drainage Improvements	\$11,400,000
res: construction cost	\$32,400,000
Engineering, administration, and legal at 25% of construction cost	\$8,100,000
<b>Total capital cost</b>	<b>\$40,500,000</b>

### 5.6 Future Expansion

#### 5.6.1 Full Buildout Flows

Full buildout wastewater flow projections were developed using the Draft Ka'u Community Development Plan (March 2015) and the CCH's current (2017) wastewater standards. Table 5-4 summarizes the projected full buildout flows for the community, and Figure 2-2 shows the WWTP full buildout service area.

Description	Value	Peaking Factor
Average dry weather flow	390,000 gallons per day	1.0
Peak day wet weather flow	1,200,000 gallons per day	2.5*
Peak hour wet weather flow	1,250 gallons per minute	4.6

\* Derived from Critas and Tchoanoglous, 1998

#### 5.6.2 Improvements

To accommodate treatment of the increased flow anticipated from the full buildout of the Naalehu wastewater collection system, the WWTP will require facility upgrades. The recommended upgrades include headworks and odor control expansion within the existing WWTP site.

Additionally, the lagoon system will require modifications. Lagoon 1 will be converted to a complete mix aerated lagoon environment to accommodate wastewater treatment needs. In a complete mix aerated lagoon, sufficient mixing energy is provided to maintain the lagoon solids in suspension always. A completely mixed aerated lagoon system performs as an activated sludge process without solids recycle. The higher mixing energy, as compared to a partial mix lagoon, creates greater opportunity for contact between the naturally-occurring micro-organisms in the lagoon and dissolved organic matter. As a result, complete mix lagoons provide greater levels of treatment within a smaller volume than partial mix lagoons. However, facilities must be provided downstream of

Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/18 Page 1 of 7 PageID #: 318


		<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b>		<b>DATE OF AWARD</b> SEP 30 2005	
<b>GRANT AGREEMENT</b>		<b>TYPE OF ACTION</b> Special Appraisal		<b>DATE OF AWARD</b> SEP 30 2005	
<b>RECIPIENT TYPE:</b> Client		<b>PROJECT OFFICE:</b> San Francisco Office, PMD-7		<b>DATE OF AWARD</b> SEP 30 2005	
<b>RECIPIENT:</b> County of Mendocino		<b>PROJECT OFFICE:</b> San Francisco Office, PMD-7		<b>DATE OF AWARD</b> SEP 30 2005	
<b>PROJECT PERIOD:</b> 08/01/05 - 07/31/06		<b>PROJECT OFFICE:</b> San Francisco Office, PMD-7		<b>DATE OF AWARD</b> SEP 30 2005	
<b>PROJECT TITLE AND OBJECTIVE:</b> Special Appraisal - New Shasta Right-of-Way Project		<b>PROJECT OFFICE:</b> San Francisco Office, PMD-7		<b>DATE OF AWARD</b> SEP 30 2005	
<b>BUDGET PERIOD:</b> 08/01/05 - 07/31/06		<b>PROJECT PERIOD:</b> 08/01/05 - 07/31/06		<b>TOTAL BUDGET PERIOD COST:</b> \$1,000,000	
<b>TOTAL BUDGET PERIOD COST:</b> \$1,000,000		<b>PROJECT PERIOD:</b> 08/01/05 - 07/31/06		<b>TOTAL PROJECT PERIOD COST:</b> \$1,000,000	
<b>NOTE:</b> This agreement is subject to the terms and conditions of the Standard Conditions of Assistance Agreements in the Appendix to the Grant Agreement, and the Special Conditions of Assistance Agreements in the Appendix to the Grant Agreement. The recipient agrees to comply with all applicable laws, regulations, and orders of the EPA and the State of California, and to provide all necessary information and data to the EPA and the State of California. The recipient agrees to provide all necessary information and data to the EPA and the State of California. The recipient agrees to provide all necessary information and data to the EPA and the State of California.					
<b>GRANT AND ACCEPTANCE:</b> The United States, acting by and through the U.S. Environmental Protection Agency (EPA), hereby offers this Grant Agreement to the recipient for the purpose of carrying out the project described in the Appendix to the Grant Agreement. The recipient agrees to accept this Grant Agreement and to carry out the project described in the Appendix to the Grant Agreement. The recipient agrees to accept this Grant Agreement and to carry out the project described in the Appendix to the Grant Agreement.					
<b>SIGNATURE OF AWARD OFFICIAL:</b> <i>John J. ...</i>		<b>TYPED NAME AND TITLE:</b> John J. ... Director - Water Division		<b>DATE:</b> SEP 30 2005	
<b>BY ACCEPTANCE OF THE ORIGINAL RECIPIENT ORGANIZATION:</b>					
<b>SIGNATURE:</b>		<b>TYPED NAME AND TITLE:</b> Harty Kim, Mayor		<b>DATE:</b>	

EXHIBIT 5

Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/18 Page 7 of 7 PageID #: 324

15. The recipient shall fully comply with Subpart C of 40 CFR Part 32, entitled "Responsibilities of Participants Regarding Transactions." The recipient is responsible for ensuring that any lower tier covered transaction, as described in Subpart B of 40 CFR Part 32, entitled "Covered Transactions," includes a term or condition requiring compliance with Subpart C. The recipient is responsible for further requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions. The recipient acknowledges that failing to disclose the information required under 40 CFR 32.235 may result in the delay or rejection of this assistance agreement or purchase of project.

The recipient may access the Excluded Parties List System at <http://epls.epa.gov>. This term and condition supersedes EPA Form 5700-49, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters."

14. In accordance with 40 C.F.R. §31.40, the recipient agrees to submit performance reports that include brief information on each of the following areas: 1) a comparison of actual accomplishments to the outputs/outcomes established in the assistance agreement workplan for the period; 2) the reasons for slippage if established outputs/outcomes were not met; and 3) additional pertinent information, including, when appropriate, analysis and formation of cost overruns or high unit costs.

In accordance with 40 C.F.R. § 31.40 (c), the recipient agrees to inform EPA as soon as problems, delays or adverse conditions become known which will materially impair the ability to meet the outputs/outcomes specified in the assistance agreement work plan.

**Programmatic Condition**

P1. The recipient agrees not to bill or request reimbursement from EPA for any costs associated with the design or construction of the project funded by this grant, except for planning, environmental review and/or conceptual design until EPA has complied with the National Environmental Policy Act and other environmental cross-cutters (see 40 CFR 6.300 et seq) applicable to this project. If the grantee incurs such costs prior to the completion of any required environmental review, it does so at its own risk.

P2. The recipient agrees to provide to EPA Region 9 locational data (i.e., longitude and latitude) for the EPA-funded infrastructure project. The EPA Project Officer will provide further instructions at a later date on how to comply specifically with this requirement.

P3. At the conclusion of the project, the recipient shall submit an assessment of how effectively the project was in achieving the stated environmental benefit.

- END OF DOCUMENT -



12/30/2010 08:00:37 PM RCVD LVFC

Page 3 / 4

AW

U.S. EPA PAYMENT REQUEST

Recipient Name: County of Hawaii  
 25 Aupuni Street  
 Hilo, HI 96720  
 EIR#: 99-6000567  
 (808) 961-3096

Contract Person: Robin Bazeman  
 Phone #: (808) 961-8083  
 Email address: rbazeman@coo.hawaii.hi.us

Request # 8888  
 Cash on Hand: \$0.00

Account No/Activity Code Site Specificity	Quantity	Unit Price	Total
XP-9694248-1	113.983		113.983
TOTAL AMOUNT REQUESTED \$			113.983

Mark (X) if:  The EPA Internal Use Only

11AS0531727

I certify the data on this form is true and correct to the best of my knowledge and belief. This data allows me to contract and that all contract items are in accordance with the grant conditions or other agreements, and that I will not alter or tamper with any data previously reported.

APPROVAL: Frank Demore  
 Regional Approving Officer's Signature  
 Certified WEP  
 EPA Certifying Officer Approved  
 Date Approved: 1-4-11

12/30/10  
 Date Approved: 1-4-11  
 \$ 113,853.00  
 EPA APPROVED - MTS/MTS  
 See EPA User Guide

FEDERAL FINANCIAL REPORT

1. Federal Agency and Organizational Bureau to Which Report is Submitted: United States Environmental Protection Agency

2. Federal Grant or Other Identifying Number Assigned by Federal Agency (To report multiple grants, use FFR Attachments): XP-99-6000567-4

3. Applicant Organization (Street and complete address including ZIP code): County of Hawaii, 25 Aupuni Street, Hilo, HI 96720

4. DUNS Number: 09489272

5. Applicant Account Number or Identifying Number (To report multiple grants, see FFR Attachments): 99-6000567

6. Report Type: Semi-Annual

7. Basis of Accounting: Annual

8. Project/Activity Name: County of Hawaii, Hilo, HI

9. Reporting Period Start Date (MM/DD/YY): 12/31/09

10. Transmittal Date: 12/31/09

11. Description: By signing this report, I certify that it is true, complete, and accurate to the best of my knowledge. I am aware that any violation of this reporting requirement may constitute a criminal offense under Federal law.

12. Certification: By signing this report, I certify that it is true, complete, and accurate to the best of my knowledge. I am aware that any violation of this reporting requirement may constitute a criminal offense under Federal law.

13. Signature of Approving Official: Frank Demore

14. Signature of Approving Official Title: Regional Approving Officer

15. Date Report Submitted (MM/DD/YY): 12/31/09

Anna coll Kate Rao

TABLE 11: MAHALEHU LANDFILL CAPACITY EXPANSION: SCHEDULES OF DELIVERABLES AND COST BREAKDOWN

Task	Sub-Task	Estimated Completion Dates	Deliverables	Estimated Cost	County of Funds
Task 1.0 - Provide Preliminary Environmental Report	Task 1.1 - Provide Preliminary Environmental Report	2007 - Third Quarter	PER and EIR	\$270,100	County
	Task 1.2 - Provide Environmental Assessment	2007 - Fourth Quarter	EA		County
	Task 1.3 - Provide Final Environmental Assessment	2007 - First Quarter	FEA		County
Task 2.0 - Phase I EISA for THM 3-5-501-016	Task 2.1 - Phase I EISA for THM 3-5-501-016	2007 - Fourth Quarter	Phase I EISA Report	\$4,478	County
	Task 2.2 - EISA and Approval of THM 3-5-501-027	2008 - Second Quarter	EIR Report and Approval	\$27,809	County
Task 3.0 - Purchase of Equipment for Sewer Collection System	Task 3.1 - Purchase of Equipment for Sewer Collection System	2008 - Third Quarter	Equipment	\$270,000	County
	Task 3.2 - Installation of Equipment for Sewer Collection System	2008 - First Quarter	Installation	\$40,000	County
Task 4.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 4.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 4.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 5.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 5.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 5.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 6.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 6.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 6.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 7.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 7.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 7.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 8.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 8.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 8.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 9.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 9.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 9.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 10.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 10.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 10.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 11.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 11.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 11.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
Task 12.0 - Upgrade PER and EISA for THM 3-5-501-027	Task 12.1 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
	Task 12.2 - Upgrade PER and EISA for THM 3-5-501-027	2008 - First Quarter	PER and EIR	\$40,000	County
<b>TOTAL =</b>				<b>\$3718,578</b>	

Task Breakdowns = 210  
which is EISA for  
County of MAHALEHU  
one

In January 2017, it was proposed by the County in discussion with the EPA to shift the EPA Grant funds from Na'alehu to Pāhala as the probability of LCC closure in the latter community would be higher.

The Pāhala Community is located within the District of Ka'ū in the County of Hawai'i (Figure 1). The District of Ka'ū is situated at the southern tip of the Island and extends across the southern and southeastern flanks of Mauna Loa. With a land area of over 630,000 acres and an estimated population of over 5,000 persons, the District of Ka'ū is relatively isolated and unspoiled. The Pāhala Community is one of two major population centers in the District of Ka'ū with a population of 1,378 according to the year 2000 census. Since the closing of the Ka'ū Sugar Company in 1996, many of the residents within the community are former sugar workers and their descendants.

The initial site reconnaissance involved exploring possible properties southwest of Pāhala that are currently owned by the Department of Land and Natural Resources and Kamehameha Schools. While the properties would be suitable in size and distance from the town, it was decided that the topographic challenges would make extending the collection system to these areas very cost prohibitive.

Upon further exploration closer to town, it became evident that another property also owned by Kamehameha Schools and currently being leased by a local macadamia nut grower was a strong possibility for a wastewater treatment and disposal facility. The treated effluent would be treated to reuse quality and used to irrigate the macadamia nut trees. The archaeological field inspection conducted in November 2016 showed that while some relevant surface artifacts were found, the property was still considered a strong possibility for siting a wastewater treatment facility. The County has hired a designer who will help the County with acquiring the necessary acreage of property upon completion of further archaeological studies and interfacing with the landowner and concerning agencies.

Since the intent is to shift the federal funds from Na'alehu to Pāhala to be utilized in the LCC replacement effort, federal NEPA requirements apply. No construction related to the project can begin until NEPA is completed. A new EA will be done for Pāhala as the 2007 EA does not describe the type of wastewater treatment and disposal system envisioned for Pāhala.

**II. Summary of Congressional Earmark Funds**

Prog-Doc ID	Amend #	Award Amount	This Action	Budget Period	Date of Award
XP-9694240	0	\$1,364,250	Initial Award	06/01/05-12/31/07	09/20/05
XP-9694240	1	\$1,842,150	\$477,900	06/01/05-04/28/10	06/01/06
XP-9694240	2	\$1,842,150	\$0	06/01/05-06/01/12	03/18/10
XP-9694240	3	\$1,842,150	\$0	06/01/05-06/30/14	07/14/11
XP-9694240	4	\$1,842,150	\$0	06/01/05-06/30/14	08/16/11
XP-9694240	5	\$1,842,150	\$0	06/01/05-06/30/16	01/28/14
XP-9694240	6	\$1,842,150	\$0	06/01/05-10/30/20	04/26/16

*All for NAALEHU RESOURCE NEPA PROCEDURES from 9/28/05 to 5/29/2018 for NAALEHU PROJECT*

Pāhala Grant Work Plan  
April 21, 2017

Page 3 of 9

As shown in the above table, following the initial award there was one (1) added cost extension followed by five (5) no-cost extensions. Information pertaining to the reason for the added cost extension is not at hand.

1. Amendment Nos. 1 through 3 was intended to fund the Ka'ū Project (Nā'ālehu and Pāhala Large Capacity Cesspool Replacement projects). The plan was to fund the Project that would service both communities by installing a new collection system to be connected to a large capacity septic system. Delays that likely contributed to the no-cost extensions under Amendment Nos. 2 and 3 are as follows: From late 2005 to 2010, the County became more involved with the project and worked with the owner of the existing sewer system (C. Brewer) who had requested the assistance of the County of Hawai'i with closing their large capacity cesspools. In 2006, the County hired a consultant to begin the conceptual design for a wastewater treatment plant and disposal system and to hold public meetings. Due to the upcoming dissolution of their company, C. Brewer requested that the County enter into an agreement that they construct, own, operate and maintain a new wastewater system, or take over the existing C. Brewer system by April 30, 2010. In 2008, based on poor soil percolation test results for the disposal concept, the large capacity septic system was determined to not be a suitable option. Consequently, the County began exploring other land options that would accommodate a secondary treatment plant and disposal area that would provide better wastewater treatment and be expandable for potential growth of the community. Also during this time, the County had been working with C. Brewer to ensure that they fulfilled their end of the agreement to install sewer laterals within each of the private properties in Nā'ālehu and Pāhala and install the booster pump cans and associated plumbing and electrical conduits for those properties that require pumping.

Project Separation  
email to Dora Beck  
3/11/2009

Amendment No. 4 took place when the County was given the approval to separate the Ka'ū Project into Nā'ālehu and Pāhala with each location having a new sewer collection system and wastewater treatment/disposal facility to replace the existing sewer system including large capacity cesspool closure. The intent was to direct EPA Grant funds to the Nā'ālehu Project because at that time, the probability of identifying available land in Nā'ālehu was higher compared to Pāhala. The no-cost extension was to give the County additional time to work on identifying a suitable site for a wastewater treatment plant in Nā'ālehu.

3. Amendment No. 5 took place when the County determined that the Nā'ālehu project would be delayed by approximately 24 months due to efforts of finding a site for the new wastewater treatment plant. The additional time required was spent investigating thirteen (13) properties consisting of private, County and State ownership and narrowing down the choice to a State-owned property. Consideration was required to avoid impacting residential areas, potable water wells, flood zones, lava tubes and cultural/archaeological sites. Apparent community concern for the wastewater treatment plant site location and additional consultations were also anticipated as part of the delay.

4. Amendment No. 6 took place when the County determined that the Nā'ālehu project would be delayed by approximately 48 months based on actual Nā'ālehu Community Member concerns and oppositional comments to the choice of site received during the Pre-Consultation Notice period for the draft Environmental Assessment for Nā'ālehu. The delay time took into account potential re-planning depending upon the outcome of upcoming community meetings.

5. Due to the anticipated delays on the Nā'ālehu project, the shifting of the EPA Grant from Nā'ālehu to Pāhala (where a land option has been identified) is under consideration.

III. Purpose

Amendment 7 Dated & Award 8/30/2018  
Date Pāhala NEPA STARTED

Per Federal regulations, all existing LCCs must be closed and the Pāhala Community must be serviced by an acceptable wastewater collection, treatment and disposal system. There are no existing County of Hawai'i (County) wastewater treatment plants in the Ka'ū District. The closest County wastewater treatment plant is located in the town of Hilo which is approximately 60 miles north of Nā'ālehu.

The residential community is served by a sewer system comprised of substandard gravity lines that convey sewage to two (2) large capacity cesspools (LCCs) which were previously owned and operated by C. Brewer and Company, Ltd. (C. Brewer) and are approximately 60 years old. Per an agreement between the County and C. Brewer, the County assumed ownership of the sewer system in 2010. The existing Pāhala Sewer System is as shown in Figure 2 herein.

IV. Objectives

The objective is to replace and close two (2) LCCs currently servicing the Pāhala Community.

The existing Pāhala Community sewer system servicing 109 properties will be replaced with a collection system meeting County standards; and a Secondary Wastewater Treatment and Disposal facility meeting State Department of Health standards. An additional 65 properties, including the Pāhala Elementary School, that are not currently being served by the C. Brewer system will be made accessible to the County Sewer system as required by Hawai'i County Code Chapter 21, Sewers, and Hawai'i Administrative Rules (HAR) Section 11-62-06, Wastewater Systems. The result is a total of 174 properties serviced by the new Pāhala Collection, Treatment, and Disposal system. The new Pāhala Collection System is as shown in Figure 3 herein and the new Wastewater Treatment and Disposal System is as shown in Figure 4 herein.

V. Methods

To meet the objective, the County will contract the services of an engineering design consultant to carry out the requirements of the State of Hawai'i Revised Statutes (HRS) 343; prepare the Environmental Information Document (EID) for EPA's review; prepare a NEPA EIS; plan and design a wastewater treatment and disposal system for the Pāhala

(In Archive) Note to File: Kau LCC Replacement Project

Kate Rao to: Kate Rao

03/11/2009 09:46 AM

Archive. This message is being viewed in an archive.

March 10, 2009: Spoke with Dora Beck about modifying scope of project to focus on Naalehu only. She agreed with this approach and plans to submit a revised workplan noting this change.

Kate Rao  
Ground Water Office (WTR-9)  
USEPA Region 9  
75 Hawthorne St., San Francisco, CA 94105  
tel: (415) 972-3533 / fax: (415) 947-3549

*Handwritten:* Updated May 2009

Case 1:18-cv-00172-JMS-KSC Document 25-11 Filed 09/14/18 Page 1 of 1 PageID #: 344

XP: 08042401 - 7 Page 1

	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b>		GRANT NUMBER (FAIN): 98942401	DATE OF AWARD: 05/30/2018
	<b>Assistance Amendment</b>		MODIFICATION NUMBER: 7 PROGRAM CODE: XP	MAILING DATE: 05/30/2018
RECIPIENT TYPE: State		TYPE OF ACTION: No Cost Amendment		PAYMENT METHOD: ACH
RECIPIENT: County of Hawaii 25 Aupuni Street Hilo, HI 96720 EIN: 98-8000587		PAYEE: County of Hawaii 25 Aupuni Street Hilo, HI 96720		Send Payment Request to: Las Vegas Finance Center, Fax (702) 798-2425
PROJECT MANAGER: Dora Beck 25 Aupuni Street Hilo, HI 96720 E-Mail: dbeck@co.hawaii.hi.us Phone: 808-981-8513	EPA PROJECT OFFICER: Kate Rao 75 Hawthorne Street, WTR-3-2 San Francisco, CA 94105 E-Mail: krao.kate@epa.gov Phone: 415-972-3533	EPA GRANT SPECIALIST: Martha Villanreal Granite Management Office, EMD-6-1 E-Mail: villanreal.martha@epa.gov Phone: 415-972-3668		
<b>PROJECT TITLE AND EXPLANATION OF CHANGES</b> Special Appropriation - Kau District Capacity Replacement Project  The purpose of the award is for the design and construction of wastewater system improvements in Pahala (Kau District) in the County of Hawaii. The award description is being updated to reflect the shift of project location from Naalehu to Pahala. Both of these sites are located in the Kau District. Federal funds and the recipient match will be allocated only to the "Construction - Wastewater Treatment and Disposal System" task in the approved Pahala Community Large Capacity Wastewater Replacement Project work plan.  This action decreased the recipient contribution to \$1,807,214 which is reflected in the revised budget and project workplan.				
BUDGET PERIOD: 06/01/2005 - 10/30/2020	PROJECT PERIOD: 06/01/2005 - 10/30/2020	TOTAL BUDGET PERIOD COST: \$3,349,364.00	TOTAL PROJECT PERIOD COST: \$3,349,364.00	
<b>NOTICE OF AWARD</b>				
Based on your Application dated 03/24/2008 including all modifications and amendments, the United States acting by and through the U.S. Environmental Protection Agency (EPA) hereby awards \$0. EPA agrees to cost-share 55.02% of all approved budget period costs incurred, up to and not exceeding total federal funding of \$1,842,150. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions all terms and conditions of this agreement and any attachments.				
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)		AWARD APPROVAL OFFICE		
ORGANIZATION / ADDRESS: U.S. EPA, Region 9 - Granite Management Section, EMD 6-1 75 Hawthorne Street San Francisco, CA 94105		ORGANIZATION / ADDRESS: U.S. EPA, Region 9 Water Division, WTR-1 75 Hawthorne Street San Francisco, CA 94105		
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY				
Digital signature applied by EPA Award Official for Carolyn Truong - Granite Management Officer Martha Villanreal - Award Official delegate				DATE: 05/30/2018



10349-01  
March 6, 2020

ref (75)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Ka‘u, Hawai‘i  
Response to Comment – December 10, 2018 4:38 p.m.

Dear Ms. Demoruelle:

Thank you for your December 10, 2018 4:30 p.m. facsimile comment message regarding the County of Hawai‘i Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow:

Pages 1 to 13

This is not a comment pertinent to the contents of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

Page 14

The treatment and disposal facility for the Pāhala Large Capacity Cesspool Replacement project will not provide treated effluent to reuse quality which could be used to irrigate macadamia nut trees. This information will be repeated in the Final EA.

Pages 15 to 19

This is not a comment pertinent to the contents of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

Project information, including US Environmental Protection Agency (USEPA) compliance dates, project updates, schedules and milestones can be found on the USEPA website at: <https://www.epa.gov/uic/county-hawaii-administrative-order-consent-closure-cesspools-pahala-and-naalehu>.

We appreciate your participation in the Draft EA process.

10349-01  
Letter to Ms. Sandra Demoruelle  
Page 2  
March 6, 2020

Sincerely,

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

#23a

#23 1

2

COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT

woc oct27-2018

SUBMITTED TO:

Earl Matsukawa, AICP  
Project Manager  
Wilson Okamoto Corporation  
1907 South Beretania Street, Suite 400  
Honolulu, HI 96826  
Fax: 808/946-2253

SUBMITTED BY:


Sandra and Joseph Demoruelle  
Box 588  
Naalehu HI 96772

Comment:

See attached comments and supporting evidence that follow.

Signed in Naalehu, Hawaii on October 22, 2018

  
Sandra L. Demoruelle

  
Joseph L. Demoruelle

COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT –

**Demoruelle Page 1**

Mr. and Mrs. Demoruelle, forty year residents of Ka'u, point out that it is the public's duty to raise issues.

They must distinguish themselves by their open-mindedness, their high sense of justice and duty, by candor, modesty and their entire devotion to the welfare and interests of their community and humanity. The truth they state will become clear and evident to all. They are speaking the truth and never entertained hatred toward anyone. Their sole purpose in speaking out about the Ka'u LCC Closure Project is to state the truth and explain the situation.

Our Ka'u community, as a body, strives to the spirit of exclusiveness and the County and EPA atmosphere is one of secrecy to carry out their domineering activities.

Lacking collaboration with members of the Ka'u community, the common-sense and good judgment of people who reside here, the County and EPA has led to poor siting decisions in both Pahala and Naalehu.

Lacking any reciprocity, there was no thorough exploration of issues to seek unity of vision. There has been no spirit of inquiry into what is best for all concerned.

**Demoruelle Page 2**

Instead, the people of Ka'u who speak out are belittled, humiliated, insulted, ignored, and generally not accorded courtesy and respect.

We urge the use of consultation to overcome this feeling of powerlessness. But consultation is not an isolated event. It is a process that allows participants to grow more capable of fostering collaboration.

There are two types of consultation:

- 1) between equals leading to a joint decision like Ka'u CDP Policy 90 envisions (supported by both parties), and
- 2) decision being made by those with authority – so consultation takes form of discussion to draw out thoughts and information towards the enrichment of common understanding. In many cases, such interaction leads to consensus on a set of goals, both individual and collective.

“[T]he views of several individuals are assuredly preferable to one man, even as the power of a number of men is of course greater than the power of one

man.” (Cited in a letter written by Shoghi Effendi to the National Spiritual Assembly of Persia, February 15, 1922).

**Demoruelle Page 3**

Therefore, the Demoruells recommend the use of consultation with and within the Ka'u community to investigate reality and seek truth, convinced that this has the power to unite us.

**PROBLEM WITH THE USE OF THE THREAT OF SITING BY THE SCHOOL**

We are sick of seeing blameless children used as political pawns to allow Director Kucharski to place the Naalehu WWTP on his preferred site and use the school site as an “alternative.” Every discerning person can see the need for justice for Ka'u!

We don't know if it affects everyone in the same way, but the Environmental Management Commissioners appeared visibly horrified to see a kindergarten classroom beside the open sewage lagoons.

“All I could see was a horrible place for my great-grandson to drown...” is what Sandra Demoruelle thought when she saw the Brown and Caldwell presentation on April 11, 2018 at the Naalehu Community Clubhouse. “From the moment I saw the project last April, I have been running scared. It struck fear in my heart – and because they denied us any access to the EADs , it remains unclear how much this terrorism has cost us in wasted tax dollars and damage to our community. We ask – who will make reparations to the Ka'u LCC homeowners? And who will pay us for the personal injuries caused by the County's terroristic manipulations.”

**Demoruelle Page 4**

Surely we are all in **agreement with COHDEM Director Kucharski that his Department “have failed miserably in doing their duty to the environment and local residents.”** Let us be crystal clear, Mr. Kucharski is speaking of the taxpayer-funded COHDEM. (EMC, 4/25/18, Page 13).

The full quote is: “The cesspools were to have been closed by 2005, and they have failed miserably in doing their duty to the environment and local residents.” So we cannot understand why County Council has not done a legislative audit?

This is another depressing example of the ease with which taxpayer dollars are wasted and unknown collateral damage done to the community – like the harm done to the LCC households that now deserve reparations. It has been unfair and inhumane for Mr. Kucharski to abuse us this way.

Please contrast this failed process that led to terrorizing our community with a wastewater treatment plant adjoining our elementary school to Lono Kona, which, as Ka’u CDP requires, used USDA RD to promote broad participation in the decision-making process.

**Demoruelle Page 5**

Differences between the way the County of Hawaii Department of Environmental Management (COHDEM) has handled the Ka’u and Lono Kona LCC closure project:

- 1) Participation – Lono Kona had broad participation by many stakeholders in multiple public meetings held before project planning was completed. But both held household votes and the vote expressed consensus.
- 2) Public records – Lono Kona has readily available public records documenting the participatory process and public meetings – records that do not have to be requested and paid for!
- 3) County CDP Statutes were followed – during Lono Kona, the CDP statutes were followed and a large RD grant funded Lono Kona, while the 2017 Ka’u CDP makes no mention of either WWTP, nor was Policy 90 for public participation followed.
- 4) Self-funded Lono Kona v. CWSRF Loan funded Ka’u WWTPs – Kona households voted to pay the balance of the LCC closure costs – with RD grant funding for most of the projected costs. Except for a small amount of remaining EPA SAAP grant funding, the COHDEM plans to totally pay for the two WWTP projects with CWSRF funding, without informing and seeking



**Demoruelle Page 6**

participation from Hawaii taxpayers for these impending significant financial obligations.

5) Biggest difference is use of terrorism – COHDEM met with Lono Kona stakeholders early and made public records available for review. In Ka'u, the COHDEM and EPA failed to provide HRS 343 or NEPA notice in *TEN* for the two “talkstory” sessions intended “to inform the community the two WWTPs were going to happen” (Kucharski, EMC April 25, 2018, Page 13). No EA/EIS has been published for the Naalehu CWSRF funded project.

Instead of the Pahala and Naalehu meeting records being available online, as are Lono Kona’s meeting records indicating who was present and the meeting agenda and outcomes, the COHDEM refuses to provide any meeting information or environmental review records (except the Pahala PER/DEA) to the local libraries or online. By denying access under UIPA, the Naalehu DEA has been withheld since at least April 2017 per the AOC Attachment B Page 3 statement.

Under 92F-12, Mrs. Demoruelle’s request that COHDEM shall make available for public inspection and duplication during your regular business hours (3) government purchasing information (10) consultants (14) contracts has been denied. (*See also*, 92F-15 denial of record).

**Demoruelle Page 7****FAILURE TO DO AN EIS ON TWO FULL-SIZE WWTPS (11 MI. APART)**

ALL HAWAII WWTPs HAVE A HEPA EIS:

1996 Waialua–Haleiwa WWTP

1998 Waimanalo WWTP

2009 Koloa-Poipu WWTP

2010 Waiale Water Treatment Facility

2011 Kaneohe-Kailua Treatment Facility

2017 Honouliuli WWTP Secondary Treatment

3/23/2017 Kealakehe WWTP R1

The EISPN Act 172-12 Direct to EIS would have been the appropriate choice instead of this Pahala DEA, since all new-build WWTPs have required an EIS. In fact, HRS 11-400-12 and 13 (significity criteria) require that agencies show prior consultation; community meeting record; notice of public hearing; record and affidavit of publication, which COHDEM/EPA have failed to do.

Nowadays, it is hard to find an environmental suit where no NEPA EIS document was ever produced. Now, all the suits do is challenge the adequacy of

**Demoruelle Page 8**

the EIS document or the adequacy of public review. But this suit harkens back to the 1970s and early 1980s, when the idea that NEPA was procedural and the EIS was a requisite early guide to decision-making at all levels.

**HARM TO THE KA'U COMMUNITY**

The citizens of Ka'u, including Sandra and Joseph Demoruelle, have been significantly harmed by COHDEM and EPA failure to incorporate environmental review from the initial proposal of the WWTP projects in 2012 DEM's CIP 2012-13 Budget. There has been injury in fact that is timely being pursued and which will be remedied by a lawsuit.

The EPA and County are making an irrevocable commitment of resources to place two full-sized, new-build secondary wastewater treatment plants to service about 300 homes in remote, rural Ka'u. This is a commitment of resources our community holds sacred – as Nohea Kaawa testified, her family says that “sacred is anything that cannot be replaced.” (*County Council* testimony on Res. 650-18).

There are redressable injuries from a final agency decision by EPA to extend compliance dates over which EPA R9 exercises “power, authority and control” over the planning and implementation over the Ka'u WWTP Projects. Federal

**Demoruelle Page 9**

funding has been used from the beginning of the LCC closures under NEPA 42 USC 4321 *et seq.*

There has been an ongoing procedural violation under HRS 343 which require preparation of notice with publication to announce intent; commence public outreach with notice of holding public meetings and soliciting public comments; consultation of Federal, State, COH and Others - businesses, NGOs, organizations, and individuals; and finally issue a DEA.

In fact, the Project Schedule required meeting in Naalehu by 10/25//2018 and none have occurred in compliance with the EPA June extension approved by the EPA.

HRS 343-3 requires EADs be made available for public inspection, providing transparency and avoiding potential for deception. By denying any access to the Naalehu DEAs, there has been no opportunity for public review and comments.

The Pahala WWTP Project was separated from the Naalehu WWTP – and EPA SAAP grant funds were transferred on May 30, 2018, to Pahala from Naalehu to evade NEPA review. Since Kate Rao is overseeing the Federal EID/EA, why hasn't she done one for the Naalehu project.

**Demoruelle Page 10**

As demonstrated by the November Resolution 412-17, County is taking irrevocable siting action before the environmental review of the proposed WWTP action itself. At the time, the Pahala landlord manager had not been consulted on this action.

Without consideration of alternative actions, how can enlightened decision-makers make intelligent, optimally beneficial decision be made?

Sec.102(2)(C) [42 USC 4332(2)(c)] state that a detailed statement of impact on the environment, environmental costs and alternate measures. A detailed statement is supposed to “accompany the proposal through the existing agency [EPA an COHDEM] review processes.” The procedural statutes require the environmental review start early to accompany the project step by step. Thus, for all of us in Ka’u, the personal injury is *de facto* caused by violation of NEPA procedural statutes.

HAR 11-200-14 requires that an EIS be prepared at earliest opportunity in planning and decision-making process. In HAR 11-200.1-1(b), it states that the EIS shall not be merely a self-serving recitation of benefits and a rationalization of the proposed action, as Mr. Kucharski stated 4/25/2018 EMC Minutes,- Ka’u was “informed” a WWTP was going to happen – siting was being determined.

**Demoruelle Page 11**

As the Ka’u LCC Closure Project started as a single action, it was a violation of HAR 11-200-8 to separate the projects into two WWTP Projects and fail to consider them as a “larger total undertaking” that is treated as a single action.

Finally, HAR 11-200-15(a) states that consultation must be done PRIOR to preparation of a DEA to ensure a full and complete consultation process – and not rely SOLELY on the review process to expose environmental concerns.

What is needed is reparations to all Ka’u LCC households – for homeowners abandoned the original agreement leaving homeowners paying for sewage that is STILL present in their backyards [in aging pipes].

Since EPA did not step in for environmental review when it was triggered by the proposals, it is reasonable to think they won’t in the future. At the October 10, 2018, Pahala DEA meeting, it was apparent that the County was without concern for everyone affected. Therefore, the Demoruelles argue that, per the agreement of the November 5, 2004 County letter, LCC households need to stop receiving sewer bills, and repaid past payments, until the new sewer system has been installed and accepted by Hawaii State DOH. To bring better consultation to the process, per Ka’u CDP Policy 90, USDA Rural Development should facilitate remedial community meetings to consider alternatives, including the original conversion to septic, to close the LCCs.

**COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT –**

**Demoruelle Page 12**

**ATTACHMENTS:**

- A. Pahala DEA DEQC Notice failed to provide HRS 343 5(a) trigger (9)(A) Wastewater Treatment Unit, which is totally misleading.
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**Demoruelle Page 13**

- F. The costs of the Kealakehe WWTP <sup>layover</sup> ~~lin~~er replacement ran so much over budget, the \$14 million budget for the Pahala Project is grossly underestimated in the PER. And since the WWTP is the most important project in Kona, why aren’t the Ka’u two WWTPs treated as important and provided with an EIS?
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- H. According to Director Kucharski, the Naalehu School is still the preferred site for the Naalehu WWTP and it is only 11 miles away from the Pahala WWTP proposed site.
- I. The Pahala DEA gives no consideration to any decentralized, more cost-effective project for rural areas such as in Ka’u. Also, no consideration has been given to seeking any other types of funding for this clearly impoverished area.

## Demoruelle Page 14

J. During the May 10, 2018, "team update call," the EPA and COH conspired with the Contractors to evade the State of Hawaii Land Use Commission (LUC) review of the Pahala Project which would be a "much longer process" by stating the site acreage under 15 acres. See Sec 205-6(d) (attached) requiring special LUC permits for land area greater than 15 acres. But the Pahala Project as sited in the DEA is on "lands designated as important agricultural lands," so regardless of size, the Project will be subject to the LUC permitting process.

COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT

woc oct27-2018

## SUBMITTED TO:

Earl Matsukawa, AICP

Project Manager

Wilson Okamoto Corporation

1907 South Beretania Street, Suite 400

Honolulu, HI 96826

Fax: 808/946-2253



## SUBMITTED BY:

Sandra and Joseph Demoruelle

Box 588

Naalehu HI 96772

## Comment:

See attached comments and supporting evidence that follow.

Signed in Naalehu, Hawaii on October 22, 2018

Sandra L. Demoruelle

Joseph L. Demoruelle

**COMMENTS ON THE DRAFT EA, PAHALA LCC REPLACEMENT PROJECT –**

**Demoruelle Page 1**

Mr. and Mrs. Demoruelle, forty year residents of Ka'u, point out that it is the public's duty to raise issues.

They must distinguish themselves by their open-mindedness, their high sense of justice and duty, by candor, modesty and their entire devotion to the welfare and interests of their community and humanity. The truth they state will become clear and evident to all. They are speaking the truth and never entertained hatred toward anyone. Their sole purpose in speaking out about the Ka'u LCC Closure Project is to state the truth and explain the situation.

Our Ka'u community, as a body, strives to the spirit of exclusiveness and the County and EPA atmosphere is one of secrecy to carry out their domineering activities.

Lacking collaboration with members of the Ka'u community, the common-sense and good judgment of people who reside here, the County and EPA has led to poor siting decisions in both Pahala and Naalehu.

Lacking any reciprocity, there was no thorough exploration of issues to seek unity of vision. There has been no spirit of inquiry into what is best for all concerned.

**Demoruelle Page 2**

Instead, the people of Ka'u who speak out are belittled, humiliated, insulted, ignored, and generally not accorded courtesy and respect.

We urge the use of consultation to overcome this feeling of powerlessness. But consultation is not an isolated event. It is a process that allows participants to grow more capable of fostering collaboration.

There are two types of consultation:

1) between equals leading to a joint decision like Ka'u CDP Policy 90 envisions (supported by both parties), and

2) decision being made by those with authority – so consultation takes form of discussion to draw out thoughts and information towards the enrichment of common understanding. In many cases, such interaction leads to consensus on a set of goals, both individual and collective.

“[T]he views of several individuals are assuredly preferable to one man, even as the power of a number of men is of course greater than the power of one man.” (Cited in a letter written by Shoghi Effendi to the National Spiritual Assembly of Persia, February 15, 1922).

**Demoruelle Page 3**

Therefore, the Demoruelles recommend the use of consultation with and within the Ka'u community to investigate reality and seek truth, convinced that this has the power to unite us.

**PROBLEM WITH THE USE OF THE THREAT OF SITING BY THE SCHOOL**

We are sick of seeing blameless children used as political pawns to allow Director Kucharski to place the Naalehu WWTP on his preferred site and use the school site as an "alternative." Every discerning person can see the need for justice for Ka'u!

We don't know if it affects everyone in the same way, but the Environmental Management Commissioners appeared visibly horrified to see a kindergarten classroom beside the open sewage lagoons.

"All I could see was a horrible place for my great-grandson to drown..." is what Sandra Demoruelle thought when she saw the Brown and Caldwell presentation on April 11, 2018 at the Naalehu Community Clubhouse. "From the moment I saw the project last April, I have been running scared. It struck fear in my heart – and because they denied us any access to the EADs, it remains unclear how much this terrorism has cost us in wasted tax dollars and damage to our community. We ask – who will make reparations to the Ka'u LCC homeowners? And who will pay us for the personal injuries caused by the County's terroristic manipulations."

**Demoruelle Page 4**

Surely we are all in **agreement with COHDEM Director Kucharski that his Department "have failed miserably in doing their duty to the environment and local residents."** Let us be crystal clear, Mr. Kucharski is speaking of the taxpayer-funded COHDEM. (EMC, 4/25/18, Page 13).

The full quote is: "The cesspools were to have been closed by 2005, and they have failed miserably in doing their duty to the environment and local residents." So we cannot understand why County Council has not done a legislative audit?

This is another depressing example of the ease with which taxpayer dollars are wasted and unknown collateral damage done to the community – like the harm done to the LCC households that now deserve reparations. It has been unfair and inhumane for Mr. Kucharski to abuse us this way.

Please contrast this failed process that led to terrorizing our community with a wastewater treatment plant adjoining our elementary school to Lono Kona, which, as Ka'u CDP requires, used USDA RD to promote broad participation in the decision-making process.

**Demoruelle Page 5**

Differences between the way the County of Hawaii Department of Environmental Management (COHDEM) has handled the Ka'u and Lono Kona LCC closure project:

- 1) Participation – Lono Kona had broad participation by many stakeholders in multiple public meetings held before project planning was completed. But both held household votes and the vote expressed consensus.
- 2) Public records – Lono Kona has readily available public records documenting the participatory process and public meetings – records that do not have to be requested and paid for!
- 3) County CDP Statutes were followed – during Lono Kona, the CDP statutes were followed and a large RD grant funded Lono Kona, while the 2017 Ka'u CDP makes no mention of either WWTP, nor was Policy 90 for public participation followed.
- 4) Self-funded Lono Kona v. CWSRF Loan funded Ka'u WWTPs – Kona households voted to pay the balance of the LCC closure costs – with RD grant funding for most of the projected costs. Except for a small amount of remaining EPA SAAP grant funding, the COHDEM plans to totally pay for the two WWTP projects with CWSRF funding, without informing and seeking

**Demoruelle Page 6**

participation from Hawaii taxpayers for these impending significant financial obligations.

5) Biggest difference is use of terrorism – COHDEM met with Lono Kona stakeholders early and made public records available for review. In Ka'u, the COHDEM and EPA failed to provide HRS 343 or NEPA notice in *TEN* for the two “talkstory” sessions intended “to inform the community the two WWTPs were going to happen” (Kucharski, EMC April 25, 2018, Page 13). No EA/EIS has been published for the Naalehu CWSRF funded project.

Instead of the Pahala and Naalehu meeting records being available online, as are Lono Kona's meeting records indicating who was present and the meeting agenda and outcomes, the COHDEM refuses to provide any meeting information or environmental review records (except the Pahala PER/DEA) to the local libraries or online. By denying access under UIPA, the Naalehu DEA has been withheld since at least April 2017 per the AOC Attachment B Page 3 statement.

Under 92F-12, Mrs. Demoruelle's request that COHDEM shall make available for public inspection and duplication during your regular business hours (3) government purchasing information (10) consultants (14) contracts has been denied. (*See also, 92F-15 denial of record*).



**Demoruelle Page 7****FAILURE TO DO AN EIS ON TWO FULL-SIZE WWTPS (11 MI. APART)**

ALL HAWAII WWTPs HAVE A HEPA EIS:

1996 Waialua –Haleiwa WWTP

1998 Waimanalo WWTP

2009 Koloa-Poipu WWTP

2010 Waiale Water Treatment Facility

2011 Kaneohe-Kailua Treatment Facility

2017 Honouliuli WWTP Secondary Treatment

3/23/2017 Kealakehe WWTP R1

The EISPN Act 172-12 Direct to EIS would have been the appropriate choice instead of this Pahala DEA, since all new-build WWTPs have required an EIS. In fact, HRS 11-400-12 and 13 (significant criteria) require that agencies show prior consultation; community meeting record; notice of public hearing; record and affidavit of publication, which COHDEM/EPA have failed to do.

Nowadays, it is hard to find an environmental suit where no NEPA EIS document was ever produced. Now, all the suits do is challenge the adequacy of

**Demoruelle Page 8**

the EIS document or the adequacy of public review. But this suit harkens back to the 1970s and early 1980s, when the idea that NEPA was procedural and the EIS was a requisite early guide to decision-making at all levels.

**HARM TO THE KA'U COMMUNITY**

The citizens of Ka'u, including Sandra and Joseph Demoruelle, have been significantly harmed by COHDEM and EPA failure to incorporate environmental review from the initial proposal of the WWTP projects in 2012 DEM's CIP 2012-13 Budget. There has been injury in fact that is timely being pursued and which will be remedied by a lawsuit.

The EPA and County are making an irrevocable commitment of resources to place two full-sized, new-build secondary wastewater treatment plants to service about 300 homes in remote, rural Ka'u. This is a commitment of resources our community holds sacred – as Nohea Kaawa testified, her family says that “sacred is anything that cannot be replaced.” (*County Council* testimony on Res. 650-18).

There are redressable injuries from a final agency decision by EPA to extend compliance dates over which EPA R9 exercises “power, authority and control” over the planning and implementation over the Ka'u WWTP Projects. Federal

**Demoruelle Page 9**

funding has been used from the beginning of the LCC closures under NEPA 42 USC 4321 *et seq.*

There has been an ongoing procedural violation under HRS 343 which require preparation of notice with publication to announce intent; commence public outreach with notice of holding public meetings and soliciting public comments; consultation of Federal, State, COH and Others - businesses, NGOs, organizations, and individuals; and finally issue a DEA.

In fact, the Project Schedule required meeting in Naalehu by 10/25//2018 and none have occurred in compliance with the EPA June extension approved by the EPA.

HRS 343-3 requires EADs be made available for public inspection, providing transparency and avoiding potential for deception. By denying any access to the Naalehu DEAs, there has been no opportunity for public review and comments.

The Pahala WWTP Project was separated from the Naalehu WWTP – and EPA SAAP grant funds were transferred on May 30, 2018, to Pahala from Naalehu to evade NEPA review. Since Kate Rao is overseeing the Federal EID/EA, why hasn't she done one for the Naalehu project.

**Demoruelle Page 10**

As demonstrated by the November Resolution 412-17, County is taking irrevocable siting action before the environmental review of the proposed WWTP action itself. At the time, the Pahala landlord manager had not been consulted on this action.

Without consideration of alternative actions, how can enlightened decision-makers make intelligent, optimally beneficial decision be made?

Sec.102(2)(C) [42 USC 4332(2)(c)] state that a detailed statement of impact on the environment, environmental costs and alternate measures. A detailed statement is supposed to “accompany the proposal through the existing agency [EPA an COHDEM] review processes.” The procedural statutes require the environmental review start early to accompany the project step by step. Thus, for all of us in Ka'u, the personal injury is *de facto* caused by violation of NEPA procedural statutes.

HAR 11-200-14 requires that an EIS be prepared at earliest opportunity in planning and decision-making process. In HAR 11-200.1-1(b), it states that the EIS shall not be merely a self-serving recitation of benefits and a rationalization of the proposed action, as Mr. Kucharski stated 4/25/2018 EMC Minutes,- Ka'u was “informed” a WWTP was going to happen – siting was being determined.

**Demoruelle Page 11**

As the Ka'u LCC Closure Project started as a single action, it was a violation of HAR 11-200-8 to separate the projects into two WWTP Projects and fail to consider them as a "larger total undertaking" that is treated as a single action.

Finally, HAR 11-200-15(a) states that consultation must be done PRIOR to preparation of a DEA to ensure a full and complete consultation process – and not rely SOLELY on the review process to expose environmental concerns.

What is needed is reparations to all Ka'u LCC households – for homeowners abandoned the original agreement leaving homeowners paying for sewage that is STILL present in their backyards [in aging pipes].

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- A. Pahala DEA OEQC Notice failed to provide HRS 343 5(a) trigger (9)(A) Wastewater Treatment Unit, which is totally misleading.
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**Demoruelle Page 13**

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**Demoruelle Page 14**

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September 23, 2018

Pahala DEAF meeting

Submitted by Sandra Demore Oct 10 2018

The Environmental Notice

HAWAII

Pahala Large Capacity Cesspool Replacement--Draft EA (AFONSI)

HRS 5343-5(a) Trigger	(1) Propose the use of state or county lands or the use of state or county funds <b>(9A) Wastewater Treatment Unit</b>
District(s)	Ka'o'o <b>Failure to state</b>
TMK(s)	(3) <b>No Section</b>
Permit(s) var	<b>(9A) Trigger</b> <b>True nature of project</b>
Proposing/ Determining Agency	Planning Department, County of Hawaii Bethany Morrison, (808) 961-8138, <a href="mailto:Bethany.Morrison@hawaii.gov">Bethany.Morrison@hawaii.gov</a>
Consultant	Geometric Associates Ron Terry, (808) 969-7090, <a href="mailto:rterry@hawaii.gov">rterry@hawaii.gov</a> P.O. Box 396, Hilo, HI 96721

Status: Statutory 30-day public review and comment period starts. Comments are due by October 23, 2018. Please send comments to the proposing/determining agency and copy the consultant.

The County of Hawaii's Department of Environmental Management proposes to construct wastewater system improvements replacing the large capacity cesspools (LCCs) currently serving Pahala, in order to comply with U.S. Environmental Protection Agency (EPA) regulations. The project improvements would include a new wastewater collection system located primarily within public streets in the Pahala community, and a treatment and disposal system on land to be acquired by the County (TMK: 9-6-002: 018). The project would be partially funded by an EPA grant and by the Clean Water State Revolving Fund loan program.

The collection system would consist of approximately 12,120 linear feet of 8 to 12-inch diameter underground gravity flow piping in Maile, 'Ilima, Huapala, Hinano, Hala, Puahala and Pihake Streets. The treatment and disposal facility would occupy about 14.9 acres and consist of a headworks and an odor control unit, an operations building, four lined aerated lagoons, a subsurface flow constructed wetland to remove nitrogen with an adjacent disinfection system to remove pathogens, and four slowrate land treatment basins for further treatment and disposal of the treated effluent. A perimeter security fence would enclose the entire facility. The existing LCCs and associated wastewater collection system would be abandoned.

Kohala Shoreline, LLC--(Withdrawal of Draft EA)

HRS 5343-5(a) Trigger	(1) Propose the use of state or county lands or the use of state or county funds
District(s)	North Kohala
TMK(s)	(3) 5-9-001-008
Permit(s)	various (see document)
Proposing/ Determining Agency	Planning Department, County of Hawaii Bethany Morrison, (808) 961-8138, <a href="mailto:Bethany.Morrison@hawaii.gov">Bethany.Morrison@hawaii.gov</a>
Applicant	Kohala Shoreline, LLC, c/o Carlsmith Ball LLP Jennifer Lim, (808) 523.2557, <a href="mailto:jlim@carlsmith.com">jlim@carlsmith.com</a> 1001 Bishop St., Suite 2100, Honolulu, HI 96813
Consultant	Geometric Associates Ron Terry, (808) 969-7090, <a href="mailto:rterry@hawaii.gov">rterry@hawaii.gov</a> P.O. Box 396, Hilo, HI 96721

Status: The Draft EA and Anticipated Finding of No Significant Impact, originally published on July 8, 2015, are being withdrawn. The Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed Kohala Shoreline, LLC Project, notice of which was published on July 8, 2015, in The Environmental Notice, are being withdrawn. The project proposed in that Draft Environmental Assessment was a subdivision makai of Akoni Pule Highway, on a 37.88-acre parcel located 3 miles north of Kawaihae. Kohala Shoreline LLC's original development concept, as described in the DEA-AFONSI, was a 9-lot residential subdivision, with several building sites makai of the Ala Loa. The project also proposed a downzoning from Single-Family Residential (RS-15) to Residential and Agricultural (RA-3a) to permit less dense development. Kohala Shoreline LLC is no longer pursuing that project and for that reason the DEA-AFONSI is being withdrawn. Kohala Shoreline LLC intends to pursue a less dense project that has been substantially reduced in scale and moved away from the shoreline. A Draft EA for the reduced and reconfigured project is in preparation.

The DEAF has no cost analysis for borrowing 95% +

6. "One Thing"

88 the cost of 10 mill, COST PRICE SUPER

At the end of the sessions, each participant was asked to share the "one thing" that they wanted to share with DEM. The following sessions lists comments.

6.1 December 12, 6 PM

I hope the department come back and respond to issues brought up tonight.

The devil is in the details. Don't make the same mistakes. Like the laterals on our street. When you connect sewage pipes, do not use sharp angles. Otherwise like Maui, it blocks up. The mayor of Maui asked me to come help fix this.

Keep taxes down.

I need to know the price because I have two properties with cesspools.

Would love the County to look below the highway.

I want DEM to look at all these meetings and take input to heart. They have listened so far. Coming out early. Have faith in the director and appreciate that he listens. The cost impact is a big deal and I want them to reinvestigate funding to help. If the County can foot the cost to connect to main line, that would be a huge help.

I would like to see County help subsidize residents.

Biggest thing is cost. Lot of people have trouble meeting expenses. Not a lot of jobs.

Do archaeological study sooner than later. Gym project got held up.

I hope the conversation keeps going.

The cost is not just about the present. I am worried about what my kids will have to pay later on. That blue line coming through our yard - we didn't ask for that. We should be exempt if the County wants to raise property taxes to pay for this. The purple properties are projected to be hooked up later. Some people think not affect them.

Cost. And the director should be out here listening. They make you two come here and there is only the tape he's listening to. He gets paid a lot of money. He should look at us in the face.

6.2 December 13, 10 AM

The site not big enough for future growth.

Use land on either side of Maile Road.

Go to the other side of Belt Road; or old mill site.

IMPORTANT IN RAU!

Submitted by Sandra Demore 10/10/18

+ Below Hwy site!

FUTURE COSTS!

B

I just wanted to come here and find out. I wasn't on the gang system. Now I understand sure enough, something's up. I'm on the system. How long before whole community part of system? Only handling half the community. Doesn't solve the problem.

Think long term.

Where is construction road on Maile Street?

6.3 December 13, 6 PM

Make it cheaper. Cut the cost.

The cost concerns me.

Be more transparent. Tell the truth. Be honest. Open lines of communication as soon as possible. We understand the County is under time constraints, but you cannot expect others to be.

I agree. We need to know. We are a small community. Nobody talks to us.

Cost. Keep it low.

Everything is going up and up and up. We don't know how much it will cost. I'm afraid of that.

When will next round of meetings take place?

What is problem with siting below the highway?

The County built the gym and in the gym, there were bones. What did they do with bones if they find on this site?

General comment at the end: Appreciate meetings

6.4 December 14, 10 AM

Why are we now paying monthly if the thing not so good?

Why do we have to pay if they're not using the lines in our yard?

Why don't they move to the other side (east) of Maile Road so it's not below the town?

If they allowed us to use cesspool to begin with and change to septic tanks and want us to absorb the cost because they want to change, why don't they help us out?

Like my daughter, she has a big bill she pays monthly. What's going to happen in 2021? We live in the back of the school. Below the elementary. Not in the blue. We have our own cesspool. We'll have to get our own line to connect to the street?

*Doesn't solve the problem.*

*less than truth but by eroding cumulative impacts of Kahala WWTPS 11 miles apart.*

*Below highway*

I strongly encourage them to look at the property below Maile Road. It appears on paper that it's not that much different. It's interesting with waterways and lava that you wouldn't even know when they are cracks because of percolation. Running under Belt Road, is there any chance if they did expand with those yellow things, could that be expanded to the other side of the road? What's ideal for the county is not always ideal for the town.

6.5 December 14, 6 PM

How much will this cost me?

I want the County to be responsible for this project. Let us know. Inform us and be honest and respectful to people.

This is about trust. Plus take into consideration we have a lot of elderly at these meetings. We need to get young people involved. Take it to school. Let kids give feedback.

I can help Cisco get people to meeting.

Project life expectancy? Pipes given slope and pressure. Mains: More detail.

I like this system. You can deal with waste environmentally. I'm excited.

I'm all about cost to individual homeowners.

As a homeowner, what kind of responsibilities is the County expecting of me?

How much will it cost?

Keep coming back to talking to people.

Thank you to both of you. A lot of time people come with arrogance and they will fix us. So thank you.

Draft EA, Pāhala LCC Replacement Project  
Pāhala, Ka'ū District, Hawai'i

**LIST OF PREPARERS**

Eastern Research Group, Inc. (ERG):

- Braden Rosenberg
- Patrick Goodwin
- J.J. Johnson
- April Eilers
- Kettie Rupnik

Wilson Okamoto Corporation:

- Earl Matsukawa
- John Sakaguchi


Brown & Caldwell:

- Craig Lekven

"Why aren't the public participation-out reach" subC contractors listed as preparers?  
 EPTan - Bernadette Senelly  
 BTC Michelle Sorenson

Signed:  
 Sandra Demoruelle  
 Submitted on Oct 10, 2018  
 at Pāhala DEFA meeting

XP - 96942401 - 7 Page 1

 <b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> Assistance Amendment	<b>GRANT NUMBER (FAIN):</b> 96942401 <b>MODIFICATION NUMBER:</b> 7 <b>PROGRAM CODE:</b> XP	<b>DATE OF AWARD:</b> 05/30/2018 <b>MAILING DATE:</b> 05/30/2018
	<b>TYPE OF ACTION:</b> No Cost Amendment <b>PAYMENT METHOD:</b> Reimbursement	<b>ACH#</b>
<b>RECIPIENT TYPE:</b> State	<b>Send Payment Request to:</b> Las Vegas Finance Center, Fax (702) 798-2423	
<b>RECIPIENT:</b> County of Hawaii 25 Aupuni Street Hilo, HI 96720 <b>EIN:</b> 99-6000567	<b>PAYEE:</b> County of Hawaii 25 Aupuni Street Hilo, HI 96720	
<b>PROJECT MANAGER:</b> Dora Beck 25 Aupuni Street Hilo, HI 96720 <b>E-Mail:</b> dbeck@co.hawaii.hi.us <b>Phone:</b> 808-961-8513	<b>EPA PROJECT OFFICER:</b> Kate Rao 75 Hawthorne Street, WTR-3-2 San Francisco, CA 94105 <b>E-Mail:</b> rao.kate@epa.gov <b>Phone:</b> 415-972-3533	<b>EPA GRANT SPECIALIST:</b> Martha Villareal Grants Management Office, EMD 6-1 <b>E-Mail:</b> villareal.martha@epa.gov <b>Phone:</b> 415-972-3666
<b>PROJECT TITLE AND EXPLANATION OF CHANGES</b> Special Appropriation - Kau District Cesspool Replacement Project  The purpose of the award is for the design and construction of wastewater system improvements in Pāhala (Kau District) in the County of Hawaii. The award description is being updated to reflect the shift of project location from Na'alehu to Pāhala. Both of these sites are located in the Kau District. Federal funds and the recipient match will be allocated only to the 'Construction - Wastewater Treatment and Disposal System' task in the approved Pāhala Community Large Capacity Cesspools Replacement Project work plan.  This action decreases the recipient contribution to \$1,507,214 which is reflected in the revised budget and project workplan.		
<b>BUDGET PERIOD:</b> 06/01/2005 - 10/30/2020	<b>PROJECT PERIOD:</b> 06/01/2005 - 10/30/2020	<b>TOTAL BUDGET PERIOD COST:</b> 13,349,364.00
Based on your Application dated 03/24/2006 including Protection Agency (EPA) hereby awards \$0. EPA agrees federal funding of \$1,842,150. Recipient's signature is either: 1) drawing down funds within 21 days after the E and conditions within 21 days after the EPA award or at the authorized representative of the recipient must furnish amendment mailing date. In case of disagreement, and award/ amendment, and any costs incurred by the recipient all terms and conditions of this agreement and any other regulatory and statutory provisions.		
<b>ISSUING OFFICE (GRANTS MANAGEMENT):</b> ORGANIZATION / ADDRESS U.S. EPA, Region 9 Grants Management Section, EMD 6-1 75 Hawthorne Street San Francisco, CA 94105		
<b>THE UNITED STATES OF AMERICA</b> Digital signature applied by EPA Award Official for C.		

Why were the EPA funds "shifted" to Pāhala and the Naalehu Project left without NEPA to cross cutting laws after filed suit? 5/11/2018

Submitted 10/10/2018 to Pāhala DEFA meeting by Sandra Demoruelle

EXHIBIT

D

SANDRA L. DEMORUELLE  
 Post Office Box 588  
 Naalehu, Hawaii 96772  
 Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

September 24, 2018

The Honorable Ryan Zinke  
 Secretary, Department of Interior  
 1849 C Street NW  
 Washington DC 20240  
 Fax: 703/358-1930

RE: NOTICE OF IMPENDING CITIZEN SUIT UNDER ESA 16 USC 1540(g)(1)(A) and (2)(A)(i)

Dear Secretary,

Attached is my Notice of impending citizen suit. Thank you for your attention to my grave concerns which are causing me concrete injuries.

Sincerely,



SANDRA DEMORUELLE

37  
 Fax  
 Total Pages 6

**NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT,  
 16 U.S.C. 1540 (g)(1)(A) and (2)(A)(i)**

PERSON GIVING NOTICE:

Sandra Demoruelle,

Physical address: 94-1513 Kaalualu Road, Naalehu HI 96772

Mailing address: PO Box 588, Naalehu HI 96772-0588

Telephone: 1-808-929-9244

Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

NOTICE:

**Location: Naalehu and Pahala, District of Kau, County of Hawaii, State of Hawaii, U.S.A.**

**Date of commencement** of ongoing ESA Sec. 7 consultation violation:

Date: **September 20, 2005** per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-0 for project period 06/01/2005 – 12/31/2007.

COH Project Manager: Dora Beck

**EPA Project Officer: Laura Bose (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 5, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

*The recipient [County of Hawaii] agrees not to bill or request reimbursement from EPA for any costs associated with the design or construction of the project [Kau Cesspool Replacement Project for Naalehu and Pahala in Kau] funded by this grant ... until EPA has complied with the National Environmental Policy Act and other environmental cross-cutters (see 40 CFR 6.300 et seq) applicable to this project. (Id. Section P1.)*



Current Date: 05/30/2018 per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-7 for project period 06/01/2005 – 10/30/2020.

COH Project Manager: Dora Beck

**EPA Project Officer: Kate Rao (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 7, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

**Dates of violation: Ongoing during period of Grant Condition P1. from date of award 09/20/2005 through current Grant Period commencing 05/30/2018**

#### **EPA DISCRETIONARY ACTION IN VIOLATION OF ESA:**

1) EPA FAILED TO TAKE EARLY HARD LOOK AT THE KAU PROJECTS AS REQUIRED BY NEPA AND CONSEQUENTLY FAILED TO COMPLY WITH ESA

In the original EPA-COH Grant Agreement Section P1 dated Sept. 20, 2005 (XP-96942401-0), EPA was first required to comply with NEPA “and other environmental cross-cutters” – including the ESA. Seven Grant Agreement revisions have resulted in splitting the original Naalehu and Pahala Projects, both requiring the EPA NEPA/cross-cutters ESA environmental review procedures, into two separate EPA WWTP Work Plans, only one of which will require ESA Section 7 consultation process. In the response to EPA from FWS, the need for a Naalehu ESA process, like what was occurring for Pahala, was expressed.

NEPA requires Federal agencies, including the EPA, to prepare a “detailed statement” prior to approving any “major federal action significantly affecting the quality of the human environment. 42 CFR 4332(2)(c). “The requirement to prepare an environmental impact statement creates a democratic decisionmaking process that assures that agency decisionmakers and the public review and carefully consider detailed information about environmental impacts before any decision is made. Agencies must “[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment.” 40 CFR 1500.2(d) as cited in *Dine CARE v. BIA, Complaint*, Case3:16 cv-08077-SPL Doc. 1 Page 19.

2) EPA HAS SEPARATED THE KAU LCC CLOSURE GRANT XP-96942401[As Amended 0 through 7] INTO TWO SEPARATE PROJECTS AND REFUSED TO FOLLOW NEPA/ESA PROCEDURES THAT EPA FOLLOWED FOR THE PAHALA PROJECT DEEA AS FOR THE NAALEHU WWTP WORK PLAN

No NEPA environmental review procedures have been followed since the original project – the LCC conversion to septic for all of the illegal Kau LCCs – provided Notice of the FEA/FONSI in August 23, 2007 issue of *TEN*. The original 2007 FEA/FONSI for both the Pahala and Naalehu LCC closures has never had a Supplemental Notice published to account for the obvious changes to the original Kau Cesspool Project.

Further since this Naalehu/Pahala 2007 FEA/FONSI never been Supplemented or Withdrawn as Noticed in *TEN*, it is inappropriate to publish the *TEN* Pahala DEEA/AFNSI Notice on September 23, 2018 as part of the NEPA/HEPA requisite procedural review.

“To make an informed decision about how or whether to proceed with the proposed projects and to comply with NEPA, an agency must identify their potential combined environmental impacts and make that information available to the public.” *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

Therefore, I contend herein that the COHDEM proposed Naalehu WWS EA and the proposed Pahala WWS EIS/EID are legally inadequate because, being two separate studies and documents prepared at different points in time, fail to consider the aggregated and cumulative effects of the connected actions of the proposed wastewater sewage treatment projects on the human environment in the isolated and sparsely populated District of Ka’u.

CEQ regulations implementing NEPA “require that an agency consider ‘connected actions’ and ‘cumulative actions’ within a single EA or EIS.” *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1118 (9<sup>th</sup> Cir. 2000) (emphasis added) (citing 40 CFR 1508.25). Further, under 1508.25, two or more agency actions must be discussed in the same impact statement when they are “connected” or “cumulative” action. 40 CFR 1508.25(a)(1),(2) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

A cumulative impact is defined in NEPA's implementing regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions .... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR 1508.7.

For "connected" and "cumulative" actions, the agency is told it "should" analyze them in a single impact statement, which the 9<sup>th</sup> Circuit interpreted as a mandatory requirement. See *Eagle Island Institute v. USFS*, 351 F.3d 1291 (9<sup>th</sup> Cir. 2003) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

3) EPA HAS PUBLISHED NOTICE OF AVAILABILITY OF THE PAHALA DEA PUBLIC COMMENT PERIOD WITHOUT CONSIDERING THE CUMULATIVE EFFECTS OF THE AOC TWIN WWTP WORK PLANS WHICH SPECIFY BUILDING TWO SECONDARY SEWAGE TREATMENT PLANTS JUST 11 MILES APART IN REMOTE, RURAL KAU BEFORE APRIL 17, 2022

Despite Kate Rao approving EPA SAAP funding for the original Ka'u LCC to LCSS conversion projects, she has permitted the Naalehu Work Plan to be implemented in violation of NEPA, and failed to enact ESA Section 7 consultation with FWS, as she did with Pahala, designating ERG to do this ESA in the June 7, 2018 letter. By allowing avoidance of consideration of cumulative impacts and avoiding NEPA and ESA statutes, Defendant Rao has allowed the separation of the two Ka'u new-build WWTPs with no aggregation of impacts on the numerous affected endangered plants and wildlife and apparently intentionally avoiding any NEPA cumulative impact analysis. ("[T]he district court properly determined that the Forest Service violated the ESA when it decided not to reinstate consultation after the FWS revised its critical habitat designation..." *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015)).

In *Cottonwood*, the Forest Service contended that "[t]he EA or EIS on each action ... will document the cumulative impacts of that action and all previous actions." The Court believed "that consideration of cumulative impacts after the road has already been approved is insufficient to fulfill the mandate of NEPA. A central purpose of the EIS is to force the consideration of environmental impacts in the decisionmaking process. See, e.g., *Columbia Basin Land Protection Ass'n v. Schlesinger*, 643 F.2d 585 (9<sup>th</sup> Cir. 1981); *City of Davis v. Coleman*, 521 F.2d 661 (9<sup>th</sup> Cir. 1975); *Lathan v. Brinegar*, 506 F.2d 677,693 (9<sup>th</sup> Cir. 1974) (*en banc*);

*Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109, 1113-1114 (D.C.Cir. 1971). That purpose requires that the NEPA process be integrated with agency planning 'at the earliest possible time,' 40 C.F.R. 1501.2, and the purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step is already taken." *Thomas v. Peterson*, 753 F.2d 754, 760 (9<sup>th</sup> Cir. 1985).

Because the EPA has taken specific steps to change the EPA-COH Grant Assistance Amendments for XP-96942401, as demonstrated by the May 30, 2018 amendment #7, which result in effectively evading the same NEPA/ESA procedures on the Naalehu WWTP Project by simply moving the EPA statutory obligations 11 miles away to the twin Pahala WWTP Project, I hereby give Notice of a pending citizen suit under the ESA.

Herein I object to the EPA failure to implement the ESA Sec. 7 consultation for Naalehu as Kate Rao did for Pahala and request that before there is any decisions on either Project, that the EPA-COH be required to provide the same ESA Section 7 consultation and issuance of a Biological Opinion covering the cumulative actions that will "jeopardize the continued existence" of multiple Hawaiian endangered creatures and plants for both the Pahala and the Naalehu WWTP Projects.

I declare under penalty of perjury that the foregoing is true and correct.

Dated: September 24, 2018 at Naalehu, Hawaii

s/Sandra Demoruelle

SANDRA DEMORUELLE

**Proposed Pahala WWTP Project  
Community Outreach Program  
First Stage  
11.10.2017**

F

**Long-Term Program Objectives**

- **Understand Pahala** in terms of history, feelings about other projects, relationship with DEM, internal relationships, influences, needs, strengths, challenges, etc.
- **Share Information**
  - o Technical (where is the project located, what is the schedule, what technology is planned?)
  - o Policy-related (how much will this cost me? how much will it cost my neighbor? Do I have to pay for my own connection?)
- **Establish constructive rapport**
  - o between project team (DEM + consultants) and residents
  - o among various community interests
  - o between community and public agencies
  - o among public agencies
- **Provide solution-based forums**, small and large, in which participants are encouraged to answer the question HOW CAN WE MAKE THIS WORK?

Is there any impact on the ~~foot~~ when there will be endless lawsuits based on violation of the NEPA?

**First Stage**

**Target outcomes** Assure residents we are there to listen  
Help residents understand what is being proposed  
Establish a **point of departure** to move towards future actions and solutions  
**Meet EPA deadline** of December 15 to hold initial public meeting

**Approach** An **Inclusive** process that:  
 • Focuses on **those most affected**  
 • Respects **existing community influences** (leaders and organizations)  
 • Provides **the rest of Pahala** an opportunity to join in the conversation

**3 Tiers of Community Contacts**

1. Property owners, or DEM bill payer on record (~100)
2. Community organizations and businesses- preliminary list
  - a. O Kāu Kākou (community volunteer group)
  - b. Churches
    - i. Pahala Holy Rosary Church

Submitted 10/10/18  
By Sandra Demouille

NEPA  
Procedural  
statutes  
for the twin  
WWTP  
projects?



(<http://www.westhawallday.com/2018/10/09/h/news/no-charges-for-officer-suspected-of-stealing-drug-evidence/>)

2 Gecko butt-dials 'bazillion' times from Kona monk seal hospital (<http://www.westhawallday.com/2018/10/09/h/butt-dials-bazillion-times-from-kona-monk-seal-hospital/>)

3 'Berlin Wall' plan splits Leilani homeowners (<http://www.westhawallday.com/2018/10/09/h/news/berlin-wall-plan-splits->

HILO — Costs have climbed for repair work on the Kealahou Wastewater Treatment Plant, with the County Council voting Wednesday to add another \$5 million to the \$18 million estimated cost of the project.



F

#2 Since the Kealahou WWTP is running so much over budget, why won't the Pahala project?

HILO — Costs have climbed for repair work on the Kealahou Wastewater Treatment Plant, with the County Council voting Wednesday to add another \$5 million to the \$18 million estimated cost of the project.

The extra money, borrowed from the state water pollution control revolving fund, is needed to replace badly eroded liners several of the lagoons, county Environmental Management Director Bobby Jean Leithead Todd said.

The aeration upgrade and sludge removal project, which began 2014, is anticipated to be completed later this year. All five lagoons will be undergoing aeration equipment upgrade and/or sludge removal. The project also involves upgrading the blower the equipment that supplies the air to the aeration equipment that is the backbone to the entire treatment system, by replacing them with energy efficient units that will reduce electrical costs the plant.

The contractor is working on one lagoon at a time to keep the plant operational to continue processing wastewater received from the Kona sewer system.

"This is the most important project in my district, even though it's not very glamorous," said North Kona Councilwoman Karen Eoff. "But it is serious."

#3 Since WWTP is the "most important" proj in Kona, why isn't the Kāunohou WWTP projects treated as "important"? Submitted by Sandra Demouille

Oct 10, 2018  
Pahala DEAT meeting

6.2.12 Drains, Sumps, and Dry Wells

No drains, sumps, or dry wells were observed on the target property during BC's site reconnaissance.

6.2.13 Stained Soil or Pavement

No stained soil or pavement was observed during BC's site reconnaissance.

6.2.14 Stressed Vegetation

No stressed vegetation was observed on the target property during BC's site reconnaissance.

6.2.15 Oil and Gas Wells and Mine Shafts

No evidence of oil wells and gas wells, mine shafts, or related activities was observed on the target property during BC's site reconnaissance.

6.2.16 Structures

Three structures were observed on the target property. Table 6-4 lists the structures on the target property. Figure 1 shows the locations and orientation of these structures.

G

Table 6-4 List of Structures

Structure	Location	Purpose
One-story wooden building	Western portion of the target property	Single family residence
One-story wooden building with garage	Western portion of the target property	Single family residence
Vinyl Siding Trailer	Central portion of the target property	Storage

In addition to the list of structures, there was abandoned farm equipment, abandoned cars, and abandoned fencing on the central and western portions of the target property. There was no evidence of spills or leaks associated with

6.3 Area Reconnaissance

An area reconnaissance was conducted by automobile, and the results of the area reconnaissance are presented.

Since location has been such a problem in Naalehu

is of present or past reconnaissance was findings of the area target property.

6.3.1 North

The target property is bordered to the north by residential properties.

How far is the Pahala/Kau Schools

ch is pasture land and

6.3.2 East

The target property is bordered to the east by residential properties.

Border from Pahala

6.3.3 South

The target property is bordered to the south by residential properties.

↓ WWTP?

6.3.4 West

The target property is bordered to the west by Naalehu School and residential properties.

Brown & Caldwell

GIS - DISTANCE FROM WWTP TO SCHOOLS

SCHOOL	WWTP	DISTANCE BY FEET	MILE	FLOW RATE g/d or mg/d
Kealakehe High School	Kealakehe WWTP	7,670.9 feet	1.45 miles	5.3 mg/d
Kealakehe Intermediate	Kealakehe WWTP	11,437.9 feet	2.17 mi.	
Kealakehe Elem. School	Kealakehe WWTP	11,508.4 feet	2.18 mi.	
Kahakai Elem. School	Kealakehe WWTP	21,180.2 feet	4.01 mi	
Holualoa Elem. School	Kealakehe WWTP	26,126.6 feet	4.95 mi.	
Kealakehe High School	Kaloko WWTP	12,182.0 feet	2.31 mi	
Kealakehe Intermediate	Kaloko WWTP	13,050.1 feet	2.47 mi	
Kealakehe Elem. School	Kaloko WWTP	13,588.2 feet	2.57 mi	
Honokaa Elem School	Honokaa WWTP	7,854.4 feet	1.49 mi	
Honokaa Inter/High School	Honokaa WWTP	8,042.9 feet	1.52 mi	
Paauiho School	Honokaa WWTP	38,880.6 feet	7.36 mi	
Waimea School	Honokaa WWTP	75,651.9 feet	14.33 mi	
Laupahoehoe Charter School	Kapehu WWTP	8,637.1 feet	1.64 mi	0.6 mg/d 16,000 g/d
Paauiho School	Kapehu WWTP	61,717.5 feet	11.69 mi	
Kalaniana'ole School	Kulaimano WWTP	15,164.1 feet	2.87 mi	500,000 g/d
Haaheo School	Kulaimano WWTP	31,364.9 feet	5.94 mi	
Kalaniana'ole School	Papaikou WWTP	2,746.8 feet	0.52 or 1/2 mile	350,000 g/d
Haaheo School	Papaikou WWTP	14,386.3 feet	2.72 mi	

Closest

Kaumana School	Papaikou WWTP	39,060.3 feet
Desilva School	Papaikou WWTP	28,073.6 feet
Hilo High School	Papaikou WWTP	22,969.1 feet
Hilo Inter. School	Papaikou WWTP	23,356.1 feet
Hilo Union School	Papaikou WWTP	23,064.2 feet
Kapiolani Elem. School	Papaikou WWTP	25,419.6 feet
HCC	Papaikou WWTP	29,177.2 feet
UHH	Papaikou WWTP	29,775.6 feet
Waiakea High	Papaikou WWTP	30,726.3 feet
Waiakea Inter	Papaikou WWTP	32,460.5 feet
Waiakea Elem	Papaikou WWTP	32,443.4 feet

*5 miles =  
26,400 feet*

Waiakeawaena Elem	Hilo WWTP	19934.5 feet
Waiakea Elem	Hilo WWTP	19753.8 feet
Waiakea Inter	Hilo WWTP	20,761.0 feet
Waiakea High	Hilo WWTP	20,214.5 feet
UHH	Hilo WWTP	21,459.1 feet
HCC	Hilo WWTP	17,652.6 feet
Kaumana School	Hilo WWTP	41,221.9 feet
Kapiolani School	Hilo WWTP	20,263.7 feet
DeSilva School	Hilo WWTP	31,807.4 feet
Hilo Union	Hilo WWTP	26,528.3 feet
Hilo Inter	Hilo WWTP	26,792.5 feet
Hilo High	Hilo WWTP	24,737.2 feet

Haaheo School	Hilo WWTP	27,143.6 feet
Keaau Elem	Hilo WWTP	35,468.1 feet
Keaau Inter	Hilo WWTP	32,370.3 feet
Keaau High	Hilo WWTP	37,386.6 feet
Mt. view	Hilo WWTP	65,595.3 feet
Keonepoko	Hilo WWTP	79,170.2 feet
Pahoa Elem	Hilo WWTP	85,646.4 feet
Pahoa Inter/High	Hilo WWTP	86,678.3 feet

**DRAFT**

justification EIS, something that will justify their site selection, justify these plants. We're not getting a hard look up front. That's what we're complaining about. And what Jerry has been talking about is that the people in Nā'ālehu have since what—2010?—been paying for the sewer system because it was transferred over to the County from C. Brewer. So now they're faced with going to jail if they don't pay their fees and don't—well in his case, he didn't provide information the court wanted for his bank account so that they could seize his bank account—so that's why he was facing jail. But other people in the town—we're such a tiny little town. We have no money. I do not understand why anyone would want to put a \$20 million facility there. That's what's really got me puzzled. And that's what we want to hear. We have had nobody come down to town to talk to us. According to the law—and that's why I filed the lawsuit, because I happen to have some expertise in environmental law—and we have had none of the, none of triggered an EIS.

**Commissioner Fritz:** When did they plan to put this out to bid? far, Mr. Director?

**Director Kucharski:** No.

**Commissioner Fritz:** No. So it's just really kind of a rumor—

**Ms. Demoruelle:** There are contracts out on it, though, for development of it. You haven't done anything—you're still moving forward. As far as what I can understand from the EPA and from what your letters say, you're moving forward with two wastewater treatment plants and then the one conversion. That's what was in your—I can get it, I have your—

**Director Kucharski:** That's correct.

[Nā'ālehu Elementary School]

**Commissioner Osborne:** So is the school off the table, then, is the school site off the table or it still being considered?

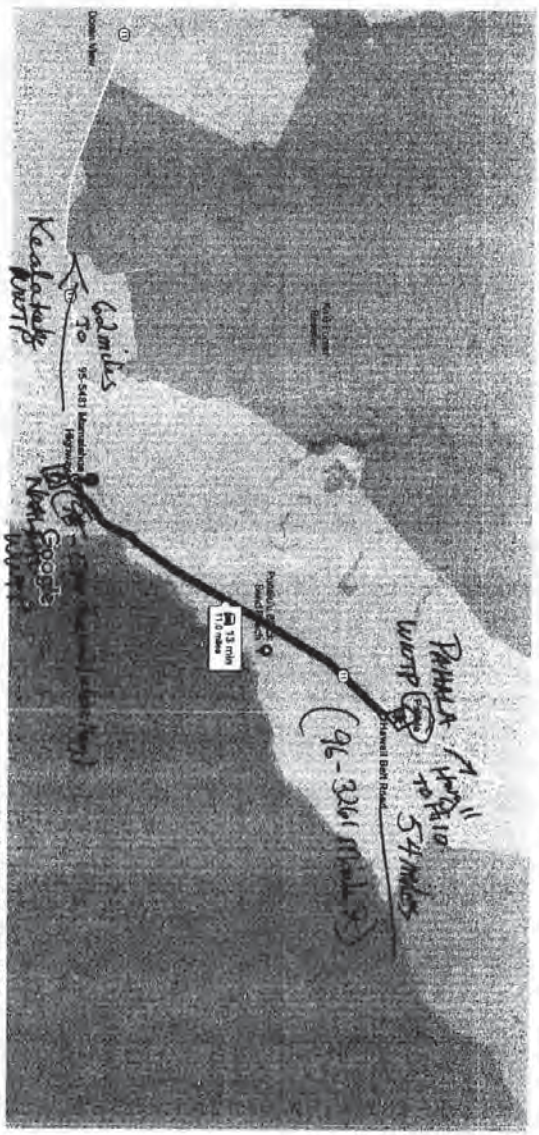
**Director Kucharski:** When you do an EIS or an EA, you need to provide alternative sites for the process, whatever it is you're looking to do. So until the EA, the EIS, has started for this final location, completed, and a draft is put out, nothing is off the table. I'm not going to say this would not happen. Alternatives are being looked at still, and so until we have alternative sites that are sufficient to do an EA, we're not doing it. The first part of the EA is the opening of getting comments and soliciting comments from the community. That has taken place.

**Ms. Demoruelle:** No sir, it has not. You have to file notice.

**Commissioner Osborne:** So I'd just like to make a comment to that, that being with the consideration next to the school in Nā'ālehu. I did speak to Superintendent Chad

Handwritten initials: "H"

Handwritten notes: "NAALEHU SCHOOL STILL ON TABLE"



via HI-11  
Fastest route, the usual traffic

A. Pahala DEFT project site per AOC Attach A  
B. MALEHU WWP site per AOC Att. B

11 miles apart

Map data ©2018 Google 2 mi  
11.0 miles

An official website of the United States government.

We've made some changes to EPA.gov. If the information you are looking for is not here, you may be at EPA Web Archive or the January 19, 2017 Web Snapshot.



## Decentralized System Partners

### EPA's Decentralized Wastewater Management Memorandum of Understanding (MOU) Partnership

EPA and 18 partner organizations are joined by an MOU to work collaboratively at the national level to improve decentralized performance and protect the nation's public health and water resources. EPA initiated this MOU partnership in 2005 through an MOU with eight public and private sector organizations. The MOU has expanded over the 12 years, comprised of 18 partners as of November 2017.



#### 2017 Decentralized Wastewater Management MOU

The 2017 MOU renewed the commitment of EPA and its partner organizations to work together to encourage proper management of decentralized systems and increase collaboration among EPA, state and local governments, and decentralized system practitioners and providers.

#### 2017 MOU Signing Event

At the MOU signing event, 18 public and private sector organizations expressed their intent to work together to improve management of decentralized wastewater.



Jim Bell (NOWRA President) signs the Decentralized MOU Agreement, November 14, 2017 (photo credit: Eric Vance, U.S. EPA)

#### 2017 Decentralized MOU Renewal Press Releases

View press releases by partners to the 2017 Decentralized MOU renewal reaffirming their commitment to work collaboratively with EPA and other partners to improve decentralized performance and protect public health and water resources:

- [International Association of Plumbing and Mechanical Officials \(IAPMO\)](#) (PDF) (1 pg, 104 K, [About PDF](#)) EXIT
- [Water Environment & Reuse Foundation \(WE&RF\)](#) EXIT
- [Association of State Drinking Water Administrators \(ASDWA\)](#) EXIT

#### Papers by the Decentralized Wastewater Management MOU Partnership

View [four position papers](#) prepared by the MOU Partnership for state, local, and tribal government officials, and interested stakeholders. These materials include information on the uses and benefits of decentralized wastewater treatment and examples of where it has played an effective role in a community's wastewater treatment infrastructure.

- Introduction to Decentralized Wastewater Treatment: A Sensible Solution
- Decentralized Wastewater Treatment Can Be Cost Effective and Economical
- Decentralized Wastewater Treatment Can Be Green and Sustainable
- Decentralized Wastewater Treatment Can Protect the Environment, Public Health, and Water Quality

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Close



## Funding for Septic Systems

- [Federal Funding Sources](#)
- [State Funding Sources](#)
- [Funding Targeted for Tribal Communities](#)

### Federal Funding Sources

#### [EPA Clean Water State Revolving Fund \(CWSRF\)](#)

The CWSRF funds water quality protection projects for wastewater treatment, control of nonpoint sources of pollution, decentralized wastewater treatment, and watershed and estuary management through low interest loans to a variety of borrowers.

#### [EPA Nonpoint Source Section 319 Grants](#)

Under section 319 of the Clean Water Act, EPA provides grants to states to control nonpoint sources of pollution, such as agricultural runoff, mining activities, and malfunctioning onsite septic systems. Depending on the state's nonpoint source management program, grants may be used to construct, upgrade, or repair onsite systems. For more information, contact your [state's nonpoint source coordinator](#).

#### [EPA Environmental Finance Center Network](#)

EPA grant funding started 10 university-based environmental finance centers, the Environmental Finance Center Network, which work together with the public and private sectors to fund environmental programs.

#### [U.S. Department of Agriculture, Rural Development](#)

Funding covers repair and maintenance of onsite systems.

#### [U.S. Department of Housing and Urban Development \(HUD\)](#)

HUD provides funds to states through community development block grants. The grants fund various projects, including rehabilitation of residential and nonresidential structures, construction of public facilities, and improvement of water and sewer facilities.

#### [U.S. Economic Development Administration \(EDA\)](#)

EDA administers various funding programs to promote collaborative regional innovation, public/private partnerships, national strategic priorities, global competitiveness, and environmentally sustainable development.

#### [Catalog of Federal Funding Sources for Watershed Protection](#)

A searchable database of financial assistance sources (grants, loans, cost-sharing) available to fund a variety of watershed protection projects.

### State Funding Sources

#### [Catskill Watershed Corporation Septic System Rehabilitation and Replacement Program](#) EXIT

Reimburses residents of the New York City Watershed in Delaware, Greene, Schoharie, Sullivan, or Ulster Counties for eligible costs to repair or replace failed septic systems.

#### [Kentucky PRIDE Homeowner Septic System Grant Program](#) EXIT

Provides support to low-income homeowners to replace straight pipes, outhouses, or failing septic systems with sanitary wastewater treatment systems.

#### [Massachusetts Community Septic Management Program](#) EXIT

Provides loans through the Massachusetts Water Pollution Abatement Trust to homeowners to fix failing septic systems. Three programs assist on-site septic system owners with wastewater management problems: the Community Septic Management Program, the Homeowner Septic Loan Program, and a tax credit program.

#### [Pennsylvania Infrastructure Investment Authority \(PENNVEST\): Community Septic Management Program](#) EXIT

PENNVEST, the Pennsylvania Housing Finance Agency, and the Pennsylvania Department of Environmental Protection offers low-interest loans to homeowners to repair or replace their individual on-lot sewage disposal system.

#### [Texas Commission on Environmental Quality \(CEQ\) Nonpoint Source Program](#) EXIT

Texas CEQ's Nonpoint Source Program plans and implements activities that prevent or abate urban and other nonagricultural nonpoint source pollution in Texas waters.

### Funding Targeted for Tribal Communities

#### [EPA Clean Water Indian Set-Aside \(CWISA\) Grant Program](#)

Provides funding for wastewater infrastructure to Indian tribes and Alaska Native Villages. EPA administers this program in cooperation with the Indian Health Service (IHS). Tribes must identify their wastewater needs to the IHS Sanitation Deficiency System to receive funding.

#### [EPA Environmental Protection in Indian Country - Grants](#)



Provides information for tribes about EPA and other federal grant resources and regulations and policies for applying for assistance.

[U.S. Department of Housing and Urban Development - Resources for Native Americans](#)

The Indian Housing Block Grant Program is a formula grant that funds various activities, include housing development, assistance to housing developed under the Indian Housing Program, housing services to eligible families and individuals, crime prevention and safety, and model approaches to solving affordable housing problems.

[U.S. Department of Health and Human Services: Administration for Native Americans Environmental Regulatory Enhancement](#)

Provides financial assistance to tribes and Native American nonprofit organizations for projects that address environmental regulatory enhancement, including formulating ordinances, implementing laws, and training community members to manage natural resources.

LAST UPDATED ON APRIL 14, 2017

An official website of the United States government

We've made some changes to EPA.gov. If the information you are looking for is not here, you may be able to find it on the EPA Web Archive or the January 19, 2017 Web Snapshot. [Close](#)



## Funding Sources for Small and Rural Wastewater Systems

EPA and other organizations provide funding to improve water and wastewater systems in small and rural communities.

- [Funding for All Communities](#)
- [Funding for Tribal Communities](#)
- [Funding for U.S.-Mexico Border Communities](#)

### Funding for All Communities

#### EPA Funding Sources

- [Clean Water State Revolving Fund \(CWSRF\)](#)  
Funds water quality protection projects for centralized and decentralized wastewater treatment, nonpoint source pollution control, and watershed and estuary management. The CWSRF uses federal, state, and other program funds to provide low-interest loans to communities for water quality projects. States may customize loan terms to meet the needs of small, disadvantaged communities, which typically have fewer financing options.
- [Drinking Water State Revolving Fund \(DWSRF\)](#)  
Funds infrastructure improvements in drinking water systems. The DWSRF emphasizes funding to small and economically disadvantaged communities and other programs that encourage preventing pollution to drinking water.
- [Environmental Justice Grants and Cooperative Agreements](#)  
Provide financial assistance to eligible organizations to develop collaborative partnerships, identify environmental and public health issues, and develop projects.
- [Nonpoint Source Grants Program \(Section 319 of the Clean Water Act\)](#)  
Provides grants for activities that prevent water pollution from nonpoint sources, including education, training, technical and financial assistance, technology transfer, demonstration projects, and monitoring nonpoint source implementation projects. Eligible projects include decentralized wastewater systems.
- [Public Water System Supervision \(PWSS\) Grant Program](#)  
Assists states, territories, and tribes to develop and implement PWSS programs to enforce the requirements of the Safe Drinking Water Act.

- Water Pollution Control Grants Program (Section 106 of the Clean Water Act)  
Provides federal assistance to states, territories, the District of Columbia, Indian tribes, and interstate agencies to establish and implement ongoing water pollution control programs.

### Non-EPA Funding Sources

- Appalachian Regional Commission EXIT  
A federal-state partnership that promotes sustainable communities and economic development in Appalachia.
- U.S. Department of Agriculture, Rural Development, Water and Environmental Programs  
Provide loans, grants, and loan guarantees for drinking water, sanitary sewer, and storm drainage facilities in rural areas, cities, and towns with populations of 10,000 or less. Public bodies, non-profit organizations, and recognized Indian tribes may qualify for assistance.
- U.S. Department of Housing and Urban Development, Community Development Block Grants  
Provide funds for long-term community needs, including rehabilitation, construction, or purchase of public facilities and infrastructure for water treatment and centralized and decentralized wastewater systems.
- Additional Resources for Watershed Protection  
On-line compendium created by EPA consisting of EPA and non-EPA tools, databases, and information about funding to practitioners and funders that protect watersheds.
  - Resources for Nonprofit Organizations
  - Resources for State and Local Governments
  - Resources for Funders
  - Sustainable Finance Tools
  - Federal Funding Programs
  - Funding Databases
- Catalog of Federal Funding Sources for Watershed Protection  
A searchable database of financial assistance sources (grants, loans, and cost-sharing) to fund a variety of watershed protection projects. To select funding programs for wastewater projects, select "wastewater" under "keywords."
- Catalog of Federal Domestic Assistance  
Lists federal programs available to state and local governments (including the District of Columbia); federally-recognized Indian tribal governments; territories and possessions of the United States; domestic public, quasi- public, and private profit and nonprofit organizations and institutions; specialized groups; and individuals.

## Funding for Tribal Communities

### EPA Tribal Funding Sources

- Alaska Native Villages and Rural Communities Grant Program  
Assists Alaska Native Villages and Alaska's rural communities to construct new or improve existing drinking water and wastewater systems. Funds training and technical assistance to operate and maintain these systems. EPA provides grants to the Alaska Department of Environmental Conservation, which administers the funds through its Village Safe Water Program.
- Clean Water Indian Set-Aside (CWISA) Program  
Provides funds for wastewater infrastructure to Indian tribes and Alaska Native Villages. The CWISA Program is administered in cooperation with the Indian Health Service (IHS). To be

- considered for CWISA funding, tribes must identify their wastewater needs through the IHS Sanitation Deficiency System.
- Indian Environmental General Assistance Program  
Provides grants to federally recognized tribes and tribal consortia to develop and implement wastewater and other programs on tribal lands.
- Tribal Public Water System Supervision Support Grants  
Assist tribes implement water system supervision programs to ensure their water systems comply with Safe Drinking Water Act requirements and standards.
- Tribal Water Pollution Control Program Grants (Section 106 of the Clean Water Act)  
Assist Indian tribes implement effective water pollution control programs.

### Non-EPA Tribal Funding Sources

- Alaska Native Tribal Health Consortium (ANTHC) EXIT  
Plans, designs, and constructs drinking water and wastewater treatment facilities for Alaska Native communities.
- U.S. Department of Agriculture, Rural Development, Native American Tribes  
Works with public and nonprofit organizations to provide funding options to communities in rural America including water and wastewater loans and grants.
- U.S. Department of Health and Human Services, Administration for Native Americans, Environmental Regulatory Enhancement Grants  
Provide tribes with resources to develop legal, technical and organizational capacities, and protect their natural environments.
- U.S. Department of Health and Human Services, Indian Health Service, Sanitation Facilities Construction Program  
Provides technical and financial assistance to Indian tribes and Alaska Native communities for the cooperative development and continuing operation of safe water, wastewater, and solid waste systems, and related support facilities.
- U.S. Department of Housing and Urban Development, Indian Community Development Block Grant Program  
Provides direct grants to develop viable Indian and Alaska Native communities, including decent housing, a suitable living environment, economic opportunities, and water and sewer facilities, primarily for low and moderate income persons.
- U.S. Department of Interior, Bureau of Indian Affairs  
Provides services through contracts, grants, and compacts to American Indians and Alaska Natives to enhance quality of life, promote economic opportunity, and protect and improve environmental assets.
- U.S. Department of Interior, Bureau of Reclamation, Native American Affairs Technical Assistance Program  
Provides technical assistance to Indian Tribes to develop, manage, and protect water and related resources. Activities include water needs assessments, improved water management studies, water quality data collection and assessments, and water measurement studies.

## Funding for U.S.-Mexico Border Communities

- U.S.-Mexico Border Water Infrastructure Grant Program  
Provides grant assistance to communities along the U.S.-Mexico border for planning, designing, and constructing drinking water and wastewater infrastructure. The U.S.-Mexico border region is defined as 100 kilometers (62 miles) north and 100 kilometers south of the

U.S.-Mexico border. EPA's grant program supports the Project Development Assistance Program, administered by the Border Environment Cooperation Commission, and the Border Environmental Infrastructure Fund, administered by the North American Development Bank.

• U.S.-Mexico Border 2020 Program

The latest environmental program implemented under the 1983 La Paz Agreement. The program emphasizes regional, bottom-up approaches for decision-making, priority setting, and project implementation to address environmental and public health problems in the border region. The program encourages participation from communities and local stakeholders.

LAST UPDATED ON SEPTEMBER 21, 2016

To: 'Rap, Kate[Rao.kate@epa.gov]; Curtis, Jameiya[Curtis.Jameiya@epa.gov]; Josephs, Frances[Josephs.frances@epa.gov]; Goralczyk, Michael[Goralczyk.Michael@epa.gov]; Beck, Dora[Dora.Beck@hawaiicounty.gov]; Hirota, Lyle[Lyle.Hirota@hawaiicounty.gov]; John Sakaguchi[sakaguchi@wilsonokamoto.com]; Earl Matsukawa[ematsukawa@wilsonokamoto.com]; Craig Lekven[CLekven@BrwnCald.com]; Irina Constantinescu[IConstantinescu@BrwnCald.com]  
 Cc: Kim Wagoner[Kim.Wagoner@erg.com]; Braden Rosenberg[Braden.Rosenberg@erg.com]  
 From: Patrick Goodwin  
 Sent: Mon 5/14/2018 10:09:53 PM  
 Subject: U.S. EPA Grant Environmental Review, County of Hawaii [XPS98842401] - Notes from 5/10/18 Call

Hi everyone,

Please see below for a summary of our team update call on the Pahala project from last Thursday. Please let me know by COB Wednesday if you have any comments.

Thanks!  
 -Patrick

Participants:

- Kate Rao (EPA R9)
- Dora Beck and Lyle Hirota (County of Hawaii)
- Patrick Goodwin and Kim Wagoner (ERG)
- John Sakaguchi and Earl Matsukawa (Wilson Okamoto)
- Craig Lekven and Irina Constantinescu (Brown & Caldwell)

Status of preconsultations:

- Responses received from 18 of 47 recipients (response deadline was April 14) – no responses from any of the contacted native Hawaiian organizations
- Many responses are typical/expected and in some cases are form letters
- The group discussed several of the specific preconsultation responses but did not discuss any comments of significant concern

Status of Section 7 FWS consultation:

- B&C had no concerns with the requested/recommended mitigation measures from FWS
- EPA R9 will prepare a designation letter for ERG – however, ERG will wait until biological survey is complete before initiating Section 7 consultation with FWS and finalizing mitigation measures

Status of field surveys:

- Biological surveys are scheduled for June but are awaiting updates to the site plan (see below)

EID Batch 1:

- Preliminary Engineering Report (PER) is being expanded and updated – will include discussion of alternatives considered
- B&C is revisiting the site plan to expand the treatment plant capacity while keeping the site acreage under 15 acres so that the special land use permit can be issued by County of Hawaii instead of through the land use commission (much longer process) – hopes to have that revised concept plan by Friday 5/11
- B&C will send a working version of the updated PER to ERG during the week of 5/14 for use in preparing the EA Description of Proposed Action and Alternatives (DOPAA)

Ongoing Kilauea eruption:

- No concerns regarding potential impacts to project or schedule

Schedule:

- ERG will update the schedule to reflect a) potential delay in DOPAA schedule based on the extended PER schedule, and b)

**§205-6 Special permit.** (a) Subject to this section, the county planning commission may permit certain unusual and reasonable uses within agricultural and rural districts other than those for which the district is classified. Any person who desires to use the person's land within an agricultural or rural district other than for an agricultural or rural use, as the case may be, may petition the planning commission of the county within which the person's land is located for permission to use the person's land in the manner desired. Each county may establish the appropriate fee for processing the special permit petition. Copies of the special permit petition shall be forwarded to the land use commission, the office of planning, and the department of agriculture for their review and comment.

(b) The planning commission, upon consultation with the central coordinating agency, except in counties where the planning commission is advisory only in which case the central coordinating agency, shall establish by rule or regulation, the time within which the hearing and action on petition for special permit shall occur. The county planning commission shall notify the land use commission and such persons and agencies that may have an interest in the subject matter of the time and place of the hearing.

(c) The county planning commission may, under such protective restrictions as may be deemed necessary, permit the desired use, but only when the use would promote the effectiveness and objectives of this chapter; provided that a use proposed for designated important agricultural lands shall not conflict with any part of this chapter. A decision in favor of the applicant shall require a majority vote of the total membership of the county planning commission.

(d) Special permits for land the area of which is greater than fifteen acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant.

(e) A copy of the decision, together with the complete record of the proceeding before the county planning commission on all special permit requests involving a land area greater than fifteen acres or for lands designated as important agricultural lands, shall be transmitted to the land use commission within sixty days after the decision is rendered.

Within forty-five days after receipt of the complete record from the county planning commission, the land use commission shall act to approve, approve with modification, or deny the petition. A denial either by the county planning commission or by the land use commission, or a modification by the land use commission, as the case may be, of the desired use shall be appealable to the circuit court of the circuit in which the land is situated and shall be made pursuant to the Hawaii rules of civil procedure.



State of Hawaii  
Land Use Commission (<http://luc.hawaii.gov>)

(<http://luc.hawaii.gov>)

Home (<http://luc.hawaii.gov/>) » Contact Us

## CONTACT US

State of Hawaii | Land Use Commission  
Department of Business, Economic Development & Tourism  
P.O. Box 2359  
Honolulu, Hawaii | 96804-2359  
Telephone: (808) 587-3822  
Fax: (808) 587-3827  
Email: [dbedt.luc.web@hawaii.gov](mailto:dbedt.luc.web@hawaii.gov)

Office Location:  
State Office Tower  
Leiopapa A Kamehameha  
235 South Beretania Street, Room 406  
Honolulu, Hawaii | 96804-2359

**NOTICE THAT PAHALA DEA MEETINGS ARE IN VIOLATION OF NEPA**

woc oct27-2018

Notice is provided that the Pahala Draft Environmental Assessment (DEA) meetings, October 8 through 10, 2018, held by the County of Hawaii Department of Environmental Management (COHDEM) through its Contractors are held in violation of Federal NEPA Statutes. The proposed Naalehu Wastewater System (WWS) EA and the proposed Pahala Wastewater System DEA are legally inadequate because, being two separate studies and documents prepared at different points in time, fail to consider the aggregated and cumulative effects of the connected actions of the proposed wastewater sewage treatment projects on the human environment in the isolated and sparsely populated District of Ka'u.

CEQ regulations implementing NEPA "require that an agency consider 'connected actions' and 'cumulative actions' within a single EA or EIS." *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1118 (9<sup>th</sup> Cir. 2000) (emphasis added) (citing 40 CFR 1508.25). Under 1508.25, two or more agency actions must be discussed in the same impact statement when they are "connected" or "cumulative" action. 40 CFR 1508.25(a)(1),(2) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004). A cumulative impact is defined in NEPA's implementing regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions .... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR 1508.7.

For "connected" and "cumulative" actions, the agency is told it "should" analyze them in a single impact statement, which the 9<sup>th</sup> Circuit interpreted as a mandatory requirement. *See Eagle Island Institute v. USFS*, 351 F.3d 1291 (9<sup>th</sup> Cir. 2003) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

Dated October 8, 2018, at Naalehu, Hawaii

s/ Sandra Demoruelle  
SANDRA DEMORUELLE



SANDRA L. DEMORUELLE  
94-1513 Kaalualu Road  
Post Office Box 588  
Naalehu, Hawaii 96772  
Email: naalehutheatre@yahoo.com

September 21, 2018

Kate Rao  
EPA Project Officer  
75 Hawthorne Street, WTR-3-2  
San Francisco, CA 94105

Dora Beck  
Project Manager  
Wastewater Division Chief  
County of Hawaii Department of Environmental Management  
25 Aupuni Street  
Hilo, Hawaii 96720

Re: Request for Consulting Party Status  
Kau District Cesspool Replacement Project  
Assistance ID Number (now FAIN): XP 96942401-7

Dear Ms. Rao

I am a homeowner and 38 year resident of Naalehu in the historic district of Ka'u. I raised two children here who graduated from Naalehu Elementary School (NES) and, currently, my 7 year old great-grandson attends first grade there. I serve as the Parent Representative on the NES School Community Council.

The Naalehu Elementary School is listed on the National Register of Historic Places so I have an active interest in the Naalehu Work Plan receiving NHPA Section 106 consultation, as is being done for the Pahala Work Plan.

Therefore, under 36 CFR 800.2(c)(5), I request Consulting Party Status for the Kau District Cesspool Replacement Project, EPA Assistance ID Number (now FAIN) XP 96942401-7.

The EPA and County are making an irrevocable commitment of resources to place two full-sized, new-build secondary wastewater treatment plants to service about 300 homes in remote, rural Ka'u. This is a commitment of resources our community holds sacred – as Nohea Kaawa testified, her family says that “sacred is anything that cannot be replaced.” (*County Council* testimony on Res. 650-18).

To demonstrate my interest in this EPA undertaking, I would point to my attentive participation through testimony to relevant County authorities:

**County of Hawaii Council**

May 9, 2018 REGARDING BILL142: LONO KONA SEWAGE PROJECT BONDS (3 Pages).

May 22, 2018 [Special Budget Hearing] REGARDING BULL 111: NAALEHU AND PAHALA WASTEWATER SYSTEMS COHDEM CIP 2018-19 BUDGET PRIORITIES #2 AND #3 TOTALLING \$41,051,000.

June 6, 2018 [Special Budget Hearing] REGARDING BULL 111: NAALEHU AND PAHALA WASTEWATER SYSTEMS COHDEM CIP 2018-19 BUDGET PRIORITIES #2 AND #3 TOTALLING \$41,051,000.

**County of Hawaii Council Finance Committee**

August 7, 2018 [REGARDING FAILURE TO PLACE KA’U COMMUNITY REQUEST FOR AUDIT OF LCC CLOSURE PROJECTS FROM NOVEMBER 5, 2004 TO PRESENT].

August 21, 2018 REGARDING RES. 654-18: GRANT FOR FORMER NAALEHU SEWAGE TREATMENT SITE.

**County of Hawaii Environmental Management Commission**

April 25, 2018 “Lots of Pork, Little Sewage at the Two Ka’u Sewage Plants” (2 Pages).

May 23, 2018 Provided Commissioners with copies of 1) the Naalehu WWTP CWSRF Funding Form showing 33 points making it Priority #1; 2) the DEM CIP Budget changes 2005 to 2019; 3) AOC, Naalehu Work Plan Attachment B, and EPA Reponse to community comments; 4) Demoruelle v. EPA et al., CV 18-00172 JMS-RSC Complaint; 5) *Ka’u Calendar* dated May 2018 article; 6) County records demonstrating Souza family ownership of Naalehu property since 1968.

June 27, 2018 Complaining of the lack of environmental review and the Naalehu EA is still Step #8 – to be done AFTER the COHDEM has decided on the treatment plant site, and the COHDEM has not been transparent and has withheld requests for the two Ka’u DEAs, PERs and ESA Phase I.

July 27, 2018 RE: ITEM (1) DIRECTOR’S INFORMATIONAL UPDATE – *Status of the proposed Naalehu WWTP* ((Provided Commissioners with copies of the COHDEM Extension Compliance Request letter dated June 14, 2018 to EPA; article about Ka’u Royal Hawaiian Coffee and Tea LP and its land manager, John Cross.

July 27, 2018 RE: ITEM 5.A. Policy on commenting on environmental review.

Therefore, I am formally requesting “consulting party” status under NEPA, HEPA, and all cross-cutting statutes including ESA and NHPA, and to be consulted and informed of all EPA and COH historic property identification and determination of effect for the Naalehu Work Plan project, and for the remaining environmental review actions and decisions on mitigation measures for the Pahala Work Plan project.

Sincerely,

/s Sandra Demoruelle  
SANDRA DEMORUELLE

Cc: Wilson Okamoto, Brown and Caldwell

SANDRA L. DEMORUELLE  
 Post Office Box 588  
 Naalehu, Hawaii 96772  
 Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

July 27, 2018

Dora Beck  
 Wastewater Division Chief  
 County of Hawaii Department of Environmental Management  
 25 Aupuni Street  
 Hilo, Hawaii 96720


Re: Request for Consulted Party Status for the Naalehu and Pahala Wastewater Treatment Plant Projects for HRS 343 HEPA and NEPA EA/EIS/EID

Dear Ms. Beck,

While I am contesting your failure to do a timely EIS on the Ka'u Wastewater Treatment Plant (WWTP) Projects (which are agency proposals for actions described in the AOC Attachments for the Naalehu and Pahala WWTP work plans), Mr. Kucharski stated that the Naalehu WWTP EA was going to **start** in "late fall," presumably in 2018. (*see* Environmental Management Committee meeting minutes of July 26, 2018).

Therefore, I am requesting that at any point in time the COHDEM starts or continues any HEPA/NEPA environmental review for either of these WWTP projects, I am formally requesting "consulted party" status and to be consulted and informed of all COHDEM environmental review actions and decisions.

Sincerely,

  
 Sandra Demoruelle

cc: William Kucharski, Mayor Kim, Kate Rao, Kathleen Johnson, Tessa Berman, Simi Bhat, Tom Helper, Berna Cabacunga

Subject: NOTICE OF CITIZEN SUIT FOR VIOLATION OF ESA (Notice attached)

From: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)  
 To: [rao.kate@epa.gov](mailto:rao.kate@epa.gov); [simi.bhat@usdoj.gov](mailto:simi.bhat@usdoj.gov); [berman.tessa@epa.gov](mailto:berman.tessa@epa.gov); [pahalaea@wilsonokamoto.com](mailto:pahalaea@wilsonokamoto.com); [ematsukawa@wilsonokamoto.com](mailto:ematsukawa@wilsonokamoto.com); [albright.david@epa.gov](mailto:albright.david@epa.gov); [clekven@brwncald.com](mailto:clekven@brwncald.com); [eplan1@aol.com](mailto:eplan1@aol.com); [kim.wagoner@erg.com](mailto:kim.wagoner@erg.com); [patrick.goodwin@erg.com](mailto:patrick.goodwin@erg.com); [braden.rosenberg@erg.com](mailto:braden.rosenberg@erg.com)  
 Cc: [kaena.horowitz@hawaiicounty.gov](mailto:kaena.horowitz@hawaiicounty.gov); [dora.beck@hawaiicounty.gov](mailto:dora.beck@hawaiicounty.gov)  
 Bcc: [kaucalendarnews@gmail.com](mailto:kaucalendarnews@gmail.com); [kaucalendarblog@gmail.com](mailto:kaucalendarblog@gmail.com); [nclauer@gmail.com](mailto:nclauer@gmail.com); [mail@environment-hawaii.org](mailto:mail@environment-hawaii.org); [lindainhawaii65@gmail.com](mailto:lindainhawaii65@gmail.com); [bmartin@naalehu.org](mailto:bmartin@naalehu.org); [c.tuttle0@gmail.com](mailto:c.tuttle0@gmail.com); [shannonkona@gmail.com](mailto:shannonkona@gmail.com); [repreagan@capitol.hawaii.gov](mailto:repreagan@capitol.hawaii.gov); [senruderman@capitol.hawaii.gov](mailto:senruderman@capitol.hawaii.gov); [hirono.outgoing.mail@hirono.senate.gov](mailto:hirono.outgoing.mail@hirono.senate.gov); [casework@schatz.senate.gov](mailto:casework@schatz.senate.gov); [congresswoman.gabbard@capitolnews.com](mailto:congresswoman.gabbard@capitolnews.com); [maile.david@hawaiicounty.gov](mailto:maile.david@hawaiicounty.gov)  
 Date: Monday, September 24, 2018 01:21:05 PM HST

This was sent out today.

Best, Sandra Demoruelle



Zinke\_ESA\_SUIT\_NOTICE\_9\_24\_2018.docx  
 12.4kB



NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT.docx  
 21.6kB



Daniel\_April\_12\_2018\_IMG\_20180412\_180142.jpg  
 2.4MB



Consulting\_party\_EPA\_2018.docx  
 15.1kB

SANDRA L. DEMORUELLE  
 Post Office Box 588  
 Naalehu, Hawaii 96772  
 Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

September 24, 2018

The Honorable Ryan Zinke  
 Secretary, Department of Interior  
 1849 C Street NW  
 Washington DC 20240  
 Fax: 703/358-1930

RE: NOTICE OF IMPENDING CITIZEN SUIT UNDER ESA 16 USC 1540(g)(1)(A) and (2)(A)(i)

Dear Secretary,

Attached is my Notice of impending citizen suit. Thank you for your attention to my grave concerns which are causing me concrete injuries.

Sincerely,

/s Sandra Demoruelle  
 SANDRA DEMORUELLE

**NOTICE OF CITIZEN SUIT UNDER THE ENDANGERED SPECIES ACT,  
 16 U.S.C. 1540 (g)(1)(A) and (2)(A)(i)**

PERSON GIVING NOTICE:

Sandra Demoruelle,

Physical address: 94-1513 Kaalualu Road, Naalehu HI 96772

Mailing address: PO Box 588, Naalehu HI 96772-0588

Telephone: 1-808-929-9244

Email: [naalehutheatre@yahoo.com](mailto:naalehutheatre@yahoo.com)

NOTICE:

**Location: Naalehu and Pahala, District of Kau, County of Hawaii, State of Hawaii, U.S.A.**

**Date of commencement** of ongoing ESA Sec. 7 consultation violation:

Date: **September 20, 2005** per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-0 for project period 06/01/2005 – 12/31/2007.

COH Project Manager: Dora Beck

**EPA Project Officer: Laura Bose (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 5, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

*The recipient [County of Hawaii] agrees not to bill or request reimbursement from EPA for any costs associated with the design or construction of the project [Kau Cesspool Replacement Project for Naalehu and Pahala in Kau] funded by this grant ... until EPA has complied with the National Environmental Policy Act and other environmental cross-cutters (see 40 CFR 6.300 et seq) applicable to this project. (Id. Section P1.)*



Current Date: 05/30/2018 per U.S. Environmental Protection Agency Grant Agreement with County of Hawaii, Assistance ID Number XP-96942401-7 for project period 06/01/2005 – 10/30/2020.

COH Project Manager: Dora Beck

**EPA Project Officer: Kate Rao (Responsible Official 40 C.F.R. 6.203(a)(5))**

(See Exhibit 7, Case 1:18-cv-00172-JMS-KSC Document 25-9 Filed 09/14/2018 Pages 1 to 7).

**Dates of violation: Ongoing during period of Grant Condition P1. from date of award 09/20/2005 through current Grant Period commencing 05/30/2018**

#### **EPA DISCRETIONARY ACTION IN VIOLATION OF ESA:**

1) EPA FAILED TO TAKE EARLY HARD LOOK AT THE KAU PROJECTS AS REQUIRED BY NEPA AND CONSEQUENTLY FAILED TO COMPLY WITH ESA

In the original EPA-COH Grant Agreement Section P1 dated Sept. 20, 2005 (XP-96942401-0), EPA was first required to comply with NEPA “and other environmental cross-cutters” – including the ESA. Seven Grant Agreement revisions have resulted in splitting the original Naalehu and Pahala Projects, both requiring the EPA NEPA/cross-cutters ESA environmental review procedures, into two separate EPA WWTP Work Plans, only one of which will require ESA Section 7 consultation process. In the response to EPA from FWS, the need for a Naalehu ESA process, like what was occurring for Pahala, was expressed.

NEPA requires Federal agencies, including the EPA, to prepare a “detailed statement” prior to approving any “major federal action significantly affecting the quality of the human environment. 42 CFR 4332(2)(c). “The requirement to prepare an environmental impact statement creates a democratic decisionmaking process that assures that agency decisionmakers and the public review and carefully consider detailed information about environmental impacts before any decision is made. Agencies must “[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment.” 40 CFR 1500.2(d) as cited in *Dine CARE v. BIA, Complaint*, Case3:16 cv-08077-SPL Doc. 1 Page 19.

2) EPA HAS SEPARATED THE KAU LCC CLOSURE GRANT XP-96942401 [As Amended 0 through 7] INTO TWO SEPARATE PROJECTS AND REFUSED TO FOLLOW NEPA/ESA PROCEDURES THAT EPA FOLLOWED FOR THE PAHALA PROJECT DEA AS FOR THE NAALEHU WWTP WORK PLAN

No NEPA environmental review procedures have been followed since the original project – the LCC conversion to septic for all of the illegal Kau LCCs – provided Notice of the FEA/FONSI in August 23, 2007 issue of *TEN*. The original 2007 FEA/FONSI for both the Pahala and Naalehu LCC closures has never had a Supplemental Notice published to account for the obvious changes to the original Kau Cesspool Project.

Further since this Naalehu/Pahala 2007 FEA/FONSI never been Supplemented or Withdrawn as Noticed in *TEN*, it is inappropriate to publish the *TEN* Pahala DEA/AFNSI Notice on September 23, 2018 as part of the NEPA/HEPA requisite procedural review.

“To make an informed decision about how or whether to proceed with the proposed projects and to comply with NEPA, an agency must identify their potential combined environmental impacts and make that information available to the public.” *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

Therefore, I contend herein that the COHDEM proposed Naalehu WWS EA and the proposed Pahala WWS EIS/EID are legally inadequate because, being two separate studies and documents prepared at different points in time, fail to consider the aggregated and cumulative effects of the connected actions of the proposed wastewater sewage treatment projects on the human environment in the isolated and sparsely populated District of Ka’u.

CEQ regulations implementing NEPA “require that an agency consider ‘connected actions’ and ‘cumulative actions’ within a single EA or EIS.” *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1118 (9<sup>th</sup> Cir. 2000) (emphasis added) (citing 40 CFR 1508.25). Further, under 1508.25, two or more agency actions must be discussed in the same impact statement when they are “connected” or “cumulative” action. 40 CFR 1508.25(a)(1),(2) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

A cumulative impact is defined in NEPA's implementing regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions ... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR 1508.7.

For "connected" and "cumulative" actions, the agency is told it "should" analyze them in a single impact statement, which the 9<sup>th</sup> Circuit interpreted as a mandatory requirement. See *Eagle Island Institute v. USFS*, 351 F.3d 1291 (9<sup>th</sup> Cir. 2003) as cited in *Klamath-Siskiyou v. Bureau of Land Management*, 387 F.3d 989 (9<sup>th</sup> Cir. 2004).

3) EPA HAS PUBLISHED NOTICE OF AVAILABILITY OF THE PAHALA DEA PUBLIC COMMENT PERIOD WITHOUT CONSIDERING THE CUMULATIVE EFFECTS OF THE AOC TWIN WWTP WORK PLANS WHICH SPECIFY BUILDING TWO SECONDARY SEWAGE TREATMENT PLANTS JUST 11 MILES APART IN REMOTE, RURAL KAU BEFORE APRIL 17, 2022

Despite Kate Rao approving EPA SAAP funding for the original Ka'u LCC to LCSS conversion projects, she has permitted the Naalehu Work Plan to be implemented in violation of NEPA, and failed to enact ESA Section 7 consultation with FWS, as she did with Pahala, designating ERG to do this ESA in the June 7, 2018 letter. By allowing avoidance of consideration of cumulative impacts and avoiding NEPA and ESA statutes, Ms. Rao has allowed the separation of the two Ka'u new-build WWTPs with no aggregation of impacts on the numerous affected endangered plants and wildlife and apparently intentionally avoiding any NEPA cumulative impact analysis. ("[T]he district court properly determined that the Forest Service violated the ESA when it decided not to reinstate consultation after the FWS revised its critical habitat designation..." *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075 (9<sup>th</sup> Cir. 2015)).

In *Cottonwood*, the Forest Service contended that "[t]he EA or EIS on each action ... will document the cumulative impacts of that action and all previous actions." The Court believed "that consideration of cumulative impacts after the road has already been approved is insufficient to fulfill the mandate of NEPA. A central purpose of the EIS is to force the consideration of environmental impacts in the decisionmaking process. See, e.g., *Columbia Basin Land Protection Ass'n v. Schlesinger*, 643 F.2d 585 (9<sup>th</sup> Cir. 1981); *City of Davis v. Coleman*, 521 F.2d 661 (9<sup>th</sup> Cir. 1975); *Lathan v. Brinegar*, 506 F.2d 677,693 (9<sup>th</sup> Cir. 1974) (*en banc*);

*Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109, 1113-1114 (D.C.Cir. 1971). That purpose requires that the NEPA process be integrated with agency planning 'at the earliest possible time,' 40 C.F.R. 1501.2, and the purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step is already taken." *Thomas v. Peterson*, 753 F.2d 754, 760 (9<sup>th</sup> Cir. 1985).

Because the EPA has taken specific steps to change the EPA-COH Grant Assistance Amendments for XP-96942401, as demonstrated by the May 30, 2018 amendment #7, which result in effectively evading the same NEPA/ESA procedures on the Naalehu WWTP Project by simply moving the EPA statutory obligations 11 miles away to the twin Pahala WWTP Project, I hereby give Notice of a pending citizen suit under the ESA.

Herein I object to the EPA failure to implement the ESA Sec. 7 consultation for Naalehu as Kate Rao did for Pahala and request that before there is any decisions on either Project, that the EPA-COH be required to provide the same ESA Section 7 consultation and issuance of a Biological Opinion covering the cumulative actions that will "jeopardize the continued existence" of multiple Hawaiian endangered creatures and plants for both the Pahala and the Naalehu WWTP Projects.

I declare under penalty of perjury that the forgoing is true and correct.

Dated: September 24, 2018 at Naalehu, Hawaii

s/Sandra Demoruelle

SANDRA DEMORUELLE

Subject: FW: Records Request for Hawaii County Department of Environmental Management: Request for Consultant approved Pāhala Community Outreach Plan and Naalehu Community Outreach Plan [#123]

From: naalehuthatre@yahoo.com  
 To: PahalaEA@wilsonokamoto.com  
 Cc: sandy.shore@hawaiicounty.gov; kaena.horowitz@hawaiicounty.gov; simi.bhat@usdoj.gov  
 Bcc: kaucalendarnews@gmail.com; kaucalendarblog@gmail.com; nclauer@gmail.com; mail@environment-hawaii.org  
 Date: Monday, September 24, 2018 08:56:48 AM HST

Comment # 1

The County of Hawaii Department of Environmental Management ("COHDEM") is currently in a second violation of the HEPA (HRS 343 et seq.) and UIPA statutes (first suit is Hi. Third Cir. 18-1-00206 - Nakamura) requiring the disclosure of the August 15, 2018 requested environmental assessment record[s] as no written notice has been provided, nor the record[s] requested provided to date (September 24, 2018).

This de facto denial will require another UIPA lawsuit, apparently.

Comment #2

On May 30, 2018, the EPA transferred grant funding [XP-96942401-7] first awarded September 20, 2005 to the "design and construction of wastewater improvements in Naalehu and Pahala in the Kau district of the Big Island of Hawaii" called the "Kau Cesspool Replacement Project" to provide Federal funds "will be allocated only to the 'Construction - Wastewater Treatment and Disposal System' task in the approved Pahala Community Large Capacity Cesspools Replacement Project work plan."

You evaded Hawaii County Land Use Commission scrutiny of this Pahala project by claiming it was "only" 14.9 acres per your ERG-EPA-B&C-Wilson Okamoto (hereafter called "the Contractors") May meeting minutes, which stated LUC overview at 15 acres (the under 15 acres claim will be challenged by measurement of the actual footprint you present).

Similarly, are you trying to evade the NEPA requirement of considering the cumulative impacts of the two new-build secondary sewage treatment plants, at rapidly expanding costs in a limited County economy that is losing its property tax base to lava and hurricanes, when the two expensive plants are 11 miles apart and only serve 109 and 163 households on LCCs?

Comment #3

Because you (EPA-COHDEM-Contractors) are conspiring to avoid NEPA/HEPA statutes to consider the Environmental Species Act Sec 7 (initiated by EPA for the Pahala Project under NEPA crosscutting statutes by letter to Fish and Wildlife dated June 7, 2018) for the Naalehu Project by only producing the environmental assessments, today I am filing the Notice that I am receiving concrete injuries by this illegal act and will be filing a citizen suit in 60 days.

Comment #4

I am having to go to the Naalehu Library today to review the DEA because it will not download on my computer. Although I have requested Consulting Party status at both the County and Federal level, no document has been provided to me upon my request.

/s Sandra Demoruelle  
 SANDRA DEMORUELLE

----- Forwarded Message -----

From: Shore, Sandy <Sandy.Shore@hawaiicounty.gov>  
 To: request+65ce2upva9@foi.uipa.org <request+65ce2upva9@foi.uipa.org>; Naalehu Theatre <naalehuthatre@yahoo.com>  
 Cc: cohdem <cohdem@hawaiicounty.gov>  
 Sent: Friday, August 31, 2018 12:38:27 PM HST  
 Subject: FW: Records Request for Hawaii County Department of Environmental Management: Request for Consultant approved Pāhala Community Outreach Plan and Naalehu Community Outreach Plan [#123]

Requestor Sandra Demoruelle,

Pursuant to the attached Acknowledgement to Requester dated August 21, 2018 and, of which you acknowledged on August 21, 2018: Pursuant to and in accordance with section 2-71-13, Hawai'i Administrative Rules ("HAR") extenuating circumstances exists. Due to these extenuating circumstances, DEM shall send you written notice as required by section 2-71-17, HAR within a reasonable time not to exceed twenty business days following DEM received your requests (August 15, 2018 - 11:01 AM, 11:10 AM, 11:30 AM & 3:05 PM).

Furthermore and in response to your email below. Clarification regarding the information that you are requesting was provided to you on July 31, 2018 (contracts c.006231 & c.007030) and on August 6, 2018 (contracts c.006265 & c.006765); whereby the General Terms and Conditions referenced and attached to the provided contracts note under Section 5, Subsection 5.5: Subcontracting or Assignment of Contract (see attached). The Director provided his consent when he signed the contracts.

Thank you

Sandy C. Shore  
 Contracts Clerk

County of Hawai'i  
 Department of Environmental Management  
 345 Kekūanāo'a St., Ste 41  
 Hilo, HI 96720  
 808-961-8421 ~ Telephone  
 808-961-8086 ~ Facsimile  
[www.hawaiizerowaste.org](http://www.hawaiizerowaste.org)

Confidentiality Statement

This email message and any accompanying attachments may contain information that is confidential and subject to legal privilege. If you are not the intended recipient, do not read, use, disseminate, distribute or copy this message or attachment.

—Original Message—

From: Sandra Demourelle [mailto:request+65ce2upva9@foi.uipa.org]  
 Sent: Friday, August 31, 2018 8:59 AM  
 To: cohdem <cohdem@hawaiicounty.gov>  
 Subject: Records Request for Hawaii County Department of Environmental Management: Request for Consultant approved Pahala Community Outreach Plan and Naalehu Community Outreach Plan [#123]

Aloha,

My UIPA request "Request for Consultant approved Pahala Community Outreach Plan and Naalehu Community Outreach Plan" (08/14/2018) was not answered in the time defined by HAR 2-71-13.

Please update me on the status of my request as soon as possible.

If you do not promptly provide these reports, I will sue you for them.

Mahalo,



08-21-18 S. Demourelle Acknow-to-Requester-Rev-5.14 (1).pdf  
 180.9kB



20180831125856647.pdf  
 756.1kB

Subject: Attached: Sandra Demoruelle Comment #5 PAHALA DEA/AFNSI and hard time opening on my computer so please send my Pahala DEA copy!

From: naalehuthatre@yahoo.com  
 To: ematsukawa@wilsonokamoto.com; pahalaea@wilsonokamoto.com; clekven@brwncaid.com  
 Cc: rao.kate@epa.gov; berman.tessa@epa.gov; albright.david@epa.gov; dora.beck@hawaiicounty.gov; kaeng.horowitz@hawaiicounty.gov  
 Date: Monday, September 24, 2018 10:26:11 AM HST

Aloha Wilson Okamoto and Friends,

I hope the DEA is at the libraries because I will be upset if not, since I am eagerly awaiting the explanation of how this is not in violation of so very many laws.

Sincerely, Sandra Demoruelle, PO Box 588, Naalehu HI 96772

----- Forwarded Message -----

From: Naalehu Theatre <naalehuthatre@yahoo.com>  
 To: HI Office of Environmental Quality Control <HIOfficeofEnvironmentalQ@doh.hawaii.gov>  
 Sent: Monday, September 24, 2018 10:18:25 AM HST  
 Subject: Re: RE: The September 23, 2018 Issue of The Environmental Notice is available (with corrected link in photo) PAHALA DEA/AFNSI

Its my computer. I am an analog person anyway, so will go to the Naalehu Library shortly to review it in print hard copy.

Thanks for your assistance with my problem! Sandra Demoruelle

On Monday, September 24, 2018 09:59:05 AM HST, HI Office of Environmental Quality Control <HIOfficeofEnvironmentalQ@doh.hawaii.gov> wrote:

Sorry to hear of your difficulties with downloading the Draft EA file. It's not particularly large (~54MB), and downloads quickly onto our computers from where it is located on the server.

Perhaps this direct link will download easier to your computer:

[http://oegc2.doh.hawaii.gov/EA\\_EIS\\_Library/2018-09-23-HA-DEA-Pahala-Community-Large-Capacity-Cesspool-Replacement.pdf](http://oegc2.doh.hawaii.gov/EA_EIS_Library/2018-09-23-HA-DEA-Pahala-Community-Large-Capacity-Cesspool-Replacement.pdf)

Sincerely,

Tom Eisen, Planner  
 Office of Environmental Quality Control  
 State of Hawai'i

(808) 586-4185

NOTE: OEQC's primary role is to facilitate Hawai'i's environmental review process by providing relevant advice to agencies, applicants, consultants and the public. OEQC is not authorized to make determinations on Environmental Assessments, Environmental Impact Statements or exemptions. Pursuant to Chapter 343, Hawai'i Revised Statutes, all such determinations are made by appropriate State or county agencies, county Mayors or the Governor.

From: Naalehu Theatre <naalehuthatre@yahoo.com>  
 Sent: Monday, September 24, 2018 9:38 AM  
 To: HI Office of Environmental Quality Control <HIOfficeofEnvironmentalQ@doh.hawaii.gov>  
 Subject: Re: The September 23, 2018 Issue of The Environmental Notice is available (with corrected link in photo) PAHALA DEA/AFNSI

Aloha,

I am having trouble - even after waiting half an hour - downloading the EPA/COH Pahala DEA/AFNSI.

Is it me or is it just such a large file that it takes longer than that to download?

I have not had any trouble downloading another bulky archived FEA/FONSI for this self-same project dated August 23, 2007, which, oddly, has been neither Supplemented nor Withdrawn.

Thank you for your help. Sincerely, Sandra Demoruelle

On Sunday, September 23, 2018 10:29:12 AM HST, State Office of Environmental Quality Control <oegc@hawaii@doh.hawaii.gov> wrote:

*Aloha,*

The September 23, 2018 issue of *The Environmental Notice* is now available online for your review. This email includes the correct link from the photo to the current issue of *The Environmental Notice*.



Regards,

Office of Environmental Quality Control  
(808) 586-4185  
<http://health.hawaii.gov/oeqc/>



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**Our mailing address is:**


Office of Environmental Quality Control  
235 S. Beretania St., Suite 702  
Honolulu, HI 96813

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 PAHALA DEA\_Comment\_5\_EIS\_REQUIRED.docx  
12.9kB


 Daniel\_April\_12\_2018\_IMG\_20180412\_180142.jpg  
2.4MB

Subject: Sandra Demoruelle Comment #6 attached - Facility too large for actual effluent flow

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From: naalehtheatre@yahoo.com  
To: pahalaea@wilsonokamoto.com; ematsukawa@wilsonokamoto.com  
Cc: rao.kate@epa.gov; dora.beck@hawaiicounty.gov; clekven@brwncald.com; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com  
Date: Tuesday, September 25, 2018 08:32:17 AM HST

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 PAHALA DEA\_Comment\_6\_EH\_Quote\_too\_large\_plant.docx  
13.5kB

PAHALA DEA/AFNSI SANDRA DEMORUELLE COMMENT #6

**COMMENT #6** – The Pahala WWTP is built to handle 380,000 gal/day while actual flow reported for a larger population base in 2007 FEA was 80,000 g/d so the facility design is too large.

To paraphrase Pat Tummons in her *Environment Hawaii* environmental newsletter (Vol. 1, No. 5 Nov. 1990): (**EH quoted material in bold type**)

**Lots of Pork, Little Sewage** at the Two Ka'u Sewage Plants

**“Serious problems exist”** according to the results of “talk-story” meetings held by County of Hawaii Department of Environmental Management contractor Brown and Caldwell. B&C held meetings April 10<sup>th</sup> – 12<sup>th</sup> in Naalehu as Task 3.2 of the *Naalehu Community Large Capacity Cesspool (LCC) Replacement Project*.

The COHDEM plans to locate a full-size Wastewater Treatment Plant, featuring four open sewage lagoons, on property next to the Naalehu Elementary School.

To demonstrate how serious the COHDEM is to put this sewage plant next to a school, last November, the County started condemning private property and acquire a family-owned ranch by June 2018.

**The problems** identified by the community **can be placed generally in two categories: cost of the new facility and capacity (the planned sewage plant outstrips any demand likely to develop in Naalehu for the life of the new facilities).**

*The Clean Wallet Act*

If all the County had wanted was compliance with clean-water requirements, and with the least distress to the taxpayer and payer of sewage-system user fees, it probably would have explored alternative means of sewage treatment -- methods, such as constructed wetlands, that generally are less capital – and labor – intensive than traditional treatment plants. At the very least, it would have brought the planned treatment plant’s size more in line with realistic demand projections and would have developed a timetable for construction to minimize the Naalehu LCC problem.

Once again, as with the Hilo sewage plant in 1989, none of these courses was pursued. **When citizens suggested alternative treatment methods, the letters and accompanying information were ignored** in the EPA’s *RESPONSES TO PUBLIC COMMENTS* on the AOC Attachment B. **No record of any further discussion of this proposal** will be provided upon request of Naalehu resident Sandra Demoruelle without EPA requiring a payment of \$1232 in FOIA fees.

The *Environment Hawaii* article goes on to explain the problems of a sewage plant that is too large for the amount of wastewater requiring treatment:

The problem of too large a size plant is **“underutilization (plants do not function well if routinely operated at a fraction of their capacity...”** Underutilized sewage plants can become a **“negative removal efficiency” – meaning “what the plant pumped out was more contaminated than what went in.”**



Subject: Re: Sandra Demoruelle Comment #7 - LUC Rule 205-6 (d) Special Permit requires state LUC approval over 15 ac. OR FOR LANDS DESIGNATED IMP. AG. LAND

From: naalehutheatre@yahoo.com  
 To: pahalaea@wilsonokamoto.com; ematsukawa@wilsonokamoto.com  
 Cc: rao.kate@epa.gov; dora.beck@hawaiicounty.gov; clevken@brwnald.com; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com  
 Date: Tuesday, September 25, 2018 09:38:47 AM HST

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits on land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. (15.3 acres) plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
 SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Subject: Re: Sandra Demoruelle Comment #8 - Inadequacy of Responsible Official outreach to the local Hawaiian community

From: naalehutheatre@yahoo.com  
 To: pahalaea@wilsonokamoto.com; ematsukawa@wilsonokamoto.com; rao.kate@epa.gov; dora.beck@hawaiicounty.gov  
 Cc: clevken@brwnald.com; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com; repcreagan@capitol.hawaii.gov  
 Bcc: okoapottery@yahoo.com; info@okaukakou.org; hoomalukau@gmail.com; dpnierra@yahoo.com; kilaueatutu@gmail.com; friendskaul@gmail.com; gailandgreg@mac.com; kahakai.cleanups@gmail.com; office@hooveroad.com; hawaiianranchos4U@gmail.com; info@honuapopark.org; settlage@hawaii.edu; kauhcf@gmail.com; krhcai@yahoo.com; cliff56@hawaii.rr.com; ho.hoku@gmail.com; honuapokau@yahoo.com; lschubert@trnc.org; katbrady@hotmail.com  
 Date: Tuesday, September 25, 2018 12:28:03 PM HST

The EPA Responsible Official failed to reach out to local Hawaiian organizations, choosing to poll instead the non-responsive Oahu organizations.

Suggested affected Hawaiian organizations would include:

O Ka'u Kakou  
 Aha Moku Council  
 Kau Agro-Forestry  
 Big Island Community Coalition  
 Hawaiian Civic Club of Ka'u (President Blossom DeSilva)  
 Ho'omalu Ka'u  
 Hui Malama Ola Na OIwi  
 Hula Halau O'Leionalani (Kumu hula Debbie Ryder)  
 Ka Ohana O Honuapo  
 Ka'u Multicultural Society  
 Ka'u Preservation  
 Life of the Land  
 Malama I Ka Nani

Other affected community organizations would include:

Pacific Quest  
 [Naalehu & Pahala] Boys and Girls Club  
 Conservation Council for Hawaii  
 Cooper Center Council  
 Discovery Harbour Community Assn.  
 Friends of the Hawaii Volcanoes National Park  
 Friends of Kahuku Park  
 Friends of the Ka'u Libraries  
 Hawaii Farmers Union United  
 Hawaiian Ranchos Community Assn.  
 Ka'u 4-H  
 Ka'u Agricultural Water Cooperative  
 Ka'u Chamber of Commerce  
 Ka'u Coffee Growers Assn.

Ka'u Farm Bureau  
 Ka'u Food Pantry  
 Ka'u High School Alumni  
 Ka'u ILWU Pensioners Club  
 Ka'u Hospital Charitable Foundation  
 Ka'u Preservation  
 Ka'u Roping and Riding Assn.  
 Ka'u Rural Health Community Assn  
 Ka'u Scenic Byways Committee  
 Ka'u Soil and Water Conservation District  
 Ocean View Community Assn.  
 Ocean View Community Development Corporation  
 Pahala Filipino Assn  
 Pahala Karate Dojo  
 Sierra Club - Moku Loa Group  
 The Nature Conservancy  
 Tutu and Me Traveling Preschool  
 Volcano Community Assn.  
 Volcano Rotary Club

s/ Sandra Demoruelle Dated September 25, 2018 in Naalehu Hawaii  
 SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
 SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Subject: Re: Sandra Demoruelle Comment #9 - Hawaii County Council District 6 member's name is Maile Medeiros David (not Maile Medeiros)

From: naalehutheatre@yahoo.com  
 To: pahala@a@wilsonokamoto.com; ematsukawa@wilsonokamoto.com; rao.kate@epa.gov; dora.beck@hawaiicounty.gov  
 Cc: ciekven@brwncaled.com; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com; maile.david@hawaiicounty.gov; repcreagan@capitol.hawaii.gov  
 Date: Tuesday, September 25, 2018 12:39:08 PM HST

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" Councilmember Maile Medeiros, when her name is listed on the COH website as "Maile Medeiros David."

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
 SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17, so under 205-6(d) "Special permits or land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq.ft. [15.3 acres] plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq.ft., bring total acreage at Site 7 as 16.1 acres.

Your just saying it is 14.9 acres and will never affect a larger area is disingenuous and does not portend well for accuracy in the rest of the DEA information.

The COHDEM et al. would be well advised that they are going to have to "adhere to the representations" they make in the EA and Special Permit application, under LUC supervision. LUC may see through your purported factual information to the false claims that underlie claiming 14.9 acres, for instance.

Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
 SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Subject: Re: Meeting in Pahala for DEA - on Oct. 10, 2018 - will police be there to arrest us?

From: naalehutheatre@yahoo.com  
 To: eplan1@aol.com; berman.tessa@epa.gov; ematsukawa@wilsonokamoto.com; pahalaea@wilsonokamoto.com; clekven@brwncald.com; simi.bhat@usdoj.gov; rao.kate@epa.gov; dora.beck@hawaiicounty.gov; kaena.horowitz@hawaiicounty.gov  
 CC: maile.david@hawaiicounty.gov; lindainhawaii65@gmail.com; albright.david@epa.gov; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com; bmartin@naalehu.org; kaucalendarnews@gmail.com; kaucalendarblog@gmail.com; repcreagan@capitol.hawaii.gov; nclauer@gmail.com; shannonkona@gmail.com; senruderman@capitol.hawaii.gov; mail@environment-hawaii.org; casework@schatz.senate.gov; hirono.outgoing.mail@hirono.senate.gov; joe.kamelamela@hawaiicounty.gov; william.kucharski@hawaiicounty.gov; cohdem@hawaiicounty.gov; mpoffice@earthjustice.org; congresswoman.gabbard@capitolnews.com; c.tuttle0@gmail.com; labford@turquoise.net  
 Date: Friday, September 28, 2018 01:21:11 PM HST

Are you planning to have police present to arrest us for speaking on this tremendously controversial "municipal" sewage treatment plant?

Please answer or I will take it as a firm yes!

Sincerely, Sandra Demoruelle

On Friday, September 28, 2018 11:51:51 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Sorry I used the educational term "ESL" - the correct regulatory requirement is Title VI - LEP, Public Participation and Affirmative Compliance Obligation: EPA 21.3.1 "you are required by Title VI of the Civil Rights Act to provide meaningful access to LEP individuals..." Having given Berna, B&C and W-O adequate notice herein, I will be present to observe that such LEP access is adequately provided at all EPA/COH DEA meetings, and I will need to report any violation to OCR- San Francisco.

In any case, except to exclude many meaningful comments, why wouldn't you take ORAL comments at the only DEA community meeting? Anyone who wanted to provide WRITTEN comments, such as myself, will do so. I do not need to go to a public meeting to hear written comments from extremely limited English language persons, LEP, as found in Pahala.

If any one of you cared at all, you would HEAR the various languages of LEP plantation workers most frequently spoken instead of English, as I do at the bank or post office.

But since none of you care about me, or Naalehu or Pahala, I will just keep on suing and suing and letting OCR know what you do to us at your DEA meetings.

Best, Sandra Demoruelle

PS: Lest you even think your "congressional appropriation" designation for the grant "protects" you from any statutory requirements - they have a policy covering that pork-barrel practice for evading NEPA/cross-cutters: EO 13457, the aptly named **Protecting American Taxpayers from Government Spending on Wasteful Earmarks.**

On Friday, September 28, 2018 09:54:04 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Equity would allow for oral comments at the Oct 10 meeting.

Either written comments are required at all meetings r/t the DEA or not. Cite your statutory authority, please.

Best, Sandra Demoruelle

Subject: Re: Sandra Demoruelle Comment #10 - Pahala DEA fails to consider debt financing of the County share of the whole Pahala sewage line/municipal sewage treatment plant costs

From: naalehutheatre@yahoo.com  
 To: pahalaea@wilsonokamoto.com; ematsukawa@wilsonokamoto.com; rao.kate@epa.gov; dora.beck@hawaiicounty.gov  
 Cc: ciekven@brwnald.com; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com; maile.david@hawaiicounty.gov; repreagan@capitol.hawaii.gov  
 Date: Friday, September 28, 2018 01:42:46 PM HST

Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

In other words, the EPA Responsible Official has failed to assess even the single impact of the Pahala project on the COH credit capacity as it relates to sewer bond financing, already stressed by Lono Kona's expanding costs, let alone the cumulative impacts of financing the two Kau LCC closure projects with construction costs accrued with under one year of separation.

No indication is given in the DEA of consideration of the County's present and potential burden of debt financing for such purposes, which would identify if the County has the potential to become a "problem borrower" because of these two projects.

Also, why has no consideration been given to non-local financing like the Municipal Wastewater Construction Grant of EPA?

/s Sandra Demoruelle  
 SANDRA DEMORUELLE

On Tuesday, September 25, 2018 12:39:08 PM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Page 1-3 of the Pahala DEA lists as a consulted "Elected Official" **Councilmember Maile Medeiros**, when her name is listed on the COH website as "**Maile Medeiros David**."

/s Sandra Demoruelle Dated September 25, 2018 at Naalehu, Hawaii  
 SANDRA DEMORUELLE

On Tuesday, September 25, 2018 09:38:47 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

The transparent efforts of the Contractors-EPA-COHDEM to evade LUC approval by stating "14.9 acres" are for naught because the Site 7 is on LUPAG Designated Important Ag. Lands per Figure 6.1 Page 6-17,

so under 205-6(d) "Special permits on land the area of which is greater than 15 acres or for lands designated as important agricultural lands shall be subject to approval by the land use commission. The land use commission may impose additional restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant."

Anyhow, anyone who can do geometry can see from the project footprint and the Scale in Feet, that the project covers a minimum of 667,500 sq. ft. (15.3 acres) plus the utility access must be considered as part of the project impacts no matter WHO will own it, so that is another 37,500 sq. ft., bring total acreage at Site 7 as 16.1 acres.

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Finally, your minutes from the joint May 2018 meeting talk about evading LUC scrutiny by keeping the project footprint under 15 acres.

/s Sandra Demoruelle  
 SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

On Tuesday, September 25, 2018 08:32:17 AM HST, Naalehu Theatre <naalehutheatre@yahoo.com> wrote:

Subject: Re: Sandra Demoruelle Comment #11 - In TEN Notice [9/23/18], HRS Trigger did not state it was 5(a)(9) - a "proposed wastewater system" which triggers an EIS

From: naalehutheatre@yahoo.com  
 To: pahalaea@wilsonokamoto.com; ematsukawa@wilsonokamoto.com; rao.kate@epa.gov; dora.beck@hawaiicounty.gov  
 CC: clekven@brwncald.com; kim.wagoner@erg.com; patrick.goodwin@erg.com; braden.rosenberg@erg.com; maile.david@hawaiicounty.gov; repcreagan@capitol.hawaii.gov; iconstantinescu@brwncald.com; jsakaguchi@wilsonokamoto.com; simi.bhat@usdoj.gov; berman.tessa@epa.gov; eplan1@aol.com; kaena.horowitz@hawaiicounty.gov; joe.kamelamela@hawaiicounty.gov  
 Date: Monday, October 1, 2018 10:40:37 AM HST

All wastewater systems have had an EIS. Failure to do so means that EPA and COHDEM are intentionally evading an EIS process for the single project of the Kau LCC replacements.

Dated October 1, 2018 in Naalehu, Hawaii  
 S/ Sandra Demoruelle  
 SANDRA DEMORUELLE

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Since almost all of the costs of both these municipal sewage treatment plant projects to close the Kau LCCs are going to be CWSRF loan funding, why wasn't any study done of the County of Hawaii borrowing provided as information in the DEA, especially in light of the diminishing COH tax base, as the primary source of funds for the projects.

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 SANDRA DEMORUELLE Dated September 25, 2018 at Naalehu, Hawaii

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 Image (2).jpg  
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ref (23a)

Ms. Sandra Demoruelle  
P.O. Box 588  
Naalehu, HI 96772

Subject: Draft Environmental Assessment (EA) for the  
Pāhala Large Capacity Cesspool Replacement Project  
District of Kaʻu, Hawaiʻi  
Response to Comment – USPS October 23, 2018

Dear Ms. Demoruelle:

Thank you for your October 23, 2018 comments sent via the US Postal Service (USPS) regarding the County of Hawaiʻi Department of Environmental Management Draft Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement project. Our responses follow (note that the page numbers referenced are “as received” with Page 1 being the first page of your comment submittal):

Pages 2-4:

The Draft EA Section 2.7 provides a the discussion of the criterion used to evaluate various sites for the treatment and disposal facility, including appropriate site characteristics, site accessibility as it relates to the various requirements of the Administrative Order on Consent, and environmental impacts. Further, the Draft EA Section 2.8 discusses the various site alternatives which were considered for the PER and then no longer considered as they contained “fatal flaws”.

This information will be repeated in the Final EA.

Section 2.1.4 of the Draft EA provides a history of wastewater management for Pāhala. As stated, in 2003 C. Brewer requested assistance from the County to close their large capacity cesspools as required by the Environmental Protection Agency. Section 2.14 discussed that, around 2006, C. Brewer requested that the County construct and maintain a new and improved sewer system for the Pāhala community. A County Council Resolution approved the C. Brewer request. In anticipation of C. Brewer's dissolution, the company proposed, and the County agreed in April 2007, to enter into a formal agreement to construct and maintain a new and improved community sewer system or assume maintenance and required service of the existing systems by April 30, 2010. The Final EA will clarify that C. Brewer committed to complete the line (called a lateral) between the residences and the property line at the edge of the public right-of-way adjacent to the new collection system for specific private properties in Pāhala and

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Nāʻālehu. It was agreed, if the County did not complete its' portion of the work by April 30, 2010, it would assume pending and unfinished obligations to connect the new laterals installed by C. Brewer to the residences and new collection system when complete. Thus, the project includes connecting these C. Brewer laterals, which may now need to be replaced.

As outlined in the Draft EA Section 2.1.3, the County has been discussing the need for a new collection system, treatment and disposal facility to replace the existing collection system and large capacity cesspools (LCCs), with the community since 2004.

On December 13, 2008 and April 25, 2010, community meetings sponsored by Councilman Guy Enriques were held at the Nāʻālehu and Pāhala Community Centers, respectively, to discuss the Nāʻālehu and Pāhala Large Capacity Cesspool Replacement project. As part of the meetings, an informational handout prepared by the County Wastewater Division, provided a history of the project documenting that, in 2004, Mayor Kim's office used a ballot system to get input from property owners regarding different wastewater treatment/disposal alternatives for those property owners connected to the LCCs who would no longer be served by the C. Brewer system after LCC closure. As reported in the Draft EA Section 2.1.4, 87 percent of the returned ballots were in favor of the installation of a new sewer collection system and a treatment and disposal system to be operated and maintained by the County. The handouts indicated that Mayor Kim's office advised the property owners the County would move forward with a new system for Nāʻālehu and Pāhala on November 5, 2004. Additionally, the handouts stated that public meetings were held in both Nāʻālehu and Pāhala in November 2006 to discuss the wastewater system alternatives and the biggest challenge to date had been finding suitable land for siting a wastewater treatment/disposal facility in Pāhala. The handouts also stated that all properties that become accessible to the new sewer system would be required to connect in accordance with Hawaiʻi County Code Chapter 21.

This information will be included in the Final EA.

The Draft EA Sections 4.1.1 Past, Present, and Reasonably Foreseeable Actions, 4.1.2 Actions Considered but Excluded from Analysis, 6.2.2 Kaʻū Community Development Plan, and 7 Public Participation, references the Kaʻū Community Development Plan (CDP) as considered in the preparation of the Draft EA.

The Kaʻū CDP Policy 90 states “Implement protocols for receiving community input at meetings in Kaʻū during capital project siting and design.

Notwithstanding that the Kaʻū Community Development Plan was adopted in October 2017 (Ordinance No. 2017-66), the information above shows the County presented information to and received input from the Pāhala Community at meetings in Kaʻū during project siting and conceptual design.

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Pages 4-6

The Nā'ālehu WWTP and Lono Kona project comments are not pertinent to the content of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

Page 7:

There is no requirement to publish notices of public meetings like the “talk story” sessions you mentioned in the Office of Environmental Quality Control (OEQC) *The Environmental Notice*. OEQC may publish such notices on a space available basis.

Page 8-9:

Hawai'i Revised Statutes (HRS) Section 343-5 Applicability and requirements states under item (c) (4) “A(n environmental impact) statement shall be required if the agency finds that the proposed action may have a significant effect on the environment...” The criteria by which the proposing agency makes the significance determination is provided in Hawai'i Administrative Rules (HAR) Title 11 Section 200-12 (a) and (b) which states: “(a) In considering the significance of potential environmental effects, agencies shall consider the sum of the effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action. (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences,... and the...effects of the action.”

HAR Section 11-200-10 Contents of an environmental assessment includes “(9) Findings and reasons supporting the agency determination or anticipated determination...” The Draft EA provides this in Chapter 8 Findings and Determination. Neither HRS Chapter 343 nor HAR Title 11, Chapter 200 contain any requirement that all proposed wastewater systems require an Environmental Impact Statement (EIS).

The Nā'ālehu WWTP comments are not pertinent to the content of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

See EPA response to comment section.

Retained to address EA required for CIP.

HRS §343-5-1 states (a) Except as otherwise provided, an environmental assessment shall be required for actions that: (1) Propose the use of state or county lands or the use of state or county funds, other than funds to be used for feasibility or planning studies for possible future programs or projects that the agency has not approved, adopted, or funded. The CIP program reviewed annually by the County Council is not yet funded when passed.

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HAR 11-200-2 definition states: "Action" means any program or project to be initiated by an agency or applicant. Further, HAR 11-200 states "Agency" means any department, office, board, or commission of the state or county government which is part of the executive branch of that government. The County Council is part of the legislative, not the executive, branch of the County.

Page 10:

On March 15, 2018, the County mailed a letter stating a Draft EA is being prepared for the County the Pāhala Large Capacity Cesspool Replacement project along with Pre-Assessment documents to a total of 47 agencies, elected officials and utilities requesting comments prior to preparation of the Draft EA. In addition, on March 29, 2018, the County mailed Pre-Assessment documents to 14 Native Hawai'i an Organizations requesting comments prior to preparation of the Draft EA. The Draft EA Summary shows the list of those consulted prior to preparation of the Draft EA. The Draft EA Section 10 shows those agencies, elected officials, utilities and Native Hawai'i an Organizations that provided comments. Finally, the Draft EA Appendix A includes reproductions of the comments and responses to those making comments.

In addition, the County submitted required information and documents to the OEQC related to the Draft EA. Based on the County provided information, on September 23, 2018, notice of availability of the Draft EA was published in the Office of Environmental Quality Control *The Environmental Notice*. Subsequently, on September 26, 2018, a public notice was published in the *Hawai'i Tribune Herald*, *West Hawai'i Today* newspapers, and the online *Ka'ū News Brief*. The public notice was to announce the October 10, 2018 public information meeting to be conducted by the County in Pāhala to discuss the availability of the Draft EA and process for submitting comments. The notice stated that the second part of the October 10<sup>th</sup> meeting was to address Section 106 of the National Historic Preservation Act (NHPA) involving consultation with Native Hawai'ian Organizations (NHOs) and Native Hawai'ian descendants with ancestral lineal or cultural ties or cultural knowledge or concerns, or religious attachment to the proposed project area. During the October 10<sup>th</sup> meeting attendees were invited to provide information about the proposed project area.

On November 6, 2018, 11 copies of the Draft EA were delivered to the public libraries in Pāhala and Nā'ālehu. Subsequently, notice of availability of the Draft EA was republished on November 8, 2018 and the comment period ended on December 10, 2018. The Final EA will include the comments received and responses provided in Appendices F and G.

This information will be included in the Final EA.

The Draft EA for the Nā'ālehu project is not the subject of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

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Page 11:  
The County Clerk has confirmed that Resolution 412 was not voted on by the County Council.

The Draft EA for the Pāhala Large Capacity Cesspool Replacement project was jointly prepared by the US Environmental Protection Agency (EPA) and the County of Hawai'i to address both the National Environmental Policy Act (NEPA) and Hawai'i Environmental Policy Act (HEPA). Please refer to Appendix F for EPA's response. After the procedural requirements of Section 106 of the National Historic Preservation Act have been completed and comments to the Draft EA have been addressed, the EPA and the County will issue a Finding of No Significant Impact and Final EA.

See response to Page 8 above.

Page 12:  
HAR 11-200-7 **Multiple or phased applicant or agency actions** states that "A group of actions proposed by an agency or an applicant shall be treated as a single action when (1) The component actions are phases or increments of a larger total undertaking, (2) An individual project is a necessary precedent for a larger project; (3) An individual project represents a commitment to a larger project; or (4) The actions in question are essentially identical and a single statement will adequately address the impacts of each individual action and those of the group of actions as a whole." The wastewater projects at Pāhala and Nā'ālehu are not phases or increments of a larger total undertaking, are not precedents or commitments for a larger project, nor are they identical. Hence, there is no requirement to consider them in a single environmental review document.

See responses to Pages 2-4 and 10 above.  
The Draft EA Section 7 also documents the 5 public meetings held in Pāhala December 12, 13 and 14, 2017 to discuss the Pāhala Large Capacity Cesspool Replacement project.

On September 10, 2018, letters containing information on the availability of the Draft EA, the comment period, and the October 10, 2018 meeting were mailed to property owners with C. Brewer lines and newly-accessible property owners. On October 26, 2018 letters were mailed to property owners with C. Brewer lines and newly-accessible property owners informing them of the extension of the public comment period to December 10, 2018.

This information will be included in the Final EA.

The Draft EA Section 7 will be revised to add that, on March 21, 2019, the County held another meeting in Pāhala which included a presentation to provide information on financing sources available to owners of parcels which would become accessible to the new County collection system. The purpose of the meeting was to fulfill a County commitment made in October, 2018

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to research financing options available to the newly accessible residents of the Pāhala Community by March, 2019.  
See also response to Page 4 above.

The Draft EA, Section 2.8.2(a), discusses use of a community septic tank.

Further details for the use of community septic tanks are also provided in the Draft EA, Appendix B, Section 7.5.1 and 7.5.2, including the need for a Department of Health (DOH) variance from HAR 11-62-23.1 requirements (which must be renewed every five years), and the need to provide for additional flow.

Page 13, A and attachment A Page 31:  
HRS Chapter 343 Section 5 (a)(9)(A), states as follows: "(a) Except as otherwise provided, an environmental assessment (emphasis added) shall be required for actions that: ... (9) Propose any: (A) Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent...". HAR Title 11, Chapter 200, which implements HRS Chapter 343, however, differentiates between "agency actions" that utilize state or county lands or funds and "applicant actions" for which an applicant must seek agency approval. Since the proposed action will utilize county lands and funds, it is an "agency action" requiring compliance with HRS Chapter 343 and HAR Title 11, Chapter 200, pursuant to which an environmental assessment is being prepared and processed.

Thus, the project description published by the OEQC in the September 23, 2018 issue of *The Environmental Notice* OEQC was correct.

Page 13 B and Attachment B Pages 32-34:  
HAR Title 11 Chapter 200-10 Contents of an environmental assessment does not include a requirement for evaluating the fiscal impacts of a project on a County's budget or ability to obtain funding.

Page 13 C and Attachment D Page 35:  
The public outreach subcontractor did not prepare the Draft EA.

Page 13 D and Attachment D Pages 36-42:  
This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project; the Draft EA Section 5 includes federal cross cutter analysis for both the Pāhala Large Capacity Cesspool Conversion and Pāhala Wastewater Collection System parts that may also be funded by the State of Hawai'i DOH Clean Water State Revolving Fund (CWSRF).



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Page 13 E and Attachment E Page 43:  
This is not a comment pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

Page 14 F and Attachment F Page 44:  
The Kealakehe Aeration Upgrade project is not a comment pertinent to the content requirements of the Draft EA for the Pāhala LCC Replacement project.

The Draft EA Appendix B is a Preliminary Engineering Report for the wastewater treatment plant. Table 5.3, Section 5.5 of Appendix B provides a conceptual planning level construction cost estimate of about \$14.6 million for the secondary wastewater treatment and disposal facility only. Table 5.3 does not reflect the total cost of the Proposed Action and does not include planning, design, land acquisition, the collection system or past project costs. As stated in the Draft EA Section 2.1.2, the project may be funded by the State of Hawai'i Department of Health Clean Water State Revolving Fund which authorizes low interest loans for the construction of publicly owned wastewater treatment works and an EPA Special Appropriation Grant. This information will be included in the Final EA.

The Final EA will include the Final PER and related construction cost estimates for the Pāhala LCC Replacement project.

See also responses to Pages 8-9, 12, 13 A and 13 D above.

Page 14 G and Attachment G Pages 45-48:  
The Elementary School Complex, the portion of campus closest to the treatment and disposal facility within the Ka'ū High and Pāhala Elementary School campus, lies more than ½ mile directly or about 1 miles away from the proposed treatment and disposal facility by road. From the school, one must travel on a portion of the school parcel and on 5 streets to reach the fenced wastewater treatment and disposal facility. The intervening streets access or abut residential parcels and other land uses. The distance and intervening land uses show the treatment and disposal facility is not located in close proximity to a school facility. This information will be included in the Final EA.

Page 14 H and Attachment H Pages 49-50: The Draft EA Section 4 discusses the Cumulative effects of the project.

The Nā'ālehu WWTP and its' proximity to the Nā'ālehu school are not comments pertinent to the content requirements of the Draft EA for the Pāhala Large Capacity Cesspool Replacement project.

See response to Page 14 G above

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Page 14 I and Attachment I Pages 51-59:  
The Draft EA Section 2.8 discusses wastewater treatment alternatives. Effluent flows greater than 1,000 gallons per day are subject to Hawai'i's Underground Injection Control (UIC) rules. Use of a small capacity system to treat the wastewater generated by each privately-owned parcel in the community currently served by the County operated LCCs would likely necessitate siting multiple units within private property. As outlined in the Draft EA, Appendix B Section 7.5.4, issues associated with individual wastewater systems include:

- locating the treatment units within developed private parcels, many of which are small (less than 10,000 square feet) and significantly improved;
- insufficient land area within developed private parcels to effectively use/dispose of treated effluent without impacting adjacent parcels; and
- soil conditions and subsurface geology unsuitable for effluent disposal compliant with HAR 11-62-34 requirements, potentially necessitating import fill soils or elevated mound systems.

This information will be repeated in the Final EA.

Additional issues that would need to be addressed include: access for equipment, ownership of the units, and operation and maintenance of the units in this remote location.

This information will be added to the Final EA, Section 2.8.2.

The financial impact of the project on individual newly accessible property owners was raised by the community during the December 2017 public meetings as summarized in Section 7 of the Draft EA and again during the October 10, 2018 meeting. Although not required by HAR Title 11, Chapter 200, the Department of Environmental Management (DEM) voluntarily convened an additional public meeting on March 21, 2019 to gain further input from newly accessible property owners and fulfill a commitment made in October 2018 to research and provide financing options available for the newly accessible residents of the Pāhala Community to pursue.

Programs discussed included:

- US Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program - Community Block Grant Program, and
- US Department of Agriculture - Rural Development (USDA-RDA) Program.

As noted during the presentation, these programs may change in the coming years, and additional options may be added to this preliminary list. Hawai'i Legislature, Senate Bill 221 SD1, which could amend HRS Chapter §342D to establish a low interest loan program offering financial

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assistance to cesspool owners to connect to wastewater treatment systems approved by the Department of Health was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

This information will be included in the Final EA.

Page 15 J and Attachment J Page 60:

The proposed Pāhala wastewater treatment plant (WWTP) 14.9-acre project site has been developed to provide the necessary land area for the facilities needed to treat the incoming flows and to dispose the treated effluent from the treatment processes. The proposed project site minimizes the use of the adjacent lands which contain a commercial macadamia orchard. A larger project site is not required. The special permit requirement applies to the proposed WWTP parcel only, not to the proposed utility easements. The Draft EA Section 2.10.1 states the County will apply for the required special permit through the Planning Commission.

Pages 17- 30: See response to Pages 2-15 above.

Page 31-62 (Marked A-J): These are duplicates of some of your other comments, attached as reference material supporting the comments provided on pages 13-15 and duplicated on pages 28-30, to which we've responded. Responses to each were sent to you under separate cover and will also be included in Appendix G of the Final EA.

For clarity:

Page 31 is Attachment A for both Pages 13 and 28: See response to Page 13 A above.

Pages 32-34 are Attachment B for both Pages 13 and 28: See response to Page 13 B above.

Page 35 is Attachment C for both Pages 13 and 28: See response to Page 13 C above.

Pages 36-42 are Attachment D for both Pages 13 and 28: See response to Page 13 D above.

Page 43 is Attachment E for both Pages 13 and 28: See response to Page 13 E above.

Page 44 is Attachment F for both Pages 14 and 29: See response to Page 14 F above.

Pages 45-48 is Attachment G for both Pages 14 and 29: See response to Page 14 G above.

Pages 49-50 are Attachment H for both Pages 14 and 29: See response to Page 14 H above.

Pages 51-59 are Attachment I for both Pages 14 and 29: See response to Page 14 I above.

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Pages 60-62 are Attachment J for both Pages 15 and 30: See response to Page 15 J above.

Page 63: The Pāhala and Nā'ālehu communities are not a single community, but rather are two distinct communities that are located in different drainage basins. The Pāhala community is located about 11 miles north of the Nā'ālehu community. The US Geological Survey topographic maps show the two communities are separated by five drainage gulches: Hionamoa, Moaula, Punaluu, Nicole and Hulea. The topographic map shows these five gulches drain in a generally west to east direction. These same maps show the Alapai Gulch located adjacent to the western edge of the Nā'ālehu community drains from north to south. Thus, the distance, separation and topographic configuration of Hawai'i Island shows the two communities are not a single entity subject to a single project under federal and State environmental laws, including analysis of impacts.

The Pāhala and Nā'ālehu LCC Replacement Projects are not connected to each other and are physically separated by a distance of 11 miles. Separate EA processes are being conducted for each community's project. Cumulative impacts will be considered for connected projects as required by HRS 343.

Consultation and informational meetings such as the ones held regarding connected actions within appropriate geographic boundaries for this project on October 8 through 10, 2018 are not mandated by and do not violate NEPA.

Pages 64 to 66: On October 19, 2018, the US EPA replied to this request stating, there was no rationale provided why the request for "consulting party" status was appropriate for this project. As such, the request for "consulting party" status under the National Historic Preservation Act was denied. Further, the EPA stated the Nā'ālehu LCC replacement is a separate project that is not part of the proposed action currently subject to environmental review by EPA. Comments regarding the Nā'ālehu LCC Replacement project are not pertinent to the content requirements for the Pāhala LCC Replacement Project Draft EA.

Page 67: EPA has provided a response to your request under NEPA and the National Historic Preservation Act requirements. HRS 343 and HAR 11 200 have no requirements or definitions related to consulted party status for an EA.

Pages 68 to 96: These are duplicates of some of your other comments, to which we've responded. Responses to each were sent to you under separate cover and will also be included in Appendix E of the Final EA.

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We appreciate your participation in the Draft EA process.

Sincerely,

A handwritten signature in black ink, appearing to read 'Keola Cheng', written in a cursive style.

Keola Cheng  
Project Manager

cc: W. Kucharski, COH DEM  
D. Beck, COH WWD  
S. Mendonca, COH WWD  
K. Rao, EPA  
C. Lekven, BC  
P. Goodwin, ERG

Final Environmental Information Document  
Pahala Large Capacity Cesspool Closure  
April 2024

**Final  
Environmental Information Document**

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# **PĀHALA LARGE CAPACITY CESSPOOL CLOSURE**

**Pāhala, Big Island, Hawai'i  
May 2024**

**Prepared For:**  
County of Hawai'i Department of Environmental Management

**Prepared By:**  
Wilson Okamoto Corporation



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# 1. Introduction

## 1.1 Background

This document is intended to address State and Federal Environmental Review Requirements of the proposed Amended Administrative Order of Consent (Amended AOC) (Docket No. SDWA-UIC-AOC-2017-0002, proposed February 14, 2024) Large Capacity Cesspool Closure (LCC) requirements for Pāhala outlines that an Environmental Information Document (EID) must be prepared by the County of Hawaii (County) Department of Environment (DEM) for US Environmental Protection Agency (EPA) approval by July 30, 2024 to meet Federal Environmental Review Requirements.

The Amended AOC §31.a. requires evaluation of four feasible options:

1. A package plant and new collection system (Alternative 1)
2. A package plant connected to the existing collection system (Alternative 2)
3. A maintenance contract model Individual Wastewater System (IWS) program (Alternative 3)
4. A County issued voucher program with an operating permit model IWS program (Alternative 4)

In addition, to meet the requirements of the EPA, this EID will include:

5. A No Action alternative.

Unlike the previous AOC, which was initiated on June 22, 2017, the Amended AOC no longer requires the WWTP provide secondary treatment of the sewage. As such, the IWS alternatives provide a method to close the two LCCs without providing a secondary treatment process. The package plant discussed below will provide the secondary treatment WWTP.

This document is intended to address State and Federal Environmental Review Requirements of the Amended AOC, including the feasible options and a No Action alternative under the direction of the County of Hawaii (County) Department of Environment (DEM). The environmental review is to be consistent with requirements of the National Environmental Policy Act (NEPA) 42 U.S.C. § et seq . and documented in the EID, including the necessary consultation compliance with Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act which will be updated for the Selected Alternative.

Supporting additional studies include Archaeological and Cultural documentation as well as Botanical / Faunal Surveys and regulatory coordination as part of this EID. It is understood, the County will coordinate with the State of Hawai'i Department of Health (DOH) to ensure timely review of studies, documents, and necessary concurrences by the State of Hawai'i State Historic Preservation Division (SHPD) and the US Fish and Wildlife Service.

Within 30 days of receiving written approval of the EID, the County shall submit an implementation plan for EPA approval. The Pāhala Implementation Plan shall include a schedule and completion dates for each step required to implement the selected alternative, provide wastewater services for 174 properties, and to close the Pāhala Community Cesspools no later than January 22, 2027.



## 1.2 Previous Environmental Documentation

In February 2020, the EPA and the DEM issued the *Final Environmental Assessment (EA) for the Pāhala Large Capacity Cesspool Replacement Project* which was published in the March 8, 2020 issue of the Environmental Review Program's *The Environmental Notice*. The Final EA discussed the proposed wastewater collection system that would be located within five County-owned streets in the western portion of the community (Maile, 'Ilima, Huapala, Hīnano, and Hala Streets) and three streets in the eastern portion of the community (Puahala, Pīkake, and Kamani Streets). The Final EA also discussed the County's process for identifying alternative sites for the WWTP and the selection of the preferred project site for the WWTP and effluent disposal system. A total of 9 alternative sites were identified and assessed before selecting the 14.9-acre project site as preferred alternative. As stated in the February 2020 Final EA, the development was to consist of a headworks and an odor control unit, an operations building, four lined aerated open lagoons, a subsurface flow constructed wetland to remove nitrogen and an adjacent disinfection system to remove pathogens and four slow-rate land treatment basins for disposal of the treated effluent. As set forth in the AOC dated June 22, 2017, the County was to provide an industry standard wastewater collection system and a secondary treatment and disposal facility.

The February 2020 Final EA found no significant impacts are anticipated from construction and use of the collection system and wastewater treatment and disposal facility. On February 24, 2020, by letter to the State of Hawaii Office of Environmental Quality Control (now Environmental Review Program) the County DEM issued a Finding of No Significant Impact Notice (Joint NEPA/HEPA) Pāhala Large Capacity Cesspool Replacement Project. The letter stated a Finding of No Significant Impact (FONSI) is determined for this project. The basis for this determination is set forth in the Final EA Section 8.1.1, which follows the significance criteria set forth in HAR, Title 11, Chapter 200, Section 12.

Subsequent to the findings of the Final EA/FONSI, as part of the engineering design work, additional geophysical/geotechnical investigations identified and confirmed a large subsurface lava tube extended under the proposed aerated lagoons. Further, the community had not been receptive to the aerated lagoon technology with large open lagoons and the potential for odors to affect the community.

Based on these considerations, the DEM has determined not to proceed with implementation of the wastewater treatment and disposal plant concept as previously proposed and to undertake analysis of the four (4) options / alternatives as set forth in the Amended AOC and the No Action alternative be evaluated for implementation in the Pāhala community.

The County intends to use funds either in part or in whole, from the Department of Health (DOH) Clean Water State Revolving Fund (CWSRF) program and American Rescue Plan Act (ARPA) for the Pāhala collection system and package plant project as was previously contemplated for the lagoon concept.. Under the CWSRF program, the project consists of two parts: Pāhala Large Capacity Cesspool Conversion and Pāhala Wastewater Collection System. The CWSRF Program was created by the federal Water Quality Act of 1987 and authorizes low interest loans for the construction of publicly owned wastewater treatment works. In 1988, the Hawai'i State Legislature passed Act 365, now Chapter 342D of the Hawai'i Revised Statutes (HRS), to establish the State Water Pollution Control Revolving Fund to receive the federal capitalization grant. HRS



342D, Part V (Water Pollution Control Financing), and, more specifically, HRS § 342D-81 set forth that the State's policy is to promote water pollution prevention and control, including the use of recycled water, by financing eligible projects consistent with applicable federal and state laws. The State Revolving Fund receives annual funding from EPA, which the State of Hawai'i DOH is then responsible for allocating among eligible projects.

### 1.3 Project Location

The community of Pāhala is located about 52 miles southwest of Hilo, in the Ka'ū District, Island of Hawai'i. The residential area of Pāhala is located west (mauka) of Māmalahoa Highway (State Route 11 or called Hawai'i Belt Road) and about 3.8 miles from the shoreline. Most of the community lies between 980 feet above mean sea level (msl) on the western end and approximately 800 feet above msl on the eastern end. Figure 1 shows the Pāhala location map.

Even though Ka'ū was one of the originally settled areas in the Hawaiian Islands, it remains a vast remote area. Only a fraction of a percent of the Ka'ū District has been developed with residential properties, and the remainder is largely used for agricultural purposes or remains undeveloped. The Ka'ū District covers about 922 square miles (approximately 590,000 acres), with over 80 miles of virtually undeveloped coastline. Nearly two-thirds of its total land area is in the Conservation District. The Ka'ū District consists of several communities, including the Pāhala community, which had a population of approximately 2,210 persons according to the US Census Bureau American Community Survey, 2021. The distance to the communities of Hilo and Kailua-Kona means that the Ka'ū District is relatively isolated from the major infrastructure systems found in those communities, including wastewater treatment and disposal facilities.

The Project Area includes approximately 200 parcels (in whole or in part) and portions of eight County of Hawai'i streets in Pāhala. The Proposed WWTP Site is located adjacent to the intersection of Maile Street and Māmalahoa Highway within a 14.9-acre portion of Tax Map Key (TMK): (3) 9-6-002-018. The Proposed Collection System Area will include five streets in the western portion of the community (Maile, 'Ilima, Huapala, Hinano, and Hala Streets) and three public streets in the eastern portion of the community (Puahala, Pikake, and Kamani Streets). The two LCCs slated for closure are located within TMKs (3)9-6-002:016 (por.), LCC 1, and 9-6-016:041 (por.), LCC 2.

### 1.4 Purpose and Need

A portion of the Pāhala community is serviced by a sewer system that was privately built, owned, and operated by the C. Brewer Company (C. Brewer). The C. Brewer built sewer system discharges sewage into two (2) large capacity "gang" cesspools. Around 2006, C. Brewer requested that the County construct and maintain a new and improved community sewer system. A County Council Resolution approved the C. Brewer request. In anticipation of C. Brewer's dissolution, C. Brewer proposed, and the County agreed, to enter into a formal agreement to not only construct and maintain a new and improved community sewer system but to assume ownership of the existing system including the LCC's by April 30, 2010.

As part of this agreement, for the majority of Pāhala and Nā'ālehu properties connected to the LCCs, C. Brewer committed to complete the line (called a lateral) between the residences and the property line at the edge of the public right-of-way adjacent to the new collection system. It was



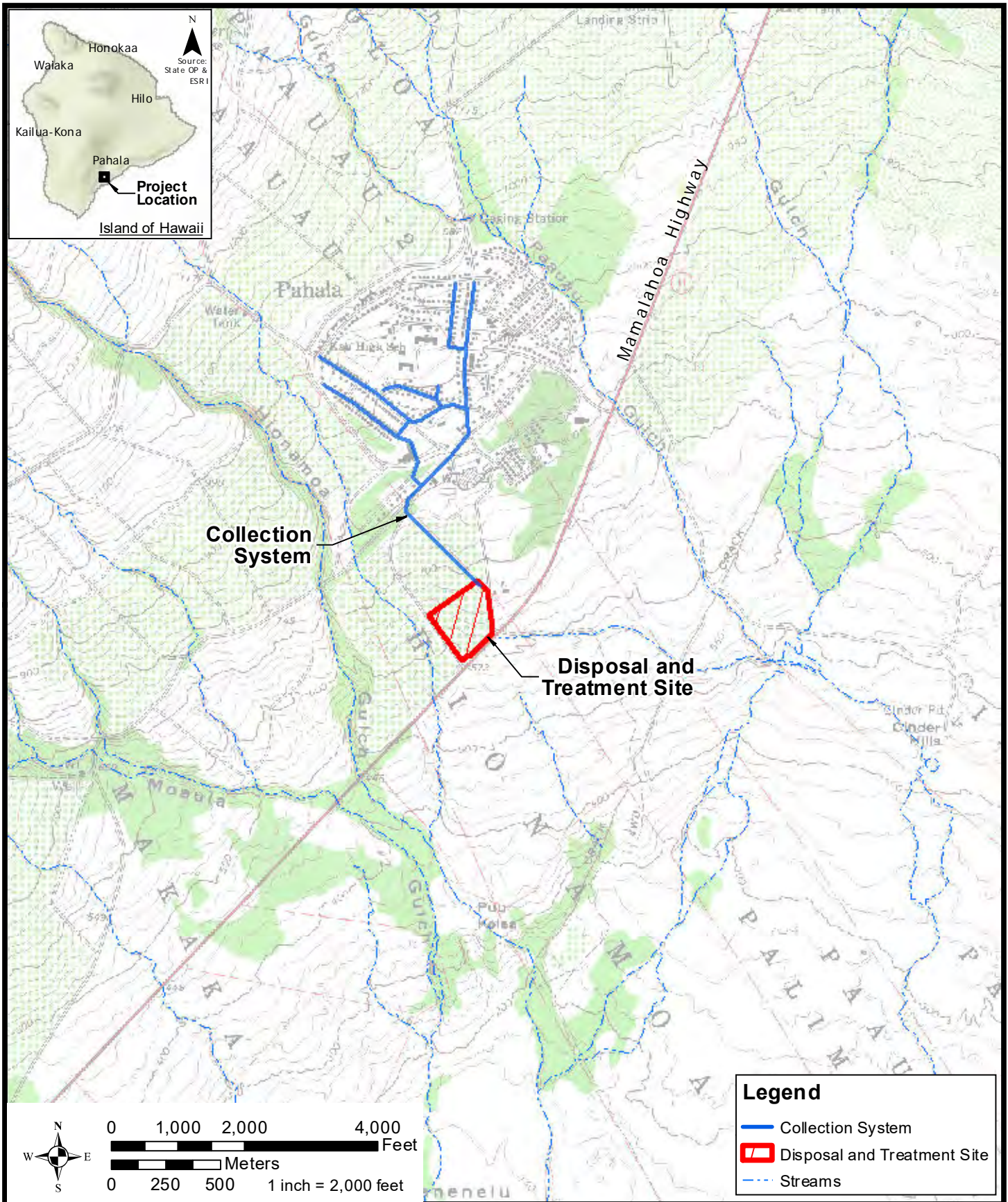


FIGURE 1  
PROJECT LOCATION MAP



agreed, if the County did not complete its portion of the work by April 30, 2010, the County would assume pending and unfinished obligations to connect the new laterals installed by C. Brewer to the residences and new collection system when complete. Thus, because that date has passed and the County has not completed installation of the new collection system, this project includes connecting these C. Brewer laterals, which may now need to be replaced, or installing private laterals for currently connected properties if authorized by the property owner and approved by the County Council.

In 1998, the U.S. Environmental Protection Agency (EPA), promulgated regulations, 40 Code of Federal Regulations (CFR) 144.14, that require the elimination of large capacity "gang" cesspools (LCCs). In 1999, EPA issued regulations under the Safe Drinking Water Act's (SDWA) Underground Injection Control (UIC) Program which prohibited the construction of new LCCs as of April 2000 and required the closure of all existing LCCs by April 5, 2005 (40 C.F.R. § 144.88). Under federal regulations, an LCC is a cesspool which serves multiple dwellings, or for non-residential facilities has the capacity to serve 20 or more persons per day.

In June 2017, EPA and the County entered into an Administrative Order on Consent (AOC) to close the LCCs serving the Pāhala community by June 2021. Options considered by the County to close the LCCs include construction of a new sewer collection system located within public right-of-way (ROW) and replacement of the existing LCCs with a wastewater treatment plant (WWTP) to address the wastewater treatment and disposal needs of the Pāhala community. The recently Amended AOC that was proposed as of February 14, 2024 requires the LCCs to be closed no later than January 22, 2027.

The County of Hawai'i and the EPA voluntarily entered into the initial AOC for the purpose of bringing the County into compliance with the requirements of the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300f, et seq.

EPA has determined that the County, as the current owner and/or operator of two (2) Large Capacity Cesspools ("LCCs") that serve approximately 109 private residences in the community of Pāhala and three (3) LCCs that serve approximately 164 private residences in the community of Nā'ālehu, violated and continues to violate the SDWA and its Underground Injection Control program requirements for existing LCCs.

A "cesspool" is a "drywell," which in turn is a "well," as those terms are defined in 40 C.F.R. § 144.3. LCCs include "multiple dwelling, community or regional cesspools, or other devices that receive sanitary wastes, containing human excreta, which have an open bottom and sometimes perforated sides.

Based on the above, the County has outlined that the purpose and need for the Proposed Action is to comply with the requirements and mandates of the SDWA and Amended AOC, and to ultimately close the two LCCs that serve Pāhala. Thus, purpose of this exercise is to evaluate, gather community input, and make an informed decision on selecting an option or alternative that will allow the County to close the LCCs, and provide a new, SDWA compliant solution for handling wastewater generated by the Pāhala Community. Closure of the LCCs will eliminate the disposal of untreated sewage into the subsurface which will serve County's mission to protect underground drinking water sources.



## 2. Project Description and Alternatives

### 2.1 Proposed Action

The Proposed Action is to construct facilities which would allow the County to close the 2 LCCs in Pāhala and thereby meet the compliance requirements of the Amended AOC and the applicable portions of the Clean Water Act. The Proposed Action would be achieved by any of the 4 alternatives set forth in the Amended AOC and described below.

#### 2.1.1 Alternative 1: Package Plant with New Collection System

Under this alternative, the County of Hawai'i would perform the following actions:

1. Acquire, or otherwise obtain the right to develop and use, a portion of the Tax Map Key: 9-6-002:018, a 42.5-acre parcel currently owned by B. P. Bishop Estate Trustees (commonly known as Kamehameha Schools), then construct a new secondary wastewater treatment and disposal facility within a 14.9-acre portion of the parcel; (See Figure 2)
2. Construct a wastewater collection system, primarily within the public right-of-way (ROW) and three segments within easements in the Pāhala community, to collect and convey sanitary waste from the currently connected and accessible (in accordance with Hawai'i County Code) properties to the new treatment and disposal facility;
3. Close and abandon two LCCs, according to DOH closure procedures; and
4. Abandon the existing wastewater collection system in place.

These actions will be applicable to Alternative 1 and Alternative 2.

#### Package Plant

The Amended AOC allows for construction of a Package Plant to treat sewage currently being disposed in the 2 LCCs. In addition, after treatment of the incoming sewage flows, disposal of the treated effluent using a subsurface irrigation system. The following sections describe the components and facilities which would comprise the package plant to treat the sewage and dispose the treated effluent which would be applicable to Alternative 1 and Alternative 2.

The April 2023, Preliminary Engineering Report (PER) provides the technical information related to analysis used by the County to select the package plant to be used to treat incoming sewage flows and a method to be used for disposal of effluent from the wastewater treatment plant (WWTP).

As described in the April 2023 PER, the package plant and effluent disposal method would be accommodated within the 14.9-acre Proposed WWTP Site located near the intersection of Maile Street and Māmalahoa Highway. For more information, see Appendix A.







The PER indicated accurately quantifying flow projections for the Pāhala community is necessary to design an appropriately sized wastewater treatment and disposal facility. The WWTP design will need to provide sufficient capacity for the existing parcels within the service area, including newly accessible parcels reflecting currently developed portions of the Pāhala community. This will allow the County to close the LCCs. The design will provide sufficient area within the WWTP site for future expansion of the package plant.

HAR Section 11-62-24(b) requires Counties to use their adopted wastewater flow standards to develop flow projections for WWTPs. Counties are to use the City and County of Honolulu (CCH) flow standards if they have not adopted their own standards. The County of Hawai'i has not adopted its own flow standards, so wastewater flow projections were developed using the current CCH (2017) wastewater standards. However, flow projections based the current wastewater standards based on urban Honolulu are likely overly conservative for rural communities like Pāhala.

The PER indicates the amount of wastewater generated within a residence will not exceed the amount of potable water used by the occupants. Therefore, potable water use records can be used to estimate wastewater generation rates within existing communities where no combined sewers are present. The County of Hawaii Department of Water Supply (DWS) provided potable water use records from January 2015 through June 2021 for the parcels located within the service area. Analysis of the potable water use records indicates that a 40,000 gpd monthly wastewater generation rate would reflect the current needs of the service area. Using a 2.5 peaking factor to estimate the maximum wastewater flow into the collection system results in a maximum wastewater flow of 100,000 gpd.

As stated in the PER, groundwater can infiltrate into wastewater collection systems during dry weather, increasing flows to the WWTP. The 2017 CCH standards specify a dry weather infiltration and inflow (I/I) allowance of 35 gallons per capita per day (gpcd). The previous CCH standards (dated 1993) specified a dry weather I/I allowance of 5 gpcd for properties located above the groundwater table. Through the County's experience at the Honokaa WWTP evaluating dry weather I/I for a rural collection system located in Hawai'i Island's well-drained geology, at elevations hundreds of feet above sea level and a significant distance from the shoreline, continued use of the 1993 standard for dry weather I/I is appropriate for Pahala and using the 2017 standard would be overly-conservative.

The 2017 CCH standards specify a wet weather I/I allowance of 3,000 gallons per acre per day (gpad). Due to larger parcels within the Pahala service area, wet weather I/I estimates are modified as permitted by the 2017 CCH standards. The modified flows are based on a 50-foot-wide corridor of sewer laterals from existing or assumed building foundations on the property. These assumptions significantly reduce the wet weather I/I estimates for the collection system.

The PER evaluated the effluent flow records at the County Honokaa WWTP to provide an appropriate analysis of the wet weather peaking factors expected at the Pahala facility. The results of the Honokaa WWTP effluent flow analysis have determined that a peak day wet weather peaking factor of 6.5 is recommended for the Pahala WWTP design.

HAR 11-62-23.1(i) requires the initiation of a facility planning process when the actual wastewater flows reach 75 percent of the design capacity of the WWTP, and implementation of the facility plan must be initiated when actual wastewater flows reach 90 percent of the design capacity. In



anticipation of future development within the Pāhala community, the PER recommend the WWTP design be rated to treat an average dry weather flow of 95,000 gpd (approximately twice the projected average dry weather flow) to avoid the potential of having to initiate a facility plan shortly after the project is constructed. Note, the biological processes in the mechanical WWTP will need to be sized to treat the peak day dry weather flow of 108,000 gpd, not the average dry weather flow.

Based on the above analysis the County applied to DOH for a variance from HAR Section 11-62-24(b). On January 26, 2002, the DOH granted the variance, which must be renewed every five years. The variance contains the following conditions:

1. As a minimum, the Pahala Wastewater Treatment Plant (WWTP) shall be designed using an average dry weather flow of 95,000 gallons per day.
2. Plans for the proposed Pahala WWTP shall be designed in accordance with applicable requirements of HAR Chapter 11-62 and be submitted to the Wastewater Branch for review and approval. In addition, the WWTP shall be approved in writing before it may be used.
3. There is no automatic renewal. Should the applicant wish to renew this variance application, the applicant must submit an Application for Variance for renewal, 180 days prior to expiration date.

The PER provides a description of the package treatment facility to be implemented at Pāhala. Note, package plants typically consist of pre-manufactured treatment facilities/components that may be configured to treat wastewater in small communities or on individual properties. The site plan for Pāhala WWTP would occupy a 14.9-acre area within an existing macadamia orchard and 1,500-foot long by 25-foot wide utility easement within the 42.5-acre parcel near the intersection of Maile Street and Māmalahoa Highway. About 4.0 acres of the 14.9-acre area would require removal of the existing macadamia nut orchard to accommodate the facilities needed to construct the package plant and related facilities. Thus, about 10.0+ acres would remain as the macadamia orchard which would be available subsurface disposal of the treated effluent. A security fence would surround the 14.9-acre site. The security fence would not include barbed wire stringers. Figure 3 shows the site plan for the WWTP.

The 4.0-acre package plant includes the headworks, grit drying bed, potable water tank, utility or operations building which includes a blower room, an emergency generator room, electrical room with a monitor control center, a maintenance and storage room, and restroom, an above ground fuel storage tank, and an irrigation control tank. Figure 4 shows the operations building floor plan.

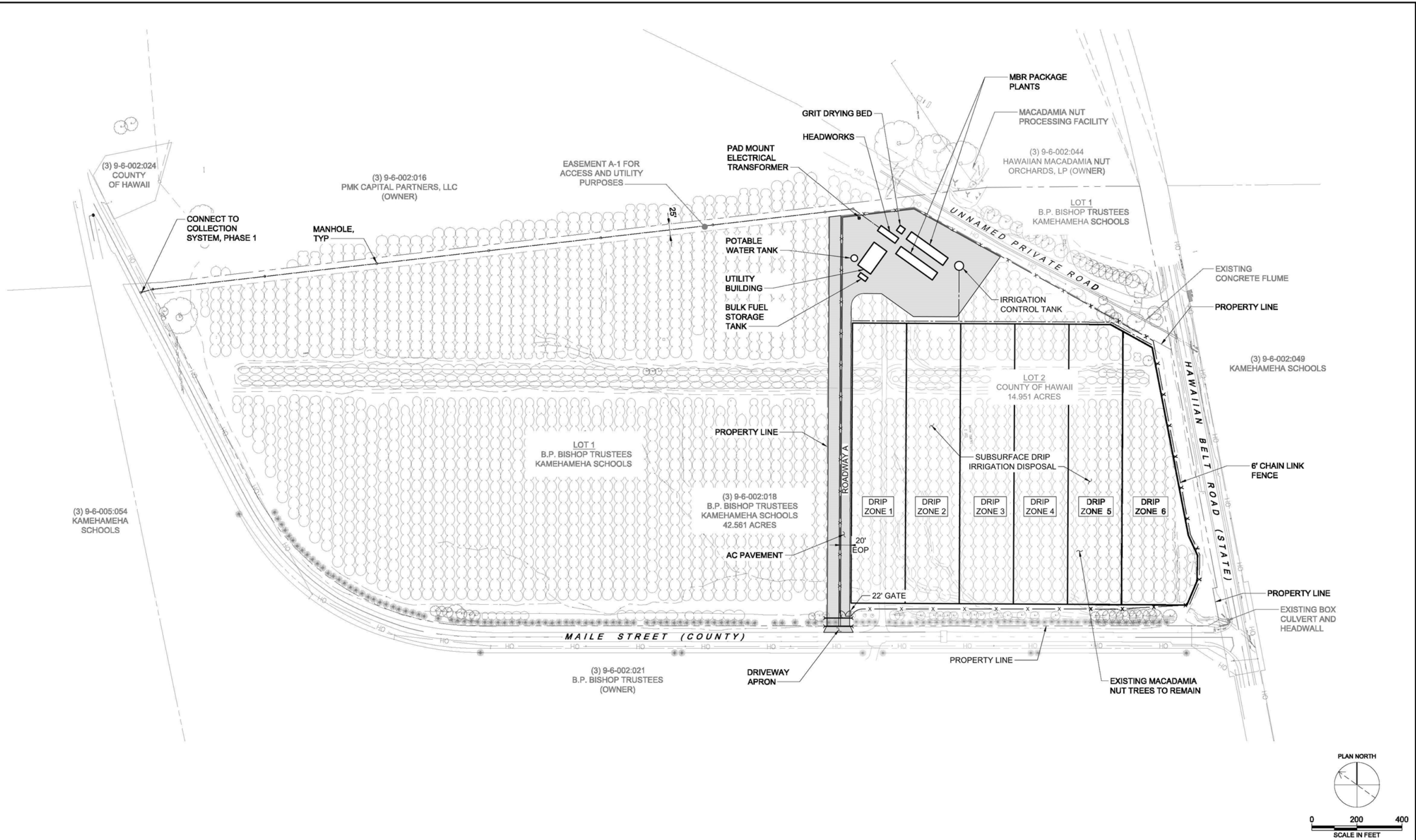
As discussed below, the Pāhala package plant will include preliminary treatment, odor control and secondary treatment, and disposal of the treated effluent. The preliminary treatment system will include influent flow measurement, influent sampling, screening and grit removal.

Influent flow measurement is recommended in the PER to allow assessment of flows and loads to the biological treatment process, and to assess the biological treatment process performance.



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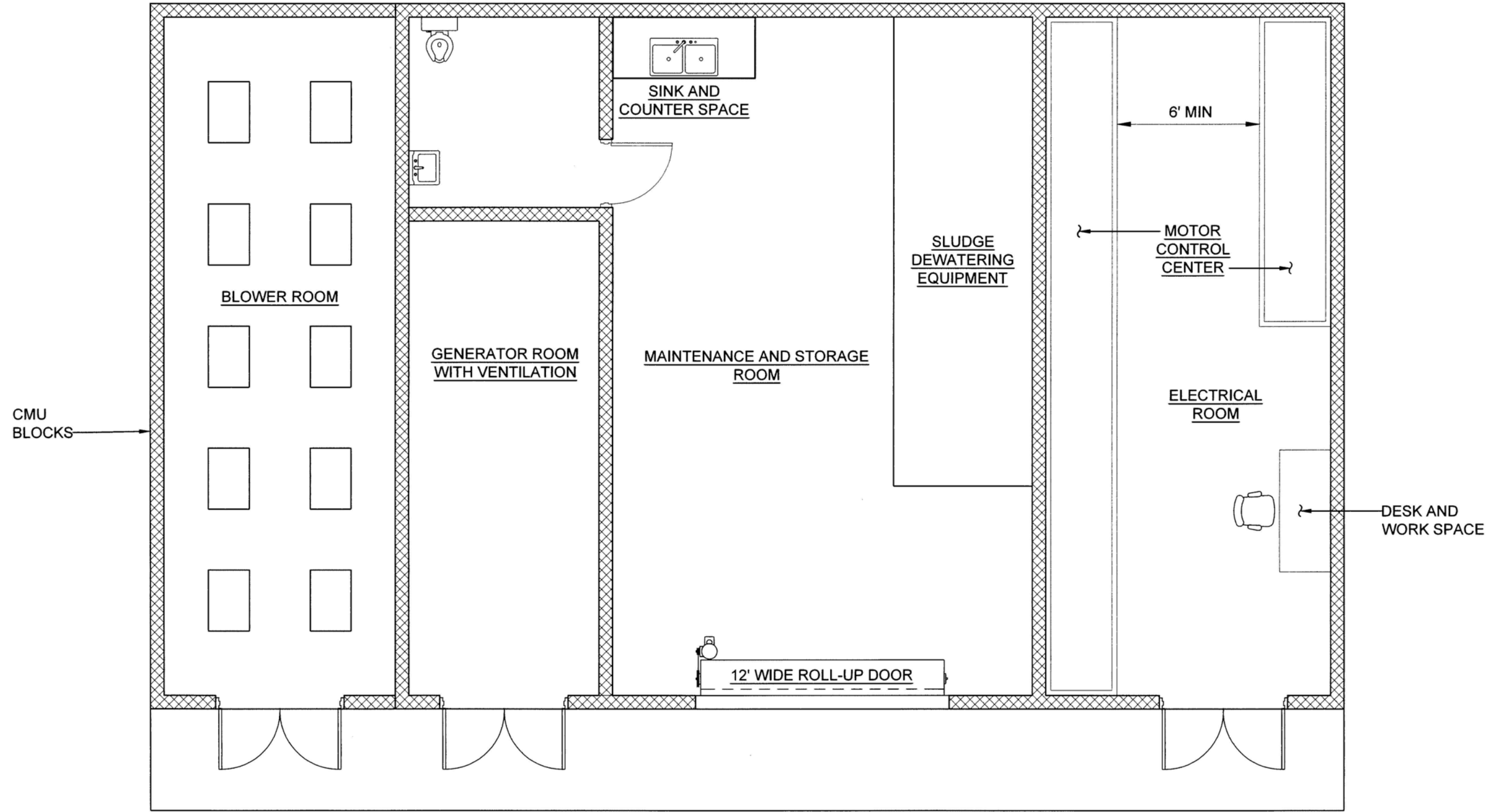


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PAHALA WASTEWATER TREATMENT PLANT  
 OVERALL SITE PLAN

FIGURE  
 3

Path: M:\Projects\Projects\Hawaii, County Of (HI)\150440 COH Pahala WWTP\_CAD\0-PROJECT\FIGURES  
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PAHALA WASTEWATER TREATMENT PLANT  
OPERATIONS BUILDING PRELIMINARY FLOOR PLAN

FIGURE  
4

A Parshall flume will be provided upstream of the screening system to continuously record influent flow rates.

An automatic refrigerated composite sampler is recommended to allow influent composite samples to be collected. Influent composite samples, when combined with influent flow measurement, can be used to calculate influent mass loading rates to the WWTP to assess the treatment performance and to optimize aeration rates in the biological treatment process.

Screening is recommended to protect the downstream system operations from large objects, debris, wipes, and rags that can be present in wastewater. The industry trend is towards finer screening systems that remove greater amounts of debris from the waste stream; screens with 6-millimeter (mm) (1/4-inch) openings are frequently used for activated sludge treatment systems. Finer screens are used upstream of membrane bioreactors to remove hair that can foul the membranes.

The PER recommended an in-channel cylindrical screen for this installation. The in-channel cylindrical screen combines screening, screenings washing, dewatering, compacting, and bagging/disposal within a single unit as shown in Figure 5. For this installation, the headworks will include one in-channel cylindrical screen, plus a bypass channel with manually cleaned bar rack.

The PER stated, removal of grit is very important to help prevent wear to downstream equipment, costly service interruptions and repair. Grit is comprised of particles that are heavier than the organic biodegradable matter in wastewater. Grit particles can consist of sand, gravel, pebbles, silt, cinders, ground bone, eggshells, coffee grounds, and other materials. Grit in the wastewater collection and treatment system causes abrasive wear to mechanical equipment, piping, and appurtenances. Grit can also form deposits in pipelines, channels, and tanks, which reduces hydraulic capacity and can damage equipment.



Figure 5: In-Channel Cylindrical Screen  
Source: PER, 2023



The PER recommended use of aerated grit chambers which are tanks that function specifically to remove inorganic solids from the wastewater stream as shown in Figure 6. Aerated grit tanks are designed to induce sufficient vertical velocity to separate organic and inorganic solids. In theory, inorganic solids have a higher specific gravity than organic solids, and therefore require higher vertical velocities to keep them in suspension.

Air diffusers placed near one longitudinal tank wall induce a roll in the contents of the grit tank. This roll creates maximum velocities near the walls and lower velocities at the surface and bottom of the tank. The lower transverse horizontal velocities allow inorganic particles to settle out and be transported to the grit hopper by shear-induced currents.

The aerated grit chamber design is based on providing sufficient hydraulic detention time during peak wet weather flow conditions. The PER stated it is necessary to provide at least 10 minutes of detention time to achieve satisfactory grit removal.

Aerated grit tanks can provide excellent grit removal with minimal headloss, but the chambers themselves require a larger footprint than induced vortex systems. Proper operation of aerated grit tanks can be difficult under varying hydraulic loads due to the need to make fine adjustments to the air diffusers.

The headworks is a notorious location for foul odor at a wastewater treatment plant. This odor is caused by hydrogen sulfide ( $H_2S$ ), which is formed under anaerobic conditions found in the wastewater collection system. Due to  $H_2S$  low solubility in wastewater, when there is an excessive concentration of  $H_2S$  or if there is turbulence,  $H_2S$  gas escapes into the atmosphere. This release produces a distinct rotten egg smell. In addition to  $H_2S$ , there are other foul odorous compounds that can be released from wastewater, such as ammonia, amines, diamines, mercaptans, skatole, and organic sulfides.

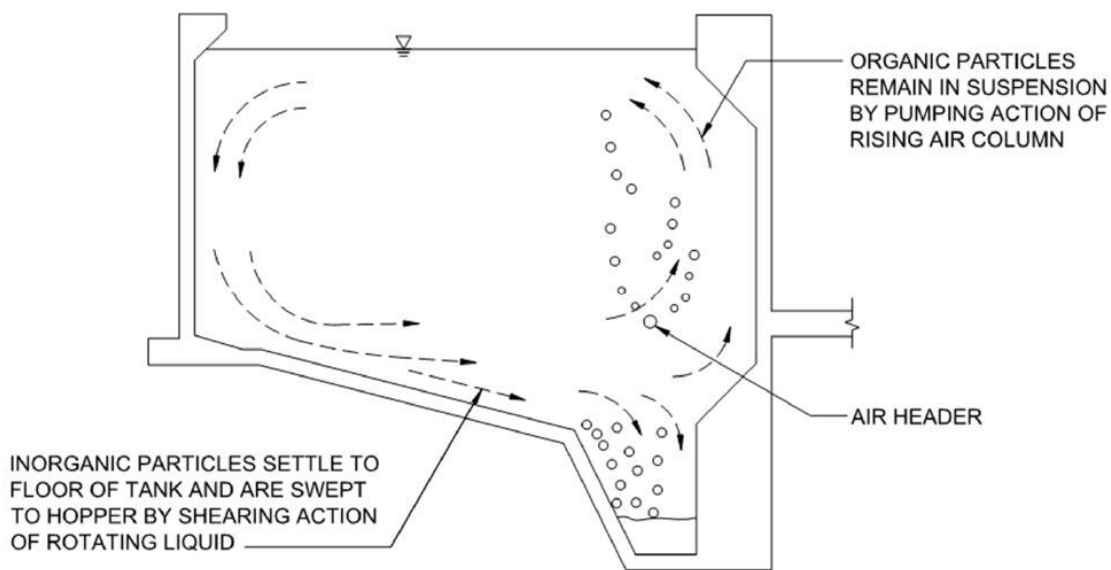


Figure 6: Aerated Grit Chamber  
Source: PER, 2023



The PER recommended a granular activated carbon (GAC) scrubber be used at the Pahala WWTP headworks as shown in Figure 7. A GAC scrubber passes odorous air through a bed of activated carbon, which absorbs the odorous constituents within the pore spaces of the carbon.

Chemical oxidation or reduction of some compounds can also occur. As pore spaces become occupied, efficiency degrades, and the carbon must be replaced or regenerated. Carbon is most effective on higher molecular weight molecules such as the organic sulfur compounds, which makes it the technology of choice. Package GAC scrubbers are available for small headworks and vessels can be situated vertically, horizontally or radially to optimize footprints and reduce structure elevation profiles. The County currently operates GAC scrubbers at other facilities and purchases the GAC media in bulk, which could reduce costs to the County.

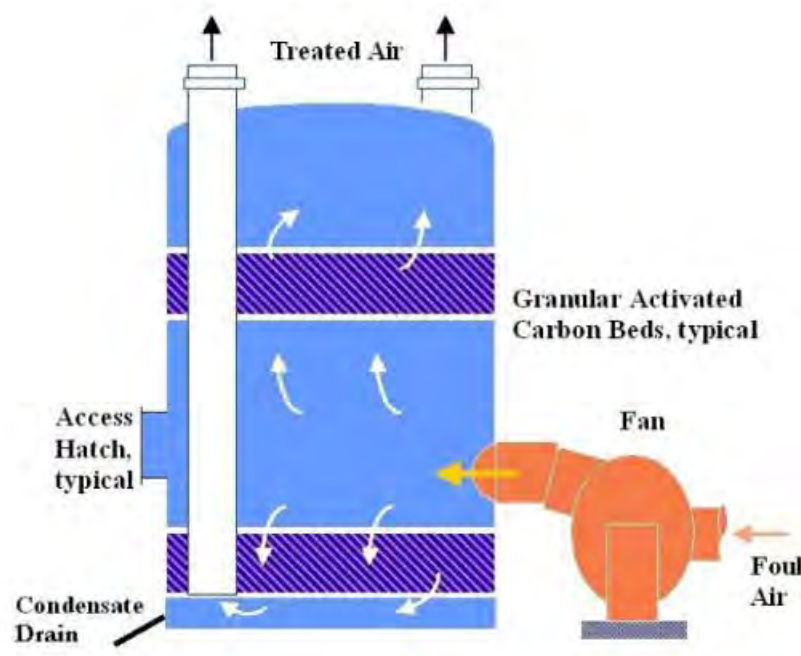


Figure 7: Granular Activated Carbon Scrubber  
Source: PER, 2023

Secondary treatment process provides 5-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS) and nutrient removal via biological treatment. The PER provided descriptions of various secondary treatment options including advantages, disadvantages and applicability to the Pahala WWTP. Further, the treatment options were screened to identify technologies for further evaluation. Based on the analysis, the PER selected membrane bioreactor (MBR), activated sludge with anoxic selector, and recirculating gravel filter for use as the Pāhala WWTP.

A membrane bioreactor (MBR) has the smallest footprint of the various biological treatment systems available and provides the highest quality effluent. An MBR basically combines an aeration basin with membrane filtration, eliminating the need for tertiary treatment if a very high-quality effluent is desired for water reuse purposes.



Membranes provide an absolute barrier to large particles; total suspended solids (TSS) concentrations of the effluent (also known as “filtrate”) are typically less than 1 mg/L. Effluent from an MBR process can meet stringent water recycling turbidity requirements without an additional filtration process.

The main difference between MBRs and other biological treatment technologies is the method of separating the bacteria from the clean water. MBRs have thin membranes with many thousands of micro-perforations. Depending on the manufacturer, these perforations are 0.04 to 0.2 microns (4 to 20 hundred-thousandths of a millimeter) in diameter, too small for the passage of most microorganisms or other particles present in the wastewater, but large enough to allow the passage of water molecules.

The MBR facility has a small footprint and the process would produce a high quality effluent. However, an MBR facility has a relatively high overall capital cost, operation and maintenance cost and lifecycle costs. Notwithstanding these considerations, the County will use an MBR package plant at Pāhala.

The proposed effluent management system (subsurface drip irrigation disposal) does not require a disinfection process to protect human health and the environment because the treated effluent is dispersed below the ground surface. However, periodic maintenance chlorination of the subsurface drip system will be required to reduce biofilm fouling within the drip lines.

Calcium hypochlorite is the solid form of hypochlorite used for disinfection. It can be found as a powder, granules, pellets, or as tablets in concentrations up to 70 percent. Calcium hypochlorite will degrade in strength at a rate of 3 to 5 percent per year. Once applied to the wastewater, the chemistry is similar to that for sodium hypochlorite. Calcium hypochlorite decomposes in an exothermic reaction if exposed to moisture. Figure 8 shows a typical calcium hypochlorite feed system.

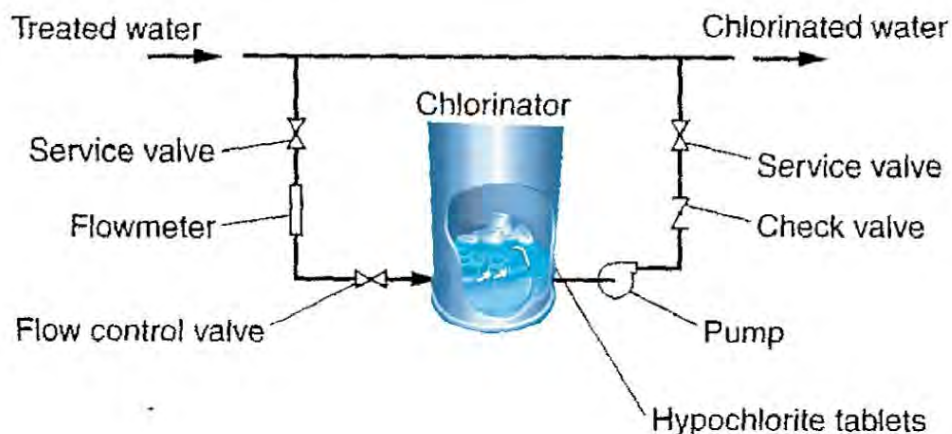


Figure 8: Calcium Hypochlorite Feed System  
Source: PER, 2023

Solid calcium hypochlorite is typically applied directly to wastewater at very small WWTPs due to its ease of use. Specifically, solid calcium hypochlorite is widely available in concentrated form





as powder, pellets, or tablets – consequently, transportation and storage of solid calcium hypochlorite disinfectant is optimal for small WWTPs such as at Pāhala. Moreover, the County utilizes solid calcium hypochlorite as a disinfectant at other existing treatment plants, so existing supply chain logistics may be leveraged.

The PER indicates the above processes will require dewatering of the wastewater solids. Use of screw press is shown in the PER. The thickened sludge conditioned with a polymer is introduced into the screw press at the head box end and the mixture is conveyed to the outlet end by a rotating screw. As the material is conveyed along the length of the press it is squeezed between the tapered screw and the screen drum. The dewatered solids exit the press at discharge end and fall down the discharge box. The liquid that was forced out through the screen is returned to the liquid treatment process.

The dewatered solids, grit and screening would need to be trucked to the West Hawai'i Landfill an estimated once to twice a month. The trucks would use the WWTP access road for access onto Maile Street above the intersection with Māmalahoa Highway. The trucks could use Highway to reach the landfill, which means the trucks would not need to travel into the Pāhala community to reach Māmalahoa Highway.

Disposal of the treated effluent is an important consideration at any WWTP. Although the PER discusses ocean discharge, use of injection wells, water recycling and slow rate land treatment. The methods were not deemed feasible due to regulatory issues and high costs, including the need to remove and dispose of all the macadamia trees growing on the 14.9-acre site.

Based on the selected MBR treatment process, use of subsurface drip irrigation of the existing macadamia orchard for disposal of the treated effluent, as described below, will be used at Pāhala.

The PER indicated the results of the effluent management investigation have determined that a subsurface drip irrigation system as the recommended method of effluent disposal for the Pahala WTP.

This concept would retain the existing site topography along with the macadamia nut tree orchard and use subsurface drip irrigation technology to apply the effluent to the existing macadamia nut trees within the effluent disposal area. The use of subsurface drip irrigation technology to disperse effluent at the site will allow the County to retain the existing mature macadamia nut trees, and will significantly reduce the amount of clearing, grubbing, and grading required to construct the facility. In addition, retaining the existing mature orchard is expected to effectively screen or block views of the facility from both Maile Street and Māmalahoa Highway.

Drip irrigation technology has evolved to the point where non-clog emitters are available for subsurface applications of effluent. Non-clog subsurface emitters decrease the potential for the irrigation components to be clogged by roots. Drip tubing with integral emitters is buried 6 to 9 inches below ground. Effluent emitters are typically designed to operate at a flow rate of 1 gallon per hour (gph) and are typically spaced every 2 feet along a drip line. Pressure compensating drip systems typically operate under pressures ranging from 10 to 45 pounds per square inch (psi). Figure 9 shows the subsurface drip concept.



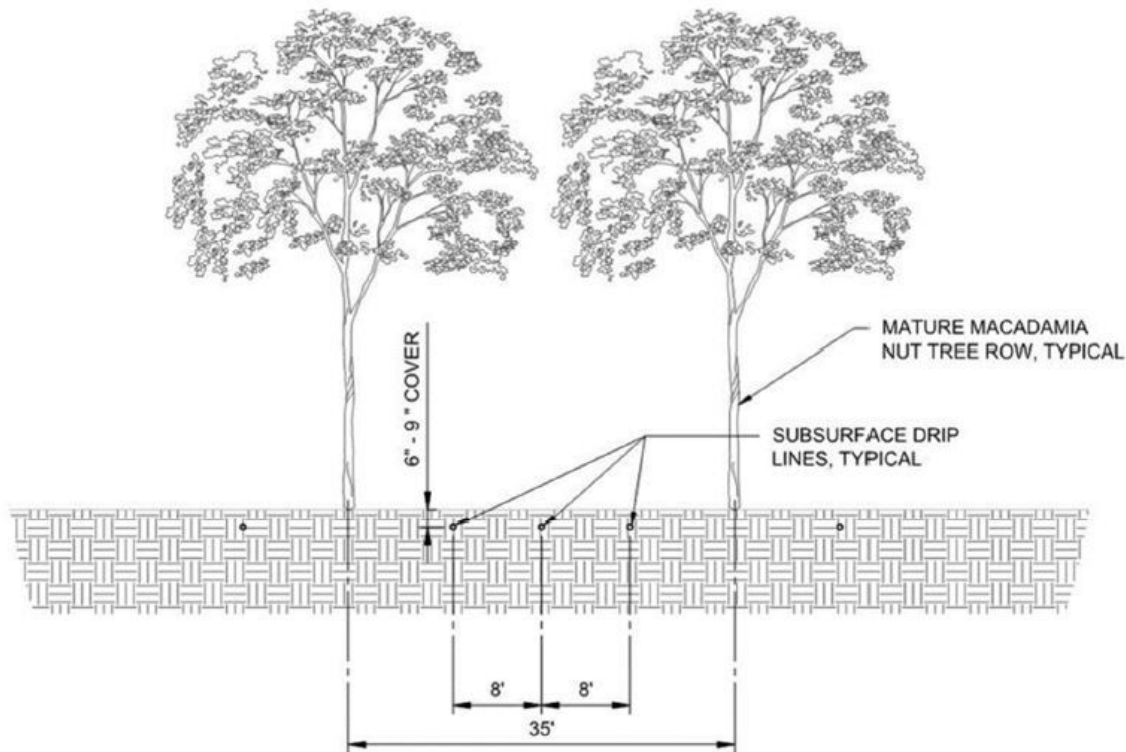


Figure 9: Subsurface Drip Concept for Pāhala  
Source: PER, 2023

The effluent disposal system will be sized to handle the peak day wet weather flow of 312,000 gpd. An irrigation equalization and control tank are proposed to equalize higher peak flows and to allow discrete dosing of the orchard in irrigation zones; constant application of water would be detrimental to the health of the trees.

HAR 11-62 requires a fully redundant subsurface disposal system. The design criteria are based on providing a subsurface drip system that is two times larger than needed in order to satisfy the HAR 11-62 requirement for redundancy. The drip system will be divided into two separate systems so that the peak day wet weather flow can be disposed on the site using one system while the second system is out of service for maintenance.

The subsurface drip lines are to be located between the existing row of trees and spaced to disperse effluent evenly throughout the orchard. During high flow conditions the irrigation control system will open multiple irrigation zones to accommodate the disposal needs. Additional drip lines will need to be added when the WWTP capacity is expanded. The minimum spacing between drip lines is 2 feet, so there will be sufficient space between the initial drip lines to add additional drip lines as part of future expansion project(s).

The PER conducted water balance and nutrient balance to determine the expected nitrogen use by the macadamia nut orchard. The analysis showed the orchard of mature macadamia nut trees is expected to use up to 400 lbs. of nitrogen per acre per year (University of Hawaii Agricultural Experiment Station, January 1959). The effluent will supply approximately 289 lbs./acre/year of



total nitrogen, assuming an effluent concentration of 10 mg/L. Although the nitrogen uptake of the orchard is expected to be greater than the total mass of nitrogen applied by the effluent, the predominant nitrogen species in the effluent is expected to be nitrate, which is soluble and readily transportable through the soil profile. The trees will only be able to use the nitrate contained within water that is transpired. The percolate volume is expected to contain approximately 8.5 mg/L of nitrogen as nitrate, because soil denitrification losses of 15 percent can be expected. Therefore, the land treatment system is expected to remove approximately 21 percent of the total nitrogen applied to the site from the WWTP effluent.

The PER stated drip irrigation technology has evolved to the point where non-clog emitters are available for subsurface applications of effluent. Non-clog subsurface emitters decrease the potential for the irrigation components to be clogged by roots. Tubing with integral emitters is buried 6 to 9 inches below ground. Effluent emitters are typically designed to operate at a flow rate of 1 gallon per hour (gph) and are typically spaced every 2 feet along a drip line. Pressure compensating drip systems typically operate under pressures ranging from 10 to 45 pounds per square inch (psi).

Subsurface drip irrigation technology incurs greater operation and maintenance cost than a surface irrigation system. The County will need to periodically flush the drip lines to remove debris. As described below, a significant number of drip lines will be necessary to accommodate peak flow rates. In addition, periodic chlorination will be required to remove biological growth from the drip lines. These operations and maintenance tasks will need to be completed on a regular schedule, because the drip system will be buried and not readily accessible or observable. During periods of dry soil conditions, the County will need to inspect the orchard for patches of wet soil that would indicate a localized failure that requires repair. Flow and pressure monitoring will also be useful tools for validating the status of the subsurface drip system. The land treatment area would be divided into multiple irrigation zones, allowing a zone to be taken out of service for maintenance purposes. A fence will be constructed around the site to deter entry by humans and ungulates.

## Collection System

Under Alternative 1, the County would construct a new sewer collection system in the Pāhala community to replace the existing system of substandard gravity lines that convey sewage to the two LCCs and connect it to the proposed wastewater treatment and disposal facility. The new collection system would consist of a total of approximately 11,500 linear feet (LF) (2.2 miles) of corrosion-resistant polyvinyl chloride (PVC) piping almost entirely within the public ROW of eight public streets. This includes five streets in the western portion of the community (Maile, 'Ilima, Huapala, Hīnano, and Hala Streets) and three public streets in the eastern portion of the community (Puahala, Pīkake, and Kamani Streets). The new collection system would service a total of 174 lots (109 existing or previously connected lots, plus 65 newly accessible lots as described later in this subsection). The specific number being dependent on the results of the topographic survey and the design of the collection system that will convey sewage to the new wastewater treatment and disposal facility.

Similar to the treatment and disposal facility, the collection system would be designed not to preclude expansion to meet the requirements of Policy 120 of the *Ka'ū Community Development Plan*.



The County would construct the collection system in two phases to ensure that residential units can maintain access to the sewer system at all times. Phase 1 would construct segments totaling approximately 1,400 LF of 12-inch line and 700 LF of 8-inch line to divert sewage flows from the existing LCC collection system to the new treatment and disposal facility and extend laterals to individual properties making them accessible to this portion of the new collection system. Specifically, Phase 1 would include the following:

1. A new 1,400-LF, 12-inch diameter line within the Maile Street right-of-way (ROW) to intercept flows from the existing system serving 'Ilima, Huapala, Hīnano, and Hala Streets and convey sewage to the new wastewater treatment and disposal facility. This new line would be sized to accommodate the future flows from the entire community.
2. A new 700-LF, 8-inch diameter line partially within the Pīkake Street ROW that would connect the existing collection system above LCC 2 to the new line on Maile Street described above. A 350-LF portion of this line would run through an easement on a privately owned parcel (TMK 9-6-005:044) to access Maile Street from Huapala Street.
3. Phase 2 would complete the new collection system by constructing segments totaling approximately 9,400 LF of 8-inch line throughout Pāhala, installing pumps on selected properties, making individual properties accessible to the new collection system and re-connecting individual properties currently serviced by the existing collection system to the new collection system. These main lines would range from a 14-inch line on Pīkake Street to mostly 8-inch lines on the remaining streets and would run primarily within County ROWs for ease of access. However, an approximately 1,100-LF segment would follow the existing system alignment in the industrial area between 'Ilima and Maile Streets. The property (TMK 9-6-005:036) is owned by Edmund Olsen and leased to M L Macadamia Orchards. The County would obtain an easement for the work proposed within this area. Construction of the new collection system would involve temporary impacts within the public ROWs of eight streets.

The streets within the community are under the jurisdiction of the County, with the exception of a privately owned portion of Pīkake Street for which the County would obtain an easement. The streets have been improved with asphaltic concrete (AC) surfaces approximately 22 to 24 feet wide (plus shoulders), and do not have curbs or gutters. Most of the streets have two travel lanes and have overhead utility poles located outside the travel lanes. Residential lots along the streets have driveways with direct access to the travel lanes. Most shoulder areas have been improved or consist of grassy swales.

Typical sewer trenches would be about 3 feet wide and at least 6 feet deep to allow the placement of the lines to meet County standards. The existing pavement would be sawcut, the trench would be excavated (which could require removal of bedrock), the PVC pipe installed, and then the trench would be backfilled and compacted. The cut portion of the AC pavement would then be resurfaced with new AC material. Additional resurfacing may be required where trenches parallel the streets. The collection system would be installed with the proper horizontal and vertical clearances from existing water system facilities and concrete jacketing at waterline crossings, where necessary, as recommended by the County of Hawai'i DWS Water System Standards.



4. In April 2007, the County entered into an agreement with C. Brewer to eliminate LCCs from the existing community sewer systems and connect properties discharging to them to new County collection, treatment, and disposal system. Once the actual costs are determined, County Council action is still required to approve the expenditure of funds on private property for existing connections.

All accessible properties would be required to connect to the new wastewater collection system in accordance with Hawai'i County Code, HCC, § 21-5. The new collection system would be subject to HCC 21 (Sewers). Specifically, HCC § 21-5 states the following:

*"(a) Owners of all dwellings, buildings, or properties used for human occupancy, employment, recreation, or other purposes, which are accessible to a sewer are required at their expense to connect directly with the public sewer within 180 days after date of official notice.*

*(b) If, due to rock, wastewater collection system depth, or other construction problems, a building cannot be practically served, the owner shall install, operate and maintain a residential pumping station.*

*(c) The director may grant a variance/exemption of the foregoing connection requirements to owners of single-family dwellings existing at the time of installation of the public wastewater system, if the following is found:*

*(1) There are special or unusual circumstances applying to the subject real property which exist that render the ability to connect to a wastewater system an extreme physical or financial hardship; and*

*(2) There are no other reasonable alternatives; and*

*(3) The variance is consistent with the general purpose of the chapter and will not be materially detrimental to public health, safety, or welfare."*

Accordingly, additional newly accessible lots in Pāhala would be required to connect to the new wastewater collection system after it becomes operational. These other lots are near the existing service area and are presently connected to individual wastewater systems or cesspools. The design of the new collection system would include stub-outs to accommodate the eventual connection of these newly accessible lots. However, the respective lot owners would be responsible for the design and completion of these connections and for the proper closure of their individual wastewater systems.

The State of Hawai'i Department of Education (DOE) would connect the Ka'ū High School and Pāhala Elementary School and the recently completed Ka'ū Gymnasium and Shelter to the new collection system. As stated in Section 4.7.2 of the County of Hawai'i, Department of Public Works, *Final Environmental Assessment and Finding of No Significant Impact, Ka'ū Gym and Shelter, Pāhala, Ka'ū District*, April 2012: "In accordance with Section 21-5, Hawai'i County Code (HCC), Ka'ū High and Pāhala Elementary School, including the Ka'ū District Gym and Shelter, will be required to connect to the County sewer system when access becomes available. The State Department of Education will be responsible for coordinating and constructing the connection to the sewer system via a branch main on Hala Street and properly closing their onsite system.



### 2.1.2 Alternative 2: Package Plant with Existing Collection System

Alternative 2 would construct a new package plant and effluent disposal system, as previously described, and then connect the existing collection system to the package plant. (The package plant would be the same as previously described in Alternative 1.)

#### Existing Collection System

In 2004, C. Brewer Company contracted M&E Pacific to perform a sewer system evaluation for the town of Pāhala. The scope of the study was to investigate and evaluate the physical condition of the system, compliance with County sewer standards and identify problems associated with the existing Pāhala system. The findings were documented in *The Ka'ū Sewer System Evaluation* dated December 2004. Figure 10 shows the existing collection system.

The 2004 study stated, it was estimated that the existing sewer system was built around the 1940s, or over 80+ years ago. The system consists mainly of cast iron pipes and the manholes of square concrete boxes. The 2004 study found the residential laterals connect to 4-inch lines which discharge into 6-inch lines that transmit the sewage to the LCCs. The system has 3 to 5 manholes on Maile Street and Pikake Street and one on the commercial parcel on Pikake Street. The system does not contain pump stations and does not collect storm water.

The 2004 study indicates the Pāhala community sewer system consists of about 3,058 linear feet of 6-inch diameter and 10,000 linear feet of 4-inch diameter pipelines. The house laterals in Pāhala connect to the 4-inch lines which discharge into the 6-inch lines that transmit the untreated sewage to the LCCs. The relatively steep grades of the residential subdivision mean the lines are laid at shallow depths. Further, the results of the investigation determined that the existing sewer lines and manholes do not conform to the County sewer design standards.

As part of the investigation, a smoke test was conducted of the existing system to determine the location of any fractures, open joints, holes and sources of inflow. Smoke testing involves the blowing of smoke into the sewers normally through a manhole or other accessible junction. The smoke used is a non-toxic substance that will not harm humans, pets, food, plants or other material goods. It will be visible from manhole covers, roof vents and from the ground where sewer line tweaks or defects may exist. The purpose of the smoke is to assist in locating pipe defects and the entry points of storm and other surface waters into the sewers. Residents of the specific area for testing were notified via a public notice at least one week prior to the actual testing.

The results of a smoke test performed during the 2004 sewer system evaluation identified 14 locations of line breaks and/or pipe defects and 7 household units with defective sewer vents. Also, there is evidence of wastewater spill occurring from a manhole located directly downstream of the commercial property on Pikake Street. The manhole contained some accumulation of debris in the well and evidence of wastewater overflow on the adjacent ground by the existence of particles of tissue and other solids on the ground surrounding the manhole. The owner of the residential lot directly downstream of the commercial property confirmed the occasional overflow of wastewater from the subject manhole.

The 2004 sewer system report did not discuss any subsequent work related to repairs or other corrections to the reported findings.



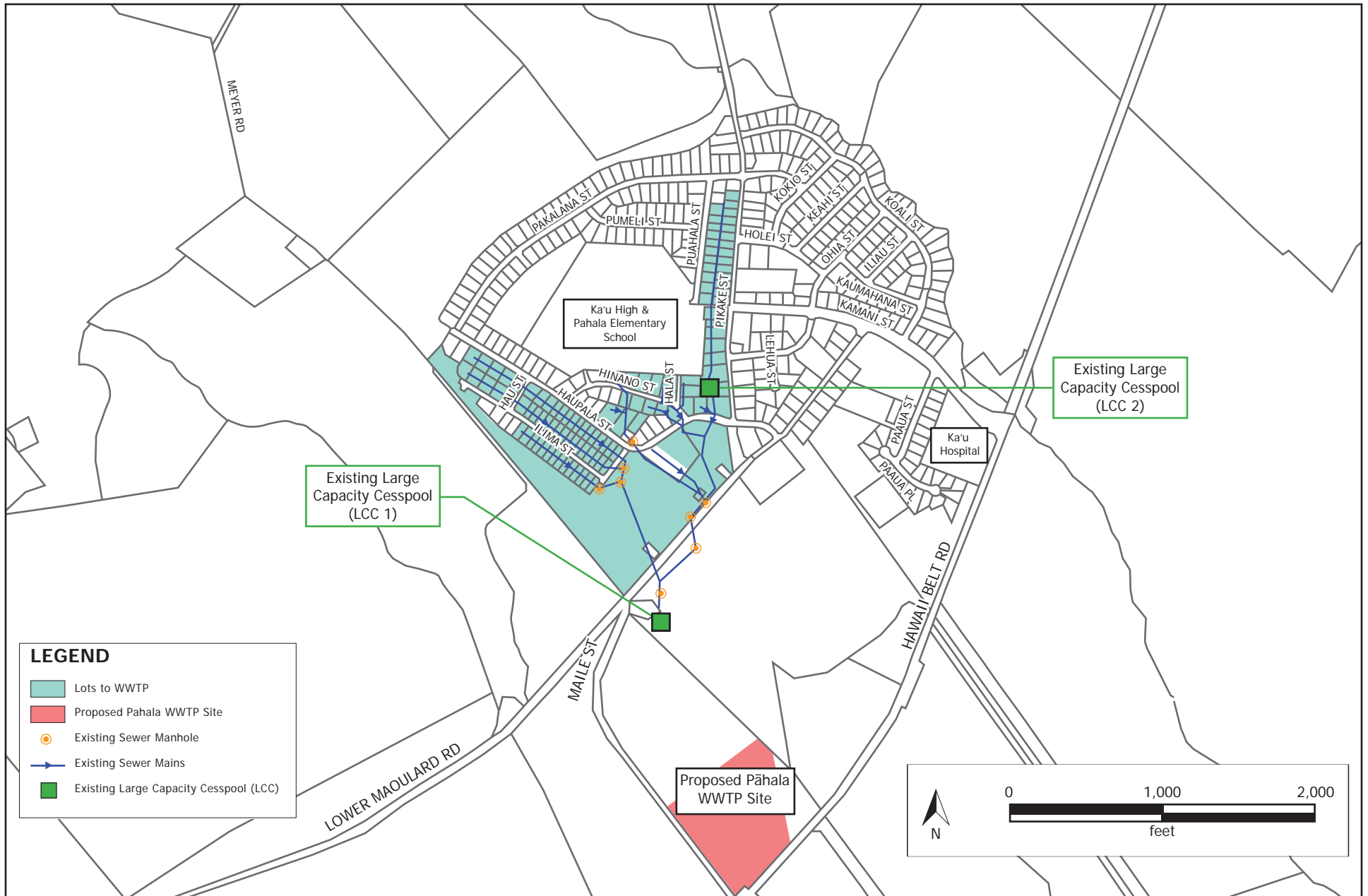


FIGURE 10

# ALTERNATIVE 2 SITE PLAN

PĀHALA LARGE CAPACITY CESSPOOL CLOSURE PROJECT

Nearly 20 years have passed since the 2004 study was completed. In order to reuse the existing collection system in the future, an updated condition assessment study is recommended to further identify system deficiencies. Substantial improvements will likely be necessary due to the age of the system. Also, reusing the existing collection system would require constructing the Phase 1 collection system project described above to tie into the WWTP and close the LCCs.

The April 2023 PER, indicated the existing sewer system is over 80 years old, long surpassing its expected lifespan of the system. Further, if chosen to be reused, the system will require extensive repair and rehabilitation.

The April 2023 PER stated, although reusing the existing collection system appears to incur lower life-cycle costs than the other alternatives, reusing the system is not recommended for implementation. The advanced age of the existing collection system means the County would incur substantial financial and other risks:

- The pipes are at the end of their useful service life, and catastrophic failures are likely to increase in frequency, creating increased risk to public health and the environment.
- Most of the system is located in backyards within easements, making it difficult to access and maintain the lines.
- The option does not address the AOC requirement to connect additional properties, which are currently not connected to the collection system, to the WWTP.
- System expansion to accommodate sewer flows in additional areas of the town (in accordance with the Kau Community Development Plan) would not be feasible.

### **2.1.3 Alternative 3 – Individual Wastewater System-Maintenance Contract Model**

Hawai'i Revised Statutes, Title 14, Taxation, Chapter 235, Income Tax Law, § 235-16.5 defines a septic system as an IWS that typically consists of a septic tank, piping, and a drainage field where there is natural biological decontamination as wastewater discharged into the system is filtered through soil.

The April 2023 PER, stated the State DOH Wastewater Branch is responsible for regulating IWS systems. The Amended AOC sets forth that the County Hawai'i must administer a more active management strategy than is typically found in Hawai'i IWS. The Amended AOC states either a Model 2 (Maintenance Contract) or a Model 3 (Operating Permit) must be used IWS systems at Pahala. Figure 11 shows the site plan for both Alternative 3 and 4.

The April 2023 PER indicates for a Model 2 Alternative, the County is to:

- Fund design and manage project construction of the IWS systems;
- Administer and manage a maintenance program for IWS;
- Develop a maintenance program would entail establishing rules and regulations for monthly fees/penalties, County monitoring and reporting, and IWS educational information for homeowners;





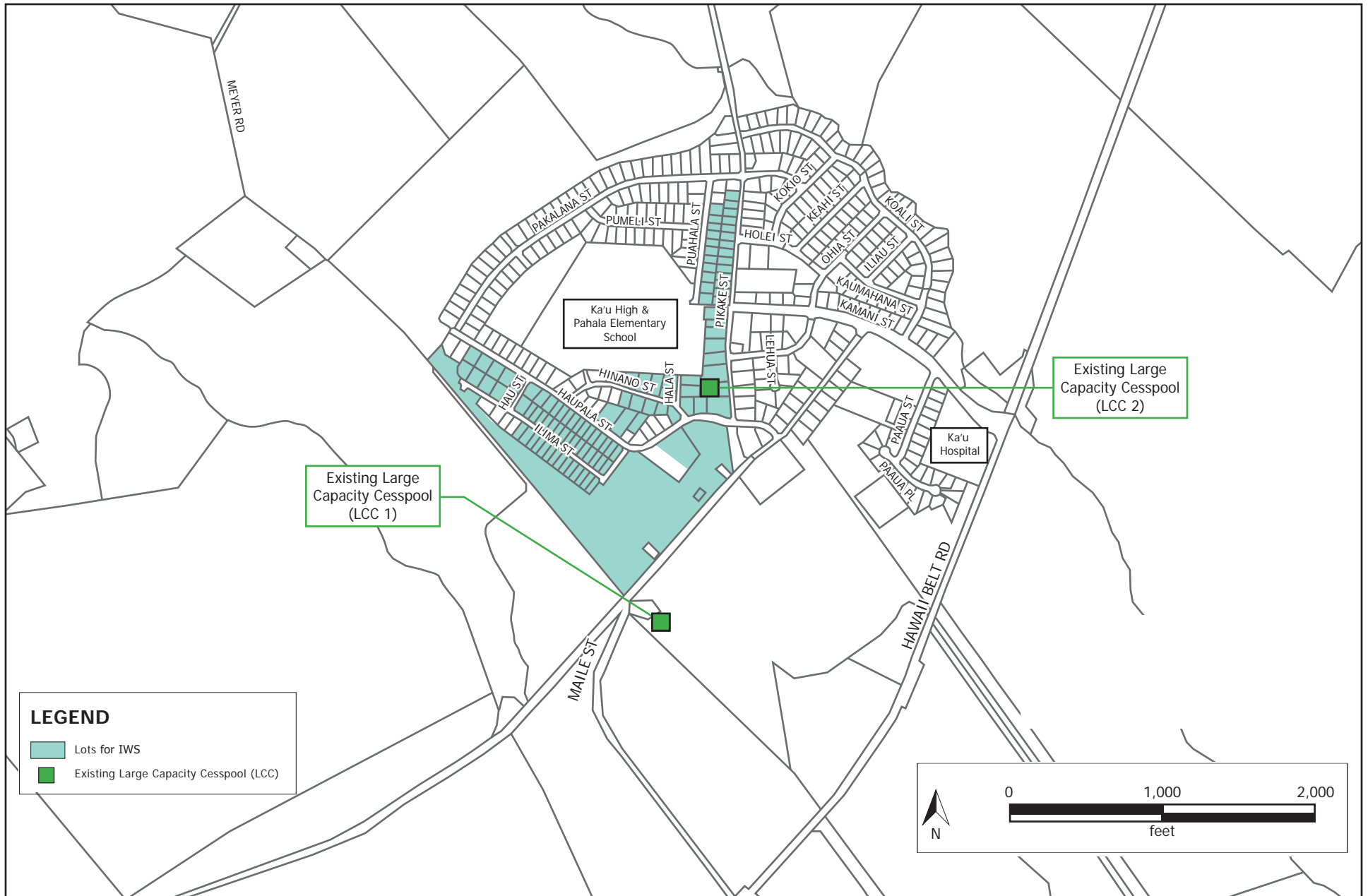


FIGURE 11

# ALTERNATIVES 3 & 4 SITE PLAN

PĀHALA LARGE CAPACITY CESSPOOL CLOSURE PROJECT



- Operate the system and conduct routine maintenance, and respond to any related trouble calls; and
- Prepare and submit related notices and reports.

#### **2.1.4 Alternative 4 – Individual Wastewater System-Operating Permit to Homeowners**

The April 2023 PER indicates for a Model 3 Alternative, the County is to:

- Fund design and construction of the IWS systems;
- Administer an operating permit program for the IWS system to the homeowners;
- Issues maintenance notice to the homeowner.

Under Alternative 4, the homeowners would be responsible for maintenance scheduling, contracting and paying for a service provider to conduct the necessary maintenance and/or responding to trouble calls, monitoring and record keeping of maintenance.

Under Alternative 4, County is evaluating the possibility of either completing the project as a conventional Design/ Bid/ Build process, or under a voucher program, which the County would administer. This voucher program the County will grant homeowners with funds to hire Professional Engineer to design new IWS and, then hire a Contractor to construct IWS. Under the voucher program homeowners will be responsible to hire and coordinate with a professional engineer for overall design and placement of the IWS.

Based on the above, regardless of the maintenance responsibility, the County will fund the design of the IWS systems for Pāhala. The PER identifies two key considerations to ensure the IWS functions as intended;(1) system size, including the number of bedrooms or flow rate and (2) site considerations including soil type, slope, drainage patterns and accessibility to the IWS site.

The PER indicated the median residential parcel in Pāhala is about 10,500 square feet (0.24 acres), with some as small as 5,200 square feet (0.12 acres). HAR 11-62-3.1 (2)(A) states 10,000 square feet (0.23 acres) of usable land must be available for each IWS. Of the 174 properties to be served in this project, 81 have less than 10,000 square feet of total area. Space available for IWS installation on these properties may be further limited by the presence of existing structures.

Further, the actual placement of the IWS system is limited by setback requirements from property lines of 5 to 9 feet and structure walls of 5 feet. From a system design perspective, the PER recommended that systems should also be a minimum of 20 feet from any cut-face slopes present on a site to avoid surfacing of treated effluent. This is a particularly a constriction to heavily sloped sites.

The PER noted the Pāhala has a roughly 10 percent grade, although the slopes will vary from parcel to parcel. HAR 11-62-34 states absorption beds shall not be installed on lands with a slope gradient of greater than 8 percent. Absorption trenches are permitted on slopes of up to 12 percent. Generally, the various setback and slope requirements mean that the IWS system will need to be specifically designed for each parcel.



The PER noted it is generally not good practice to install an IWS under an area with traffic loads or covered with a concrete covered. The presence of traffic loads or concrete pavement will compress the soil in distribution/effluent disposal system and affects the accessibility of the system for maintenance. However, it is sometimes unavoidable particularly on parcels with limited space. In these instances, a system may be installed underneath a driveway or patio provided the system is designed with traffic rated treatment components. These may include products such as concrete septic tanks and/or H-20 traffic related chambered disposal beds.

### ***Septic Tanks***

The PER stated septic tanks are the most common conversion treatment technology installed in Hawai'i. A septic tank is an underground chamber made of concrete, fiberglass reinforced polyester, or plastic, and used for treating and disposing of household wastewater. The tank contains a mixture of untreated sewage and anaerobic bacteria, which break down the waste and separate it into three layers: a top layer of scum, a middle layer of liquid effluent, and a bottom layer of sludge. Septic tanks operate without the need for electrical power. Contractors are familiar with the process of installing IWS systems.

The septic tank can have two chambers with sewage flows from the home flowing into the first chamber where the heavy solids will settle to the bottom as sludge and the remaining liquid and lighter solids floating to the top as scum. The floating liquid will flow to the second chamber through an opening in the wall where any remaining solids will settle to the bottom and then effluent will flow to disposal system. Access to the tank will be sealed to retain the anerobic conditions which will help to control odor.

The liquid effluent flows out of the tank and into a means of disposal, where it is further treated and dispersed into the soil. According to the PER, the sludge and scum remain in the tank and must be periodically pumped out by a professional septic service approximately once every three to five years, depending on usage. Figure 12 shows a typical septic tank.

The April 2023 PER stated there are several types of septic tanks from suppliers in Hawai'i. The tanks can be made from concrete, plastic, and reinforced fiberglass polyester which come at of a variety of price points, each with a set of advantages and disadvantages and materials. Where a septic tank is located beneath a vehicular traffic area, a traffic rated concrete septic tank can be used or a structural concrete slab designed for H-20 loading spanning a non-traffic tank may be used.

Concrete tanks are durable and less susceptible to collapse. However, concrete tanks can be more expensive than plastic or reinforced fiberglass tanks and typically require a crane for installation and can corrode from the effects of acidic sewer gases.

Plastic or polyethylene tanks are less expensive than concrete; resistant to corrosion and may not require a crane for installation. However, plastic tanks may deform and, if not properly installed, can float if flooded.



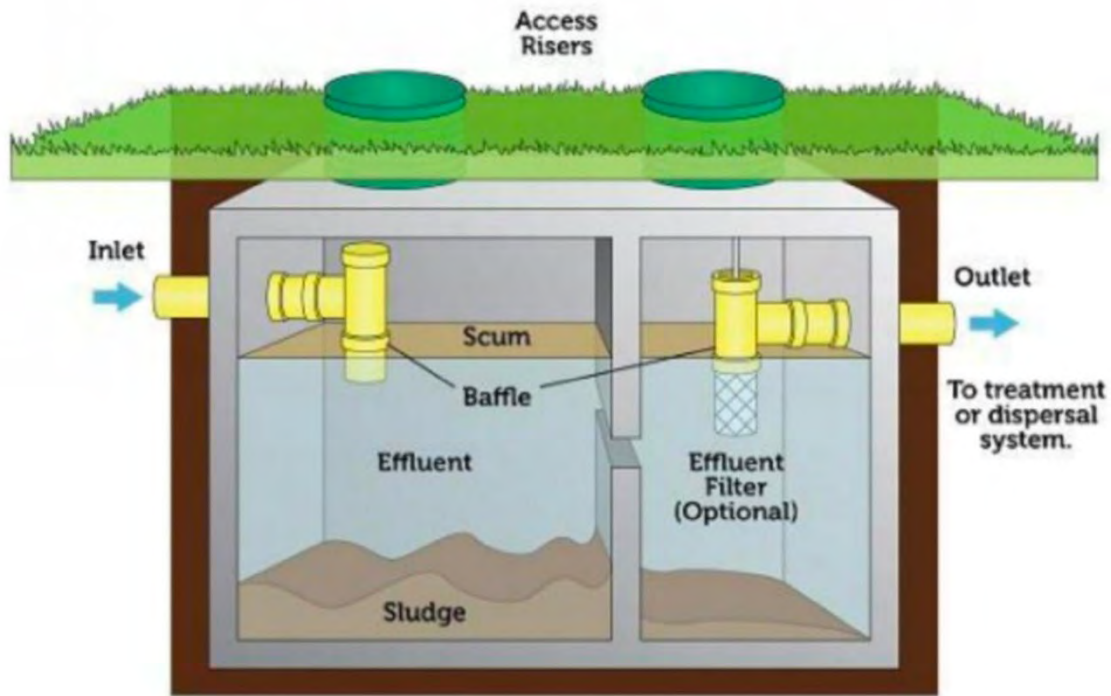


Figure 12: Typical Septic Tank System  
Source: PER, 2023

Fiberglass reinforced polyester (FRP) tanks are less expensive than precast concrete tanks, primarily due to lower shipping and installation costs, typically resistant to corrosion, more rigid than plastic tanks, and may not require use of a crane for installation.

The April PER indicated the choice of septic tank material will depend on availability, budget, and site constraints. At a minimum, septic tanks in Hawai'i must comply with International Association of Plumbing and Mechanical Officials (IAPMO) material and property standards for septic tanks. Further, sizing and installation criteria are regulated by HAR 11-62-33. The minimum septic tank capacity is 1,000 gallons for a household of 4 bedrooms or less and 1,250 gallons minimum for households of 5 bedrooms. Septic tanks serving households greater than 5 bedrooms will require a variance from the DOH.

The PER discusses two commonly used IWS effluent disposal methods found in Hawai'i, absorption bed and absorption trench. Absorption beds are the most common form of IWS disposal method installed in Hawai'i today. The absorption bed will require excavation of 6 to 7 feet below grade to accommodate the network of perforated pipes, each a maximum of 100 feet long and laid in trenches 1.5-3 feet below the finished grade 4-6 feet apart. Each line is laid level to allow the gravity dispersal of the treated effluent through the length of the pipe before it filters out and percolates down into the soil. A minimum of 6 inches of gravel is provided below each pipe. If the percolation rate is faster than one minute per inch, a 3-foot soil replacement layer is installed under the entire absorption bed. The soil replacement is to be washed #4 sand or cinder-soil mix with a percolation rate not faster than one minute per inch. The excavated material from the absorption bed will need to be removed off the site.



These systems are easy to maintain when connected to an effective treatment system and will rely on microorganisms in the soil for an added degree of treatment to the effluent as it filters through the upper oxic layers of the soil matrix. However, absorption beds have a significant space requirement with current Hawaiian regulations requiring a minimum of 350 square feet for a 4-bedroom home. This space requirement increases with decreasing hydraulic conductivity of the soil. Additionally, absorption beds can only be installed on a grade of less than 8 percent.

An absorption trench is a type of subsurface wastewater disposal system that utilizes a trench filled with gravel or other porous material to filter and distribute wastewater effluent into the ground. Wastewater is distributed into the trench through a network of pipes, typically made of PVC or other durable materials. The gravel in the trench acts as a natural filter, allowing the water to slowly seep into the surrounding soil while also removing impurities with adsorbed beneficial bacteria. The trench may be lined with a layer of filter fabric to prevent the gravel from becoming clogged with soil or other debris. Figure 13 shows a typical IWS site plan with an absorption bed.

The PER indicated, although not as common as an absorption bed or trench, use of a seepage pit should be considered for use in Pāhala. Seepage pits are a vertical means of achieving the percolation area requirements for a disposal system. These systems typically consist of a 15-30-foot-deep pit lined with stacked precast perforated concrete rings or CMUs, to an internal diameter of 6-8 ft. Seepage pits are both less land area intensive and less expensive than absorption beds. Figure 14 shows typical IWS site plan with seepage pit.

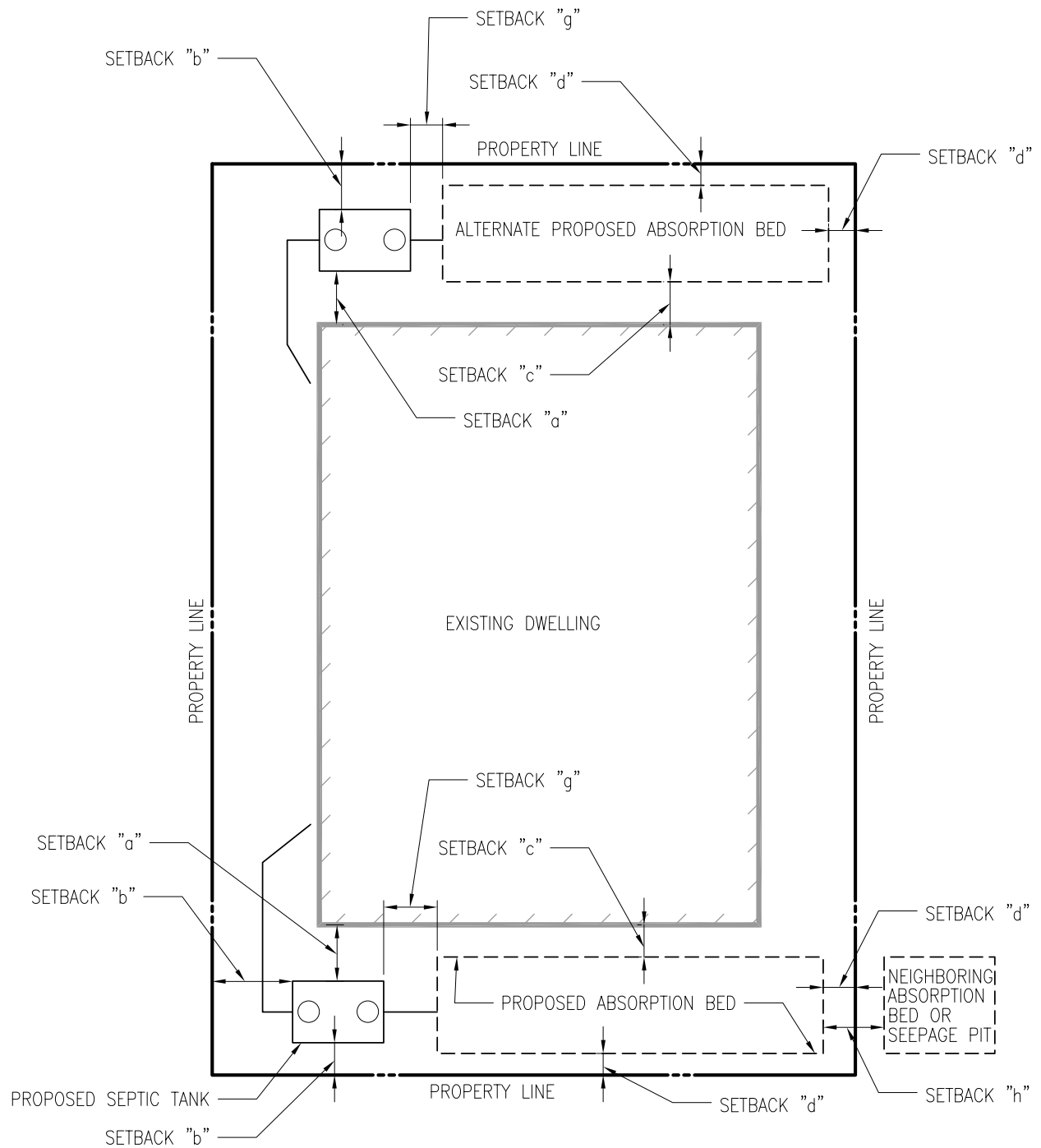
A seepage pit must include a cover which extends at least 12 inches beyond the seepage pit excavation or over a provided concrete lining. An access hatch must be provided in the concrete cover to allow inspection and maintenance of the pit. The seepage pit may be designed to be traffic rated by providing the sufficient strength required in the design of the concrete lining and cover.

The effective area of the seepage pit is equal to the vertical wall area corresponding to the effective depth of the pit. Slow percolation rates translate to a larger required absorption area or deeper pit.

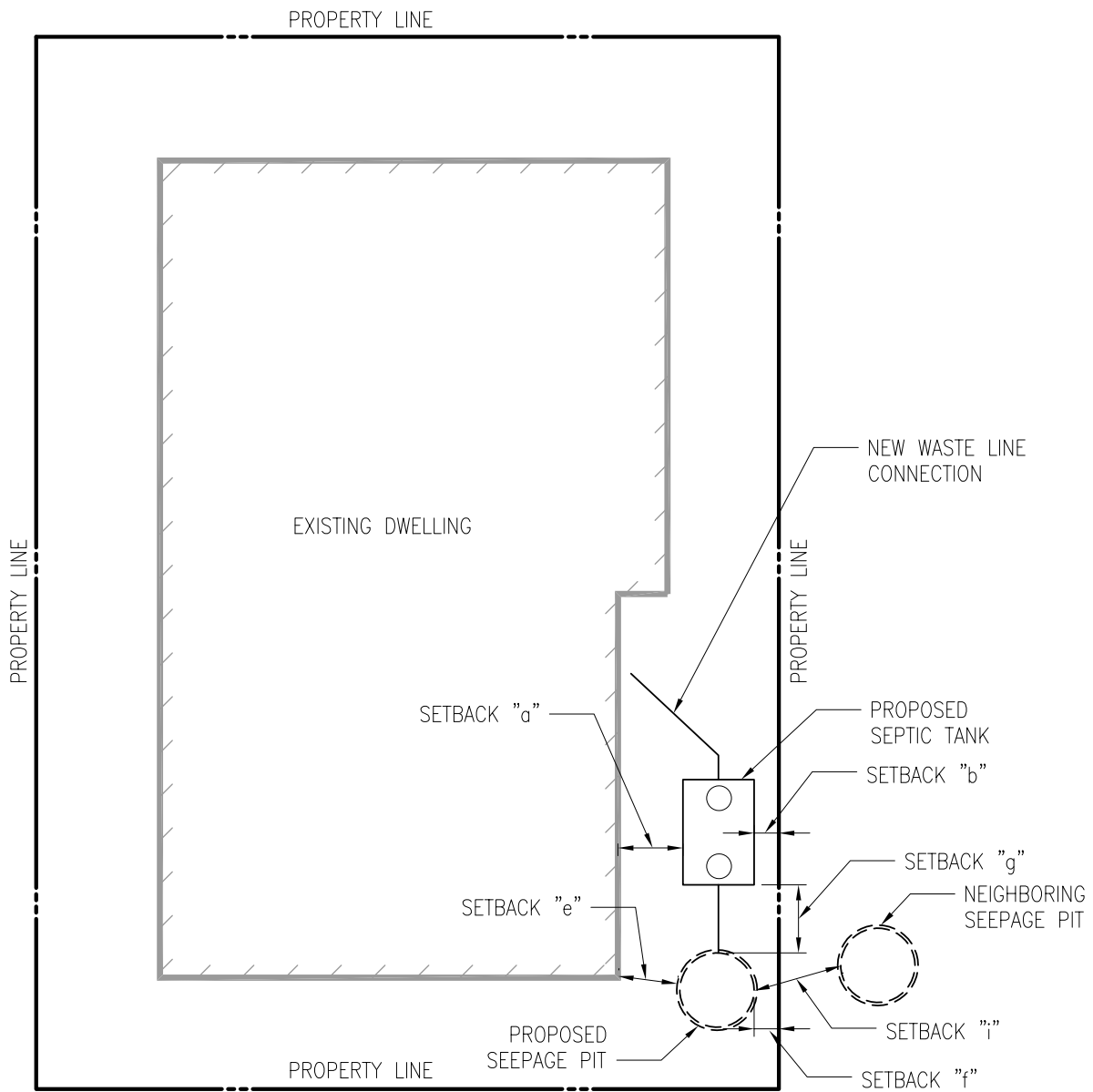
While seepage pits are an approved means of disposal in Hawai'i, they are often only permitted when it can be demonstrated that an alternative means of disposal was not possible, i.e. insufficient land area, steep terrain (greater than 12 percent) or very slow percolation rates (less than 60 min/inch). Where slow percolation rates present, seepage pits will need to be dug through the basalt rock layer to reach more porous soils or a variance will be required from HAR 11-62-34 d(1)b:

Seepage pits shall not be constructed in soils having a percolation rate slower than ten minutes per inch (weighted average) or where rapid percolation through such soils may result in contamination of water-bearing formations or surface water.





**FIGURE 13**  
**TYPICAL IWS LAYOUT W/ ABSORPTION BED**



**FIGURE 14**  
**TYPICAL IWS LAYOUT W/ SEEPAGE PIT**

The PER provides information related to land area needed for IWS systems, which is affected by the percolation rate of the soil. The information shows the slower the percolation rate, the larger the land area needed for the IWS system, or in the case of a seepage pit, the deeper the pit required. The total area for a septic tank and absorption field ranges from about 480 to 765 square feet. In comparison, the land area for septic tank and seepage pit would be about 120 square feet. The Table 1.1 below from the PER shows the percolation rate and the affected area required for an IWS system.

Percolation Rate (min/in)	4	12	20
<b>Infiltration Area Required (ft<sup>2</sup>)</b>	345	525	630
<b>Possible Absorption Field Length (ft) (W = 15 ft)</b>	23	35	42
<b>Possible Seepage Pit Dimension (Diameter = 6 ft)</b>	12	19	22
<b>Septic Tank Area Required (ft<sup>2</sup>)</b>	60	60	60
<b>Total Footprint with Absorption Field (ft<sup>2</sup>)</b>	480	660	765
<b>Total Footprint with Seepage Pit (ft<sup>2</sup>)</b>	120	120	120

Table 1.1: IWS Percolation Rate and Required Area

The PER discussed the installation of an IWS can be a relatively invasive process requiring large equipment like excavators and cranes. Accommodating this equipment often requires the removal of fencing, destruction of existing trees, landscaping and, in some cases, small structures. Building footprints as well as overhanging soffits need to be considered in the design and placement of the IWS. Also, the access path to the IWS needs to be considered when selecting appropriate IWS system design as well as for future maintenance activities.

Opportunities/methods to resolve access issue include:

- Placement of the IWS system in the front-yard is recommended for parcels without sufficient paths to accommodate equipment access into the backyard.
- The use of a large crane can be avoided by specifying cast-in-place concrete traffic slab with a plastic tank instead of a precast traffic-rated concrete tank, especially for inaccessible locations and vehicle traffic is anticipated.
- Also, it might be possible to access a backyard from a neighbors' property by temporarily removing an adjoining fence.

The PER identified a number of cost implications from an IWS system that a homeowner will face:

- Homeowners currently connected to the LCCs are paying a reduced sewer fee of about 50 percent of the standard sewer rate (Hawai'i County, 2023). An IWS will either introduce





a full-rate monthly sewer fee or a bill for private maintenance provider to maintain their new system. It is quite likely that some homeowners don't see a need to upgrade from the current system. However, initial opposition to the project has largely been addressed through the County's engagement efforts.

- Most homeowners are protective of their private property. Homeowner permission is not trivial for a project that poses a risk to their landscaping, fences and buildings. Homeowner satisfaction with the project will be closely linked with the speed and care with which their properties are upgraded and restored to pre-construction conditions or better.

The PER discussed several issues related to IWS systems as they relate to the Pāhala community which include: 1) there are several septic tank pumping service in the Hilo and Kailua-Kona area that could service Pāhala; 2) the typical pumping truck has a capacity of 2,500 to 3,000 gallons which means a one truck could pump out two to three septic tanks during one visit; 3) the septic tank should be pumped out every 3 to 5 years, not necessarily regularly; 4) the trucks are equipped hoses such that the truck does not have to direct access the tank; 5) the pumping should take 1 to 2 hours; 6) the cost to the homeowner could range from \$500.00 to \$900.00 part of the cost is the need to empty the tanks at a WWTP plant, in Hilo or Kealahou; 7) root barriers could be placed to minimize root intrusion into the absorption bed or the perforated pipe.



### 3. Cumulative Effects

The Proposed Action (construction of a new wastewater treatment and disposal facility and a new collection system, closure of existing large capacity cesspools (LCCs), and connection of newly accessible properties to the sewer system), in combination with other past, present, or reasonably foreseeable actions at or near Pāhala, could contribute to cumulative improvements and impacts on certain environmental resources. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

#### 3.1 Scope of Analysis

This section identifies the other past, present, or reasonably foreseeable actions at or near Pāhala that were considered and evaluated in this cumulative improvements and impacts analysis as related to Alternative 1 and Alternative 2. Since Alternative 3 and Alternative 4 would affect the individual parcels, these two alternatives are not included in the analysis.

##### 3.1.1 Geographic Scope of Analysis

The extent of the cumulative effects analysis is generally limited to the geographic/natural boundaries of the affected resource areas. The Council on Environmental Quality (CEQ) handbook on *Considering Cumulative Effects Under the National Environmental Policy Act* indicates that the geographic extent for this analysis should be defined on a case-by-case basis and is dependent on the affected resources (CEQ, 1997).

In defining the geographic scope for consideration of cumulative effects, the DOH and County considered the resources that would be affected by the Proposed Action (i.e., within the project impact zone); the type and intensity of those effects; and whether those affected resources extend beyond the project impact zone. The effects of the Proposed Action would generally be limited to the immediate vicinity of the WWTP project site and related improvements plus minor transportation-related impacts during construction; the Proposed Action would not adversely affect historic properties or protected species; it would not adversely affect surface waters that are part of a larger watershed (other than potential for temporary, minor construction-related runoff impacts that would be mitigated by adherence to BMPs); and the affected macadamia nut orchard. Based on these considerations, the DOH and County limited this cumulative effects assessment to include past, present, and reasonably foreseeable actions located within the Pāhala community or within 1 mile of the proposed location of the wastewater treatment and disposal facility and related improvements. This scope is expected to more than fully encompass the full extent of resource areas that would potentially experience discernable effects from the Proposed Action and is commensurate with the type and intensity of the effects of the Proposed Action.

The community of Nā`ālehu, located approximately 11 miles southwest of Pāhala, is also considering options for closure of LCCs and development of a new wastewater treatment system. The Nā`ālehu Large Capacity Cesspools Closure Project (Nā`ālehu Project) is similar in concept to the Proposed Action in that it proposes the closure of existing LCCs and the construction of a new system for a similarly sized community. The DOH and County analyzed whether this and other similar projects throughout the Ka`ū District would have the potential to affect the same resources as the Proposed Action. A typical, similar construction project would be expected to result in temporary, localized impacts during construction including impacts from the use of construction-



related vehicles and equipment (e.g., changes in traffic patterns and increases in noise and air emissions), disturbance of soil and vegetation, and generation of construction and demolition debris; and potential long-term, localized impacts including changes in stormwater runoff and infiltration, removal of vegetation, and changes in visual resources. These direct and indirect effects, if managed in accordance with applicable environmental regulations, would not be expected to extend beyond the vicinity of the project construction sites and local communities.

For these reasons, the future Nā`ālehu Project, while located in the Ka`ū District, is outside the geographic scope of this cumulative effects analysis and, for the reasons described above, is not expected to have a significant cause-and-effect relationship with the direct and indirect effects of the Proposed Action due to its distance from Pāhala. In addition, the National Environmental Policy Act (NEPA) does not require consideration of socioeconomic impacts that are unrelated to an impact on the physical environment (40 CFR § 1508.14). Therefore, cumulative economic effects of the Nā`ālehu Project combined with the Proposed Action on the County-wide economy, tax base, and borrowing capacity were not analyzed in this environmental assessment.

### **3.1.2 Past, Present, and Reasonably Foreseeable Actions within Geographic Scope of Analysis**

Only one significant project has occurred within the geographic scope of analysis in the recent past – specifically, the construction of a new gymnasium at Ka`ū High School and Pāhala Elementary School in the center of the Pāhala community, more than one-half mile north of the site of the wastewater treatment and disposal facility. The gym was constructed to also serve as a community shelter during emergencies. Construction began in October 2012 and was completed in early 2016.

The school's LCC was previously replaced with a Department of Health (DOH)-approved septic system that included two new laterals at the property line on Hala Street and Kamani Street to allow eventual connection to the new collection system. Following completion of the Proposed Action, the State Department of Education will connect the Ka`ū High School and Pāhala Elementary School (including the Ka`ū District Gym and Shelter) to the new collection system and will properly close the onsite septic system.

There are no current projects in or around Pāhala, and no reasonably foreseeable actions (other than connection of the Ka`ū High School and Pāhala Elementary School to the new collection system) are planned based on review of the County's Capital Improvement Plan and the Ka`ū Community Development Plan (CDP). The CDP includes policies for long-term improvements regarding the extension of wastewater systems in the Pāhala community in the Ka`ū District. These long-term goals were considered in preliminary design of the Proposed Action; the wastewater treatment and disposal facility and collection system would be designed to be expandable should the County or community decide in the future that expansion is necessary. However, the CDP does not present a timeline for this expansion; no substantial planning or scoping of a collection system expansion has been conducted, and this expansion is unlikely to occur within the next 10 to 20 years. This action therefore is not considered reasonably foreseeable for purposes of the cumulative effects discussion and is not included in the analysis below.



### 3.2 Cumulative Improvements and Impacts Analysis

This analysis identified the following potential cumulative effects resulting from the Proposed Action, construction of the Ka'ū District Gym and Shelter, and connection of the Ka'ū High School and Pāhala Elementary School to the new collection system:

- Installation of new exterior lighting, resulting in potential nighttime light pollution and distraction to night-flying birds;
- Removal of vegetation and construction of new impervious surfaces, resulting in a potential increase in stormwater runoff; and
- Increase in influent flows from the Ka'ū High School and Pāhala Elementary School to the new wastewater treatment and disposal facility.

Both the Proposed Action and the Ka'ū District Gym and Shelter construction have incorporated mitigation measures to reduce nighttime light pollution and impacts to night-flying birds. Specifically, the Ka'ū District Gym and Shelter incorporated minimal use of security lighting, which are shielded in accordance with the County's exterior lighting standards, and outdoor parking lights are turned off at 11:00 p.m. to avoid impacts to birds and bats. The Proposed Action would incorporate lighting that complies with the County's exterior lighting standards and FWS guidance, and the new facility would generally be dark at night, with exterior lighting used only for emergency maintenance purposes. Adherence to these requirements would minimize the potential cumulative light pollution impacts from these projects.

To reduce stormwater impacts, the Ka'ū District Gym and Shelter incorporated new dry wells and grass parking, instead of paved parking, to the extent allowable by the Hawai'i Planning Department. The Proposed Action would incorporate permanent BMPs such as subsurface linear infiltration or depressed detention basins to detain flows and volumes to their pre-development conditions. Additionally, due to the relatively young and porous geology of the Ka'ū district, any increases in stormwater runoff generated by these projects are anticipated to infiltrate to groundwater without presenting cumulative erosion concerns.

Finally, while the connection of the Ka'ū High School and Pāhala Elementary School to the new wastewater treatment and disposal facility would increase the treatment capacity requirements for the wastewater treatment and disposal facility, this was accounted for in the facility's preliminary design. Based on the above, the Proposed Action is not expected to result in any significant cumulative improvements or impacts to the environment in combination with other past, present, or reasonably foreseeable actions.



## 4. Legal Framework and Regulatory Authorities

As described above, the County may use CWSRF for construction of the Pahala Large Capacity Closure project. Since the State Revolving Fund receives annual funding from EPA, the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321 – 4347), requires a federal agency proposing to undertake a project to consider the potential environmental impacts of the proposed project. Use of federal funds for a project is among the criteria set forth in NEPA that require preparation of environmental review documentation under NEPA and procedural requirements at 40 CFR Parts 1500-1508 (Council on Environmental Quality (CEQ) regulations), and 40 CFR Part 6 (U.S. Environmental Protection Agency (EPA) regulations). This Environmental Information Document (EID) has been prepared under these guidelines.

The following regulatory requirements apply to this EID and to federal cross cutting regulations necessary for compliance with the CWSRF program.

### 4.1 National Environmental Policy Act (NEPA) of 1969 (as Amended)

NEPA was passed in 1969 “to assure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.” NEPA requires all federal agencies to prepare Environmental Information Documents (EIDs), Environmental Assessments (EA) and/or Environmental Impact Statements (EISs) to assess environmental impacts from project alternatives.

The purpose of NEPA is “to declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality,” Sec. 2 [42 USC § 4321].

According to NEPA, it is the continuing responsibility of the federal government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate federal plans, functions, programs, and resources. NEPA, as amended in 1970, requires federal agencies to: (a) utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man’s environment; (b) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by Title II of this Act, which will ensure that presently un-quantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations; and (c) include in every recommendation a detailed statement on the environmental impact of the Proposed Action; any adverse environmental effects which cannot be avoided should the proposal be implemented; alternatives to the Proposed Action; the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and; any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented, Sec. 102 [42 USC § 4332].

This project may be funded by federal funds provided by U.S. Environmental Protection Agency (EPA) through the State of Hawai‘i’s Clean Water State Revolving Fund (CWSRF) Program. As such, the State of Hawai‘i Department of Health (DOH) must conduct an environmental review of



projects funded under the CWSRF as required under the Code of Federal Regulations (CFR), using the EPA-approved State Environmental Review Process. In addition, the State must comply with the federal cross-cutting authorities set forth in 40 CFR § 35.3145 for the CWSRF.

The CWSRF requirements are set forth as “cross cutters” described as follows.

In addition to the cross cutters required by the EPA-approved State Environmental Review Process, EPA guidance for conducting environmental reviews, and the Clean Water Act have been included.

#### **4.2 Archaeological and Historic Preservation Act (54 U.S.C. § 312502)**

The Archaeological and Historic Preservation Act (AHPA), also known as the Archaeological Recovery Act and the Moss-Bennett bill, was passed and signed into law in 1974. It amended and expanded the Reservoir Salvage Act of 1960. The AHPA built upon the national policy, set out in the Historic Sites Act of 1935, *“to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance.”* The AHPA expanded the policy by focusing attention on significant resources and data but does not require that they be shown to be of “national” significance. The AHPA required that federal agencies provide for *“...the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of...any alteration of the terrain caused as a result of any Federal construction project of federally licensed activity or program.”*

54 United States Code (U.S.C.) § 312502 (a)(1) states: “When any Federal agency finds, or is notified, in writing, by an appropriate historical or archeological authority, that its activities in connection with any Federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, the agency shall notify the Secretary, in writing, and shall provide the Secretary with appropriate information concerning the project, program, or activity.”

54 U.S.C. § 312502 (b)(1) states: “When any Federal agency provides financial assistance by loan, grant, or otherwise to any private person, association, or public entity, the Secretary, if the Secretary determines that significant scientific, prehistorical, historical, or archeological data might be irrevocably lost or destroyed, may, with funds appropriated expressly for this purpose -

*(A) Conduct, with the consent of all persons, associations, or public entities having a legal interest in the property, a survey of the affected site; and*

*(B) Undertake the recovery, protection, and preservation of the data (including analysis and publication).”*

The proposed collection system will be constructed primarily within existing County streets and two short segments within private easements in the Pāhala community that have been previously disturbed when the streets were constructed. Preliminary analysis shows the proposed treatment and disposal facility will be constructed in an area that does not contain archaeological resources. In 2018/2019, an Archaeological Inventory Survey (AIS), which included subsurface testing, was conducted for the previously design of the project.. The AIS served to confirm the presence/absence of archaeological resources on the proposed 14.9-acre site for the Pāhala WWTP and Sewer System project. The AIS confirmed no significant artifacts or cultural deposits



were observed on the ground surface within the Proposed WWTP Site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching.

In 2023, an Archeological Literature Review Report was conducted to determine the likelihood that historic properties may be affected by the project and, based on the findings, consider cultural resource management recommendations. The literature review concluded that surface pre-Contact sites are not expected within the Project Area given the known traditional land use in this area and the impacts of continued agricultural and residential development. The modern development of the macadamia nut orchard has likely also obliterated any plantation-era sites once present in that part of the Project Area. Historic surface features associated with the sugar plantation and associated village may be present. Furthermore, there is potential for pre- or post-Contact subsurface archaeological features within the Project Area, which may or may not be located within lava tubes. It should be noted that the literature review is intended to support the project's historic and environmental review process; however, the report does not fulfill the requirements of an archeological inventory survey investigation as set forth in federal and State of Hawai'i historic preservation review requirements. For more information, please refer to Appendix B.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (SHPD), who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

#### **4.3 Bald and Golden Eagle Protection Act (16 U.S.C. § 668-668c)**

The Bald Eagle Protection Act (16 U.S.C. § 668-668c) prohibits any act to take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner any bald eagle commonly known as the American eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof of the foregoing eagles.

No bald or golden eagles are found in Hawai'i.

#### **4.4 Clean Air Act (42 U.S.C. § 7401 et seq.)**

Over the years, there have been a series of legislations affecting air quality and a number amendments adopted related to air quality. The Air Pollution Control Act of 1955 was the first federal legislation involving air pollution and was followed by the Clean Air Acts of 1963 and 1970. The Clean Air Act of 1970 (1970 CAA, 42 U.S.C. § 7401 et seq.) authorized the development of comprehensive federal and state regulations to limit emissions from both stationary (industrial) sources and mobile sources.

The 1970 CAA set forth four major regulatory programs affecting stationary sources: the National Ambient Air Quality Standards (NAAQS), State Implementation Plans (SIPs), New Source Performance Standards, and National Emission Standards for Hazardous Air Pollutants. In Hawai'i, the DOH, Clean Air Branch, Air Quality program is defined by Hawai'i Administrative Rules (HAR) 11-60.1 and serves as the SIP approved by EPA.



The State DOH maintains 10 air monitoring stations on the island of Hawai'i. Established in 2007, the DOH maintains a monitoring station on the grounds of the Ka'ū High School and Pāhala Elementary School to monitor SO<sub>2</sub> and PM<sub>2.5</sub> (in terms of micrograms per cubic meter (µg/m<sup>3</sup>)) from emissions from volcanic activities.

In September 2023, the DOH issued the Annual Summary 2022 Air Quality Data report which provides the results from the network of air quality monitoring stations. In 2022, Pāhala was in violation of the 1-hour SO<sub>2</sub> NAAQS standard. The 2022 report stated volcanic eruptions are considered natural events and therefore EPA may exclude the exceedances of the 1-hour NAAQS from attainment determinations.

The quality of air in the general Pāhala area is considered "Good." The rural nature of the Pāhala area has no major stationary sources of air pollution. Existing sources of air pollution are emissions from motor vehicles traveling along Māmalahoa Highway and on the streets in the community; the low level of vehicle traffic tends to limit mobile sources of emissions.

Potential short-term effects from dust and exhaust due to construction activities will be minimized with BMPs such as water sprinkling and proper equipment maintenance. No long-term impacts on air quality resulting from operation of the collection system, the wastewater treatment and disposal facility, or the IWS are anticipated.

The DOH operates a network of air quality monitoring stations at various locations around the state. In September 2023, the DOH issued the Annual Summary 2022 Air Quality Data report (the most recent report) which provides the results from the network of air quality monitoring stations. The DOH maintains a monitoring station on the grounds of the Ka'ū High and Pāhala Elementary School. Established August 2007, the station was placed to monitor SO<sub>2</sub> and PM<sub>2.5</sub> from volcanic emissions. In 2022, Hawai'i was in attainment of the state annual SO<sub>2</sub> standard. In 2015, Hawai'i was in attainment with the annual NAAQS for particulate matter with a diameter of 2.5 micrometers or less (PM<sub>2.5</sub>).

Volcanic eruptions are considered natural events and therefore EPA may exclude the exceedances of the 1-hour NAAQS from attainment determinations.

The quality of air in the general Pāhala area is considered "Good." The rural nature of the Pāhala area has no major stationary sources of air pollution. Existing sources of air pollution are emissions from motor vehicles traveling along Māmalahoa Highway and on the streets in the community; the low level of vehicle traffic tends to limit mobile sources of emissions.

Potential short-term effects from dust and exhaust due to construction activities will be minimized with BMPs such as water sprinkling and proper equipment maintenance. No long-term impacts on air quality resulting from operation of the collection system, the wastewater treatment and disposal facility, or the IWS are anticipated.

#### **4.5 Coastal Barrier Resources Act (16 U.S.C. § 3501)**

In 1982, Congress passed the Coastal Barrier Resources Act (CBRA) (16 U.S.C. § 3501) to minimize the loss of human life; wasteful expenditure of federal revenues; and the damage to fish, wildlife, and other natural resources associated with the coastal barriers along the Atlantic and Gulf coasts and along the Great Lakes by restricting future federal expenditures and financial





assistance which have the effect of encouraging development of coastal barriers, such as federal flood insurance through the National Flood Insurance Program.

The Coastal Barrier Resources Reauthorization Act of 2000 reauthorized the CBRA and directed the U.S. Fish and Wildlife Service (FWS) to complete a Digital Mapping Pilot Project that includes digitally produced draft maps for up to 75 John H. Chafee Coastal Barrier Resources System (CBRS) areas and a report to Congress that describes the feasibility and costs for completing digital maps for all CBRS areas.

Based on its location, the CBRA is not applicable to Hawai'i.

#### **4.6 Coastal Zone Management Act (16 U.S.C. § 1451)**

The Coastal Zone Management Act of 1972 (CZMA) (16 U.S.C §§ 1451-1464) was passed to establish a national policy to preserve, protect, develop, and where possible, restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations and to encourage coastal states to develop and implement coastal zone management (CZM) programs. Each federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved state management programs. Each federal agency carrying out an activity subject to the Act shall provide a consistency determination to the relevant state agency designated under § 1455(d)(6) of this title at the earliest practicable time.

In 1977, Hawai'i enacted HRS 205A (Coastal Zone Management). The CZM area encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. The objective and policies of the CZM Program are set forth in HRS § 205A-2 and detailed below:

##### **(1) Recreational Resources**

Objective:

- (A) Provide coastal recreational opportunities accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreational planning and management; and
  - (i) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by: 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 use 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.*

All project locations are at least 3.3 miles from the shoreline and, as such, the Proposed Action will not affect coastal recreational resources under any of the Proposed Alternatives.

## (2) Historic Resources

### Objective:

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

### Policies:

- (A) Identify and analyze significant archaeological resources;*
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) Support state goals for protection, restoration, interpretation, and display of historic resources.*

Under Alternative 1 and 2, The proposed wastewater collection system will be constructed along the existing County streets and two short segments within easements in the Pāhala community that have been previously disturbed when the streets were constructed. Preliminary analysis shows the treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An AIS, which included subsurface testing, was conducted to confirm the presence or absence of archaeological resources on the proposed collection system area. The AIS confirmed no significant artifacts or cultural deposits were observed on the ground surface



within the Proposed WWTP Site as the area experiences ongoing disturbance by macadamia harvesting operations and stormwater runoff. Further, no cultural deposits or lava tubes were encountered during the subsurface trenching.

In 2023, an Archeological Literature Review Report was conducted to determine the likelihood that historic properties may be affected by any of the Proposed Alternatives and based on the findings, consider cultural resource management recommendations. The literature review concluded that surface pre-Contact sites are not expected within the Project Area given the known traditional land use in this area and the impacts of continued agricultural and residential development. The modern development of the macadamia nut orchard has likely also obliterated any plantation-era sites once present in that part of the Project Area. Historic surface features associated with the sugar plantation and associated village may be present. Furthermore, there is potential for pre- or post-Contact subsurface archaeological features within the Project Area, which may or may not be located within lava tubes. It should be noted that the literature review is intended to support the project's historic and environmental review process; however, the report does not fulfill the requirements of an archeological inventory survey investigation as set forth in federal and State of Hawai'i historic preservation review requirements. For more information, please refer to Appendix B.

The contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease immediately, and the find will be protected from further damage. The contractor will immediately contact SHPD, who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

### (3) Scenic and Open Space Resources

#### Objective:

- (A) Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

#### Policies:

- (A) Identify valued scenic resources in the coastal zone management area;
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
- (D) Encourage those developments which are not coastal dependent to locate in inland areas.

All project locations are at least 3.3 miles from the shoreline and, as such, coastal scenic and open space resources will not be affected under any of the Proposed Alternatives.



#### (4) Coastal Ecosystems

##### Objective:

- (A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

##### Policies:

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (B) Improve the technical basis for natural resource management; \
- (C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

All project locations are at least 3.3 miles from the shoreline and, as such, coastal ecosystems will not be adversely affected under any of the Proposed Alternatives.

#### (5) Economic Uses

##### Objective:

- (A) Provide public or private facilities and improvements important to the State's economy in suitable locations.

##### Policies:

- (A) Concentrate coastal dependent development in appropriate areas;
- (B) Ensure that coastal dependent developments such as harbors and ports, and coastal related development such as visitor 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
- (C) 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.

All project locations are at least 3.3 miles from the shoreline. The collection system and the treatment and disposal facility will be sited in suitable locations to serve the Pāhala community.

## (6) Coastal Hazards

### Objectives:

- (A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

### Policies:

- (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;
- (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (D) Prevent coastal flooding from inland projects.

All project locations are at least 3.3 miles from the shoreline and at least 580 feet above mean sea level (msl). Based on the location, the Proposed Action will not be subject to (and will not exacerbate) coastal hazards and do not include improvements related to tsunami, storm waves, stream flooding erosion, subsidence and pollution under any of the Proposed Alternatives.

## (7) Managing Development

### Objective:

- (A) Improve the development review process, communication, and public participation in the management of coastal resource and hazards.

### Policies:

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- (B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and



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

A public information meeting for the Draft EA was held in October 2018. A total of six community outreach sessions to discuss the Amended AOC were conducted in the Pahala and Naalehu communities between March 2022 and September 2023. The sixth session, held on December 14, 2023, was conducted specifically to inform the community of the preparation of this Draft EID and the public comment period.

A semi-annual community informational meeting in Pāhala on February 29, 2024 to give an update regarding the closures of the large capacity cesspools in Pāhala and Nā'ālehu. The next semi-annual community informational meeting will be held in August 2024 in Nā'ālehu. In addition to the semi-annual community meetings, the County held a community meeting on April 10, 2024 at the Pāhala Community Center to provide comments on the Amended Draft EID.

The Project Area is located at least 3.3 miles from the coast, at least 580 feet above msl, and do not involve management of coastal resources and hazards under any of the Proposed Alternatives.

#### (8) Public Participation

Objective:

- (A) Stimulate public awareness, education, and participation in coastal management.

Policies:

- (A) Promote public involvement in coastal zone management processes;
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
- (C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

A public information meeting for the Draft EA was held in October 2018. A total of eight community outreach sessions to discuss the Amended AOC were conducted in the Pahala and Naalehu communities between March 2022 and April 2024. The next semi-annual community informational meeting will be held in August 2024 in Nā'ālehu.

#### (9) Beach Protection

Objective:

- (A) Protect beaches for public use and recreation.



Policies:

- (A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
- (B) Prohibit construction of private 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
- (C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

All project locations are at least 3.3 miles from the shoreline. Proposed Action does not include improvements that would affect public use beaches under any of the Proposed Alternatives.

(10) Marine Resources

Objective:

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

Policies:

- (A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- (B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
- (C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- (D) Promote research, study, and understanding of ocean 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
- (E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

All project locations are at least 3.3 miles from the shoreline. The Proposed Action does not include improvements that would affect development of marine and coastal resources under any of the Proposed Alternatives.



#### 4.7 Endangered Species Act (16 U.S.C. § 1531)

On December 28, 1973, the Endangered Species Act (16 U.S.C. § 1531) was passed and, over the years, has been amended a number of times. The stated purpose of the original Act was to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of various related treaties and conventions. The provisions of the Act are administered by the FWS and the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS). The FWS has primary responsibility for terrestrial and freshwater organisms, while NOAA/NMFS is mainly responsible for marine wildlife.

Section 7 of the Act, Interagency Cooperation (16 U.S.C. § 1536), states each federal agency shall, in consultation with and with the assistance of the Secretary of the Interior, ensure that any action authorized, funded, or carried out by such agency (an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined, after consultation as appropriate with affected states, to be critical, unless such agency has been granted an exemption for such action.

In August 2018, a biological resources field survey was conducted on the 14.9-acre WWTP Site and the collection system. The results of the survey show that, due to the proposed alignment of the collection system along existing roadways, vegetation in the collection system area consists entirely of maintained yards with ornamental plants.

The field survey of the 14.9-acre WWTP Site indicates that the site is comprised of a macadamia nut orchard of mature trees, unmaintained areas outside the orchard dominated by Guinea grass, lanes of windbreak trees oriented between orchard units, and (mostly) mowed road verge areas. A total of 52 species of vascular plants: two ferns, one gymnosperm, and 49 species of angiosperms (flowering plants) were identified during the survey. Only two species (4 percent) identified during the survey are regarded as native to the Hawaiian Islands and both are indigenous (native, but also distributed elsewhere in the Pacific). Being widely distributed indigenous species, neither is listed as threatened or endangered or of any special concern.

The August 2018 field survey included assessment of mammalian species. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The field survey reported no mammalian species within the survey area. This also included no indication that pigs (*Sus scrofa*) utilize the survey area.

The field survey also included an assessment of avian species, and recorded a total of 175 individual birds of 13 species, representing nine separate families, during station counts. Avian diversity and densities were very low, in keeping with the current usage of the site as a mature macadamia nut orchard, with minimal ground cover and few weedy or shrubby species. All of the avian species recorded during the course of the survey are established alien species. No native avian species were recorded during the course of the survey. The field survey recorded no species of plants or animals currently listed or proposed for listing under either the federal or State of Hawai'i endangered species statutes.





On December 21, 2018, the designated non-federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of EPA and the County of Hawai'i, requested concurrence from the FWS that the Pāhala LCC Replacement Project is not likely to adversely affect federally listed threatened and endangered species or critical habitat located within the Project Area.

On February 15, 2019, the FWS provided a letter that concluded: "The Service has analyzed potential impacts to listed species due to the implementation of [the] project. Based on the inclusion of the avoidance and minimization measures listed above, the Service anticipates that any potential impacts will be discountable or insignificant and therefore we concur that the Pāhala LCC Replacement Project may affect, but is not likely to adversely affect the endangered Hawaiian hoary bat, Hawaiian Hawk, Hawaiian goose, Hawaiian Petrel, Band-rumped Storm-Petrel, Hawaiian Stilt, and Hawaiian Coot, and the threatened Newell's Shearwater" (See Appendix C-1 of the FEA). The Proposed Action will incorporate the avoidance and minimization measures cited in the FWS letter, including (but not limited to) avoiding impacts to potential Hawaiian hoary bat habitat during the bat birthing and pup rearing season; conducting a Hawaiian hawk nest survey prior to any work during the nesting season; avoiding activities near active nests; and avoiding nighttime construction during the seabird fledging period.

On February 23, 2024, the designated non-federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of EPA and the County of Hawai'i, provided a letter to the FWS which provided an updated description of the project and acknowledged that the project area has remained consistent with previous consultation efforts. The intent of this letter was to determine if Section 7 consultation would need to be re-initiated due to the project updates. On March 11, 2024, FWS provided an email which concluded that the project would not need to undergo further Section 7 consultation as there were no significant changes to the project footprint or associated activities.

#### **4.8 Environmental Justice Executive Order 12898**

Executive Order 12898, Environmental Justice (full title Federal Actions to Address Environmental Justice to Minority and Low Income Populations), was signed on February 11, 1994. The intent of Executive Order 12898 is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low income populations. Executive Order 12898 also requires federal agencies ensure that minority and low-income communities have adequate access to public information related to health and the environment.

The 2021 American Community Survey (ACS) (5-Year Estimates) is the most recent information related to socioeconomic conditions in the state and County. The 2021 ACS includes Hawai'i Geographic Area Profiles – Census Designated Places: Neighbor Islands. The ACS noted it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

For purposes of this assessment, and to correspond with the available ACS demographic characteristics data, "low income" is defined as having a household income of less than \$24,999; "minority" is defined as any race population other than White; and "children" is defined as the "Under 5 to 19" age category.



Pāhala has more households in the “less than \$24,999” income bracket (25.0 percent) than the County as a whole (18.9 percent).

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities ( 82.4 percent non-White) than the County at large (67.4 percent non-White). The racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.

Pāhala has a similar age distribution to the County, although Pāhala has a higher proportion of individuals in the “Under 5 to 19” age category (33.0 percent) compared to the County as a whole (23.6 percent).

Based on the above, Pāhala has a higher proportion of low-income, minority, and children residents as compared to the County as a whole. However, the Proposed Action will not result in disproportionately high and adverse human health or environmental effects on these sensitive populations under any of the Proposed Alternatives. The design and location of the WWTP facility will minimize odor and air quality impacts. Construction of the wastewater collection system will result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However, construction activities within the community will comply with provisions of HAR 11-46 (Community Noise Control). This includes obtaining a noise permit for any activities that will generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit will limit excessive noise sources to daytime hours; will require the use of best available control technology to control noise levels from excessive noise sources; and will require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, the Proposed Action is expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater treatment system.

#### **4.9 Farmland Protection Policy Act (7 U.S.C. § 4201)**

The Agriculture and Food Act was passed in 1981 and contained the Farmland Protection Policy Act (FPPA) (7 U.S.C. § 4201). The stated purposes of the FPPA are to: 1) minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses; and 2) assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland. “Farmland” subject to FPPA requirements does not have to be currently used for cropland.

The FPPA is administered by the U.S. Department of Agriculture (USDA), National Resources Conservation Service (NRCS). “Farmland”, as used in the FPPA, includes prime farmland, unique farmland, and land of statewide or local importance, as defined by the State of Hawai‘i Department of Agriculture.

Per the Agricultural Lands of Importance to the State of Hawai‘i (ALISH) Classification System, the collection system is located in “unclassified” lands and the proposed WWTP package plant



and effluent disposal facility will be located on approximately 20 percent “prime”, 40 percent “other” and 40 percent “unclassified” land.

Under Alternatives 1 and 2, The proposed collection system will be located primarily within the streets and shoulders in Pāhala and therefore will not affect farmlands. The 14.9-acre WWTP package plant and effluent disposal facility is located within an existing macadamia nut orchard. The 2012 Census Agriculture shows about 17,378 acres in the County are planted with macadamia nuts. As such, the removal of the 14.9-acre area required for the Pāhala WWTP Site will not significantly affect macadamia nut production in the state or the County. Additionally, the construction of the IWS under Alternatives 3 and 4 would occur on a total of 174 residential lots and would not affect macadamia nut production in the state or the County.

In accordance with the implementation procedures for the FPPA site assessment criteria (7 CFR 658), EPA is coordinating with the local NRCS field office to complete a Farmland Conversion Impact Rating Form for the Pāhala LCC Closure Project. This form is used to assess the potential adverse effects on the protection of farmland; support the consideration of alternative actions; and assess compatibility with state and local programs and policies to protect farmland. After the alternative is selected, EPA will finalize the document and provide a copy of the form to the NRCS field office in accordance with 7 CFR 658.4(g).

#### **4.10 Fish and Wildlife Coordination Act (16 U.S.C § 661)**

The Fish and Wildlife Coordination Act (16 U.S.C § 661), enacted on March 10, 1934, was amended on August 12, 1958. The purpose of the Act is to recognize the vital contribution of wildlife resources to the Nation, the increasing public interest and significance, and to provide that wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs through the effectual and harmonious planning, development, maintenance, and coordination of wildlife conservation. The Act defines wildlife and wildlife resources as birds, fishes, mammals and all other classes of wild animals, and all types of aquatic and land vegetation upon which wildlife is dependent (16 U.S.C. § 666b).

The Secretary of the Interior is authorized (1) to provide assistance to, and cooperate with, federal, state, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, and their habitat; in controlling losses of the from disease or other causes; in minimizing damages from overabundant species; and in providing public shooting and fishing areas, including easements across public lands; (2) to make surveys and investigations of the wildlife of the public domain, including lands and waters acquired or controlled by any agency; and (3) to accept donations of land and contributions of funds in furtherance of the purposes of the Act.

Specifically, the Act states that “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first shall consult with the United States Fish and Wildlife Service” (16 U.S.C. § 662(a)). The consultation may result in a report of recommendations by FWS that should be adopted to prevent the loss of or damage to wildlife resources. The provisions of the Act do not apply to impoundments of water less than 10 acres.



The Proposed Action does not include any impoundment of water and therefore a Fish and Wildlife Coordination Act review and/or consultation pursuant to 16 U.S.C. § 662 is not required under any of the Proposed Alternatives.

#### **4.11 Floodplain Management (Executive Order 11988, as amended by Executive Orders 12148 and 13690)**

Executive Order 11988, Floodplain Management, dated May 24, 1977 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities."

The Proposed Action is not located within a 100-year floodplain area, will incorporate stormwater BMPs to manage runoff in accordance with state requirements, and will be designed to ensure sufficient capacity for assimilation of peak effluent flow rates and precipitation from the design storm event. The Proposed Action therefore will not have an adverse impact on floodplains and will minimize the risk of flood-related impacts on surrounding properties under any of the Proposed Alternatives.

#### **4.12 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801)**

The 1996 Sustainable Fishery Act amendments to the Magnuson-Stevens Fishery Conservation and Management Act and subsequent Essential Fish Habitat (EFH) Regulatory Guidelines (NOAA, 2002) describe provisions to identify and protect habitats of federally managed marine and anadromous fish species. Under the various provisions, federal agencies that fund, permit, or undertake activities that may adversely affect EFH are required to consult with the NMFS.

Congress defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH is further defined by the existing regulations (NOAA-NMFS, 2007; NOAA, 2002). "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

All project locations are at least 3.3 miles from the shoreline. The Proposed Action will not adversely impact EFH under any of the Proposed Alternatives.

#### **4.13 Marine Mammal Protection Act (16 U.S.C. §§ 1361 et seq.)**

The Marine Mammal Protection Act (MMPA) (16 U.S.C. §§ 1361 et seq.), protects all marine mammals. The MMPA includes a general moratorium on the taking and importing of marine



mammals, and prohibits, with certain exceptions, the “take” of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. Jurisdiction for MMPA is shared by the FWS and NMFS. The FWS Branch of Permits is responsible for issuing take permits when exceptions are made to MMPA. Under the exception for incidental taking, the FWS or the NMFS must find that the total taking over the five-year period will have a “negligible impact” and will not adversely affect the availability of the marine mammal species or stock for subsistence use by natives.

All project locations are at least 3.3 miles from the shoreline. The Proposed Action will not adversely impact marine mammal communities and will not encourage any “take” of marine mammals under any of the Proposed Alternatives.

#### **4.14 Migratory Bird Treaty Act (16 U.S.C. §§ 703 et seq.)**

The Migratory Bird Treaty Act (MBTA) and Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) provide for the protection of migratory birds. The MBTA of 1918, as amended (16 U.S.C. §§ 703-712) makes it unlawful to, among other things, pursue, hunt, take, capture, kill, transport or import any species listed under the Act. The Act implements conventions between the U.S., Great Britain, Mexico, Japan, and the former Soviet Union.

Executive Order 13186 was issued to assist federal agencies with their efforts to comply with the MBTA. It should be noted that the Executive Order does not constitute any legal authorization that in any way supersedes the requirements outlined in the MBTA. The Executive Order directs federal agencies undertaking actions that have or are likely to have a measurable adverse impact on migratory bird populations to develop and implement a Memorandum of Agreement with the FWS addressing the conservation of these populations.

The initial field survey at the collection system and the 14.9 acre WWTP site found a total of 175 individual birds of 13 species, none of which are native to the Hawaiian Islands. Avian diversity and densities were very low, which is consistent with the current site use as a mature macadamia nut orchard with limited ground cover and few weedy or shrubby species. The field survey did indicate that endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell’s Shearwater (*Puffinus newelli*) have been recorded flying over the general area between April and the end of November each year. Impact avoidance and minimization measures will be implemented, including down-shielding of lights and avoiding nighttime construction during the seabird fledging period. The Proposed Action will also avoid impacts to potential Hawaiian hoary bat habitat (woody plants greater than 15 ft tall) during the bat birthing and pup rearing season (June 1 through September 15), which in turn will also reduce the potential take of migratory birds due to tree clearing during that period.

A secondary field survey of the Project Area in 2023 noted that one additional species, the Hawaiian Hawk (*Buteo solitarius*) was recorded as an incidental observation. It is recommended that a nesting hawk survey be conducted by a qualified biologist within three days ahead of any large stature trees are trimmed or felled to ensure that no active nest is disturbed. It is presently unclear if any such action will occur as part of this Project.



#### 4.15 National Historic Preservation Act (54 U.S.C. § 300101)

The National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. § 300101) requires a federal agency undertaking an action/project consider of the effect of the project on any historic property defined as a district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places.

Section 106 of the NHPA (54 U.S.C. § 306108) requires a federal agency having direct or indirect jurisdiction over a federal or federally assisted undertaking to take into account the effect of the undertaking on any historic property. An “undertaking” includes a “project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency” (54 U.S.C. § 300320). Because the Pāhala LCC Replacement Project will be funded using federal funds, it is considered an “undertaking” and is subject to the NHPA.

The Act requires the federal agency’s preservation-related activities to be carried out in consultation with other federal, state, and local agencies, Indian tribes, Native Hawaiian organizations (54 U.S.C § 306102).

The proposed collection system will be constructed along the existing County streets and two short segments within private easements in the Pāhala community that have been previously disturbed when the streets were constructed. Preliminary analysis shows the proposed treatment and disposal facility will be constructed in an area that does not contain archaeological resources. An AIS, which included pedestrian surveys and subsurface testing, was conducted to confirm the presence or absence of archaeological resources on the 14.9-acre WWTP Site and Collection System Area. Based on the AIS, no properties eligible for inclusion on the National Register of Historic Places are present within the area of potential effects for the 14.9-acre WWTP Site and Collection System Area, and no significant artifacts or cultural deposits on the ground surface and no cultural deposits or lava tubes were encountered during subsurface testing.

Based on the above and in accordance with 36 CFR § 800.4(d), EPA reached a finding of “no historic properties affected for the project or undertaking.” On September 26, 2019, EPA sent a letter to SHPD to document their determination that no historic properties will be affected by the undertaking and to request concurrence from SHPD. The potential for encountering unexpected archeological resources within the Proposed WWTP Site is low due to historical ground modifications and ongoing harvesting activities; however, the Proposed Action will incorporate appropriate mitigation measures should archeological resources be discovered during construction. Specifically, the contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease immediately and the find will be protected from further damage. The contractor will immediately contact SHPD, who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

As part of previous Environmental Assessment efforts, the County conducted an AIS of the 14.9-acre treatment and disposal facility, including subsurface testing of the effluent disposal area. To carry out this AIS, SHPD approved an AIS plan. To meet this requirement, the County submitted the AIS plan to SHPD on March 22, 2018. On April 25, 2018, SHPD requested clarification, and responses, including findings from the 2016 field survey report and a map of the proposed wastewater treatment and disposal facility, were submitted to SHPD on July 31, 2018. SHPD



approved the AIS plan on August 20, 2018, and the County conducted the AIS of the 14.9-acre WWTP in September 2018.

In addition to the AIS, the County is obligated to comply with the National Historic Preservation Act (NHPA). On March 29, 2018, the County initiated consultation for this project in accordance with Section 106 of the NHPA. Consultation letters were sent to various Native Hawaiian Organizations, totaling 15 letters, inviting comments from organizations that may attach religious or cultural significance to properties affected by the proposed actions. A letter dated February 20, 2020 from the SHPD provides concurrence that no historic properties at the Proposed WWTP Site shall be affected, under HRS 63-8 and section 106. The AIS and NHPA Section 106 consultation correspondence can be found in Appendix D and Appendix D-1 of the FEA, respectively.

On March 28, 2024, the designated non-federal representative for consultations under Section 106 of the NHPA, on behalf of EPA and the County of Hawai'i, provided a letter to the SHPD which included an updated description of the project and acknowledged that the project area has remained consistent with previous consultation efforts. The intent of this letter was to determine if Section 106 consultation would need to be re-initiated due to the project updates. On April 4, 2024, SHPD provided an email which concluded that the project would not need to undergo further Section 106 consultation as the project updates under Alternatives 1 and 2 would not change the previous concurrence that no historic properties shall be affected and the agreement for archeological monitoring for identification purposes.

As NHPA requirements have been completed under Alternatives 1 and 2, it is advised that the County seek to consult with SHPD in regards to Alternatives 3 and 4 in accordance with HRS Chapter 6E requirements, and in relation to Section 106 of the National Historic Preservation Act (NHPA) – if triggered – and, to incorporate additional impact avoidance and minimization measures if required for the construction of the IWS.

#### **4.16 Protection of Wetlands (Executive Order 11990 (1977), as amended by Executive Order 12608 (1997))**

Executive Order 11990, Protection of Wetlands, dated 1977 requires federal agencies to avoid, preserve, or mitigate effects of new construction projects on lands which have been designated wetlands. Executive Order 11990 states in order to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative, it is hereby ordered as follows: Section 1. (a) Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; and (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

The National Wetlands Inventory (NWI) Wetlands Mapper and U.S. Geological Survey (USGS) topographic maps identify no wetland features or streams within the Proposed WWTP Site, at the two LCCs, or within the Proposed Collection System Area. Biological and archeological field survey reports do not indicate any standing water or evident wetland vegetation within the area. On August 2018, a biological field survey was conducted at the 14.9-acre WWTP Site and results of



the field work indicated that no wetlands were observed on the site (See Appendix C of the FEA). The man-made drainage feature along Māmalahoa Highway along the edge of the parcel conducts flow generated from surface runoff underneath the highway and downslope to the east. Conditions within the ditch itself close to or on the 14.9-acre project site will not likely satisfy the hydric soil requirement to be defined as a wetland. Streams in the Pāhala area do not flow all the way to the sea, but terminate on Keone'ele'ele Flat to the southwest. Based on this information, the Proposed Action is not expected to impact wetland resources under any of the Proposed Alternatives.

#### **4.17 Rivers and Harbors (33 U.S.C. § 403)**

Originally enacted on March 3, 1899, the Rivers and Harbors Appropriation Act of 1899 affects navigable waters of the U.S. Section 10 of the Act states the creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of the Army; and it shall not be lawful to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army prior to beginning the same (33 U.S.C. § 403).

All project locations are at least 3.3 miles from the shoreline. The Pāhala WWTP package plant and effluent disposal facility is situated about 1,500 feet east of the center line of Hi'onamoa Gulch. The USGS topographic map shows the gulch stops about 5,500 feet from the shoreline. The Proposed Action will not affect any streams or gulches. Based on this, Proposed Action will not affect navigable waters under any of the Proposed Alternatives.

#### **4.18 Safe Drinking Water Act (42 U.S.C. § 300f)**

The Safe Drinking Water Act (SDWA) of 1974 (42 U.S.C. § 300f) was established to protect the quality of all waters actually or potentially designed for drinking use from both underground and aboveground sources. The SDWA authorizes EPA to establish minimum standards to protect potable water with which all owners or operators of public water systems must comply; to oversee the agencies which can be approved to implement these rules on EPA's behalf, such as state governments; and to encourage attainment of secondary standards (nuisance-related). Section 1424(e) of the SDWA of 1974 (Public Law 93-523, 42 U.S.C. 300 et. seq also established the Sole Source Aquifer program which states that no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the EPA Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health.

The Proposed Action does not establish a drinking water system, and no Sole Source Aquifers are present on the Island of Hawai'i. The Proposed Action will provide the infrastructure necessary to enable the County to comply with the SDWA by replacing the existing outdated and federally banned wastewater systems that pose a threat to underground sources of drinking water.





#### **4.19 Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287)**

The Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287, declares that certain selected rivers with their immediate environments, which possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historical, cultural, or other similar values, shall be preserved in their free-flowing condition for the enjoyment of present and future generations. The State of Hawai'i has no designated wild and scenic rivers.

The Wild and Scenic Rivers Act is not applicable to this project.

#### **4.20 Clean Water Act (33 U.S.C. § 1251 et seq.)**

The Clean Water Act established the basis for regulating discharges of pollutants into waters of the U.S. Enacted in 1948, it was originally called the Federal Water Pollution Control Act but became known as the Clean Water Act with the amendments of 1972. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the U.S. and adjacent wetlands from development, water resource projects, mining or other infrastructure projects. Activities are regulated through a permit process that is administered under the responsibility of the U.S. Army Corps of Engineers. Permits may be issued as either Individual Permits for projects with potentially significant impacts or general permits for projects with only minimal adverse effects.

The NWI Wetlands Mapper and USGS topographic maps identify no wetland features or streams within the WWTP Site, at the two LCCs, within the Proposed Collection System Area, or within the future IWS lots. Biological and archeological field survey reports do not indicate any standing water or evident wetland vegetation within the WWTP Site and Collection System Area. On August 2018, a biological field survey was conducted for the proposed WWTP and collection system and results of the field work indicated that no wetlands were observed on the site. The man-made drainage feature along Māmalahoa Highway along the edge of the parcel conducts flow generated from surface runoff underneath the highway and downslope to the east. Conditions within the ditch itself close to or on the property would not likely satisfy the hydric soil requirement to be defined as a wetland.

Because no wetland resources are present and no impacts to wetlands are anticipated due to the nature and design of the WWTP and collection, a Clean Water Act Section 404 permit is not required.

In addition to the above, the Clean Water Act was amended by the Federal Water Quality Act of 1987 which established provisions for a Clean Water State Revolving Fund (33 U.S.C. § 1383), a financial assistance program for water infrastructure projects. The program capitalizes on a partnership between EPA and states to provide loans to eligible recipients through state programs that act as environmental infrastructure banks providing low-interest loans. As stated in Section 2.1.2, the Pāhala LCC Replacement Project is being funded in part by the State of Hawai'i DOH Clean Water State Revolving Fund.



## 5. Existing Environment, Impacts, and Mitigation Measures

### 5.1 Climate

Climate on the Island of Hawai'i and more broadly throughout the state can be characterized as having low day-to-day and month-to-month variability. Differences in the climate of various areas are generally attributed to local differences in geology and topography that create microclimates with different temperature, humidity, wind, and rainfall, and associated local ecosystems (Department of Geography, 1998).

The climate of Pāhala is typical of the predominantly dry condition found in the Ka'ū District. The National Oceanic and Atmospheric Administration (NOAA) designates the Ka'ū area as a Humid Tropical Zone with transitional lowland areas in locations between windward and leeward regions. The area receives less orographic rainfall since it is not oriented normal to trade wind flow and exhibits a distinctive summer dry season.

Temperatures in the Ka'ū District generally range between 70 and 80 degrees Fahrenheit during daylight hours and between 60 and 70 degrees Fahrenheit during night hours. The National Weather Service maintains a rainfall gauge at Pāhala.

Prevailing trade winds in the Ka'ū District area are from the southeast and usually dominate from April to November. Wind speeds average about 15 miles per hour and vary between approximately 10 to 20 miles per hour. Winds from the southwest occur less frequently, mainly during the winter associated with "Kona" storms (Department of Geography, 1998).

Climate conditions in the Ka'ū District are most likely to change in coming decades. Average annual precipitation is also likely to change, but climate models are uncertain in projections for Hawai'i. Based on ensemble model projections available through the U.S. Environmental Protection Agency's (EPA's) Climate Resilience Evaluation and Awareness Tool (CREAT) Climate Scenarios Projection Map, projections for the area surrounding the Pāhala range from a minor decrease in annual precipitation up to considerable increases in annual precipitation by 2060, depending on the model scenario (hot/dry vs. warm/wet). Other climate concerns include sea level rise to coastal areas.

#### **Impacts and Mitigation Measures:**

##### *Alternatives 1 and 2 - Package Plant:*

Under these alternatives, the construction phase may result in temporary greenhouse gas emissions due to heavy equipment operations and the transportation of supplies to the WWTP project site and along the streets for the new collection system. However, these emissions will be temporary during the construction period. Once, construction has been completed, emissions and green house gases should return to current conditions.

Regarding long-term climate impacts, the project's wastewater treatment and disposal facility does not discharge to surface water sources, and therefore, it is unlikely to significantly affect local temperature or precipitation patterns. Climate models suggest some variability in precipitation, but this is not expected to be substantially influenced by the project.



The project's design takes into consideration the potential for increased storm intensity due to climate change. Berms will be constructed at the 14.9-acre WWTP project site to contain stormwater during intense weather events, ensuring the facility's resilience to changing storm patterns.

*Alternatives 3 and 4 - Individual Wastewater System Program:*

Alternatives 3 and 4 involves the implementation of an IWS Maintenance Contract Model or Operating Permit model. This alternative would require construction activities on individual parcels including measures to contain storm water runoff during storm events.

The climate impacts are like those in Alternatives 1 and 2, with the project not significantly affecting local climate conditions. The design includes measures to address potential changes in storm intensity, ensuring the facility's resilience.

*No-Action Alternative:*

Under the No-Action Alternative, the existing LCCs continue to operate without any modifications. These LCCs are at risk of impacts due to climate change, specifically changes in precipitation patterns, increased storm intensity, and potential sea level rise.

Climate change-related impacts on the existing LCCs could result in risks to groundwater and surface water quality. Increased storm intensity and altered precipitation patterns may exacerbate the challenges of managing wastewater in these LCCs, potentially leading to overflows or groundwater contamination.

Note, the No-Action Alternative does not involve any mitigation measures to address climate-related risks.

## **5.2 Physiography**

### **5.2.1 Topography**

The Pāhala community is situated on the slope of Mauna Loa, located west (mauka) of Māmalahoa Highway. The community encompasses an area of approximately 0.61 square miles. The developed region of Pāhala exhibits a gradual slope, sloping at approximately 6 percent from the northwest to the southeast. The community spans from an elevation of 1,000 feet above mean sea level (msl) to 800 feet above msl, covering a horizontal distance of roughly 3,500 feet.

The streets within the community are designed to follow the natural contours of the terrain, maintaining level or appropriately sloped grades to facilitate vehicular travel. Consequently, on certain streets, residential lots on the downhill side of the road are situated several feet below the road surface, while those on the uphill side are elevated several feet above it.

The existing topography in Pāhala is characterized by these gently sloping to moderately steep terrains, which play a significant role in the community's layout and land use patterns.



## Impacts and Mitigation Measures:

### Alternatives 1 and 2 - Package Plant:

The topographical conditions under Alternative 1 are consistent with the existing conditions. Construction activities for the new collection system and treatment facility will involve grading and earthwork primarily at the 4.0-acre package plant site. Erosion control measures will be implemented to prevent soil erosion and maintain the existing topographic conditions. Excavation depths of 4 to 10 feet would be needed to place the various components of the package plant. The effluent disposal facility would require excavation of trenches of up to 3 to 4 feet would be needed to place the subsurface drip irrigation lines. The affected areas would be restored to approximately existing conditions.

The wastewater collection system would be constructed within the right-of way of the public streets plus three segments within easements. The trenches are typically about 3 feet wide and at least 6 feet deep. Due to the existing topography, several parcels may require installations of pumps to pump the flows to the street level. Once the line is placed in the trench, the affected area would be backfilled to restore the area to existing conditions which means minimal effect on the topographic conditions of the area. Proper erosion control measures will be implemented to prevent potential soil erosion during the construction period. Construction of the package plant, subsurface irrigation system and collection system would not create significant changes to the existing topographic conditions of the Pāhala area.

### Alternatives 3 and 4 - Individual Wastewater System Program:

The topography for Alternatives 3 and 4 aligns with the existing conditions in Pāhala. Construction activities for the IWS will involve excavation for placement of the septic tank and absorption bed. Once the tank and effluent disposal system have been put into place, minor grading will be needed to restore the affected area. Erosion control measures will be implemented during construction to prevent runoff and soil erosion during storm events. These measures will be designed to protect the existing topographic conditions of the surrounding area.

### No-Action Alternative:

Under the No-Action Alternative, the existing LCCs are situated within the existing topography. There are no modifications or construction activities associated with this alternative, and the topography remains unchanged.

Proper erosion control measures will be implemented to minimize potential impacts on the topography during construction activities, ensuring its preservation. Overall, the topography in the Pāhala area is not anticipated to undergo significant alterations as a result of the proposed project alternatives.



## 5.2.2 Geology

The Island of Hawai'i was formed by the activity of five shield volcanoes. These shield volcanoes are Kohala (extinct), Mauna Kea (has had activity during recent geologic time), Hualalai (last erupted in 1801), and Mauna Loa and Kilauea (both of which are still active).

The project site is situated at the eastern end of the island and on the lower, southeastern flank of the Mauna Loa Volcano. This volcano appears to be made up of at least two huge shield volcanoes built around two separate eruptive centers, referred to as the Mauna Loa shield. The Mauna Loa shield has been built principally by eruptions along two rift zones that extend in a southwest and east-northeast direction from the caldera. Rift zones are elongated areas of ground fissures where volcanic activity such as earthquakes and volcanic eruptions are concentrated. In contrast, few eruptions have taken place along the lower northeast rift zone.

Pāhala is situated on the slopes of Mauna Loa. The surrounding area consists of several inter-stratified beds of volcanic ash that sit upon the exposed bedrock. The Pāhala area is known to contain lava tubes, which often occur in many places around the Island of Hawai'i. Generally, a lava tube is a natural conduit or a void that forms when molten lava flows beneath the hardened surface of a previous lava flow. When the volcanic eruption stops, and the lava drains out, a lava tube forms in the void. Lava tubes can range in size from a few inches to more than 25 feet in diameter. The tubes are generally not visible from the surface, and the diameter and length can usually be identified only through subsurface probing or geophysical surveys.

### **Impacts and Mitigation Measures:**

#### *Alternatives 1 and 2 - Package Plant:*

A geotechnical investigation of the 14.9-acre WWTP project site showed the presence of a lava tube on a portion the plant site. However, the approximately 4.0-acre package plant has been sited to avoid the lava tube. The effluent irrigation system would only require relatively shallow excavation for placement of the effluent disposal lines which would not affect the geological characteristics of this area of Pāhala.

Grading, excavating, and fill activities during construction of the WWTP package plant and effluent disposal system and the new collection system would occur no deeper than approximately 10 feet below grade and thus would not have significant impacts on the geology in the Pāhala area. If/when bedrock is encountered during excavation for the proposed actions, removal would be accomplished using excavators or hydraulic hoe rams and/or pneumatic drill hammers consistent with other construction activities on the Hawaiian Islands.

#### *Alternatives 3 and 4 - Individual Wastewater System Program:*

Alternatives 3 and 4 involves the installation and maintenance of the IWS. While this alternative may require construction activities that could disturb deeper geological layers (possibly up to 8 to 10 feet), this depth of excavation should not affect the geology of the Pāhala area. Notwithstanding these activities, the April 2023 PER indicated construction/installation of an IWS can be a relatively invasive process to a homeowner,



involving large equipment such as excavators and cranes and removal of fencing, trees and landscaping and, in some cases, small structures. Moreover, determining a path to bring large equipment to the IWS site would need to account for building/structures footprints and roof overhangs and soffits.

No-Action Alternative:

Under the No-Action Alternative, the existing LCCs continue to operate without any modifications. This alternative does not involve any construction activities or modification to the existing conditions, and therefore would not cause any impacts to geology in the Pāhala area.

### 5.2.3 Soils

According to the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) Soil Survey of the island, soils types within the Pāhala area possess moderately high to high permeability characteristics and consist of well-drained soils formed of volcanic ash. Specifically, the area includes the following soil profiles:

- Map Unit Symbol (MUSYM) 521 – Nā’ālehu medial silty clay loam, 3 to 10 percent slopes
- MUSYM 522 – Nā’ālehu medial silty clay loam, 10 to 20 percent slopes
- MUSYM 567 – Pu’u’eo – Nā’ālehu complex, 3 to 10 percent slopes

**Impacts and Mitigation Measures:**

All Proposed Alternatives

Construction of the new collection system would occur below the travelways or shoulders of the streets in the Pāhala community. As these areas were previously disturbed upon construction of the streets, the collection system would not create adverse impacts to soils in the area.

Construction of the any of the alternatives would require vegetation removal, clearing, and excavation. These activities would involve subsurface and surface disturbance to the soils of the affected areas. These impacts can be mitigated through incorporating appropriate stormwater and erosion control measures to ensure that soil erosion and transport during construction activities are minimized. Typically, the construction plans and documents would include erosion control plans which the construction contractor would need to follow.

No-Action Alternative

Under the No-Action Alternative, the existing LCCs would continue to operate without any modifications. This alternative does not involve any construction activities or modification to the existing conditions, and therefore would not cause any impacts to soils in the Pāhala area.



## 5.3 Water Resources

### 5.3.1 Surface Waters

The Pāhala community is situated between two surface water sources, with Pā'au'au Gulch to the north and east and an unnamed branch of Hionamoa Gulch to the south and west. According to USGS topographic maps, the flows from Pā'au'au Gulch terminate about 6,500 feet from the coast, while the unnamed branch joins Hionamoa Gulch approximately 3,000 feet southwest of Maile Street. The flows from Hionamoa Gulch also cease about 6,000 feet from the coast.

Water resources in the area are crucial for both the existing wastewater treatment systems and the local community. Groundwater and surface water sources play a vital role in sustaining the environment and supporting agriculture.

According to the April 2023 PER, the DOH Wastewater Branch has assigned three-priority levels to each of the 88,000 cesspools across the state of Hawai'i. These priority levels ranged from Priority 1: Significant Risk of Human Health Impacts, Drinking Water Impacts, or Draining to Sensitive Waters to Priority 4: Impacts Not Identified. Priority 1 and 2 areas would be required to upgrade sooner and to higher levels of treatment. Under this priority classification system, the Pāhala area fell under Priority 4, the lowest of those available, as an area for which health and environmental risks had not been assessed or appeared low. Subsequently, a more comprehensive 2021 study that explored Hawai'i's cesspool prioritization, factoring in a total of 15 risk factors, reached a similar conclusion.

#### **Impacts and Mitigation Measures:**

##### *Alternatives 1 and 2 - Package Plant:*

Under Alternative 1, construction activities may temporarily impact water resources. The cumulative areal extent of disturbance for the wastewater treatment and disposal facility and the new collection system would require coverage under a National Pollutant Discharge Elimination System (NPDES) construction stormwater permit. Normally, this permit would mandate the implementation of best management practice (BMP) measures, such as silt fences, filter socks, and sediment traps to control sediment runoff. Since the NPDES permit requires detail information about the means and method of construction, the selected contractor would need to submit the plans and documents to the DOH.

Construction trenches would be designed not to extend deeper than approximately 10 feet below grade when feasible, minimizing disturbance to the geology in the Pāhala area. It should be noted that construction trenches may need to exceed 10 feet in depth in some design locations. A Site-Specific Construction BMP plan would be developed to prevent stormwater runoff along the collection system during construction.

The on-site drainage plan, as per Hawai'i County Code, Chapter 27, Section 20, would ensure that runoff caused by the construction activities in the 14.9-acre package plant and effluent disposal area would need to account for expected one-hour, ten-year storm event, is retained within the site boundaries. Landscape buffers with dirt berms would act



as secondary containment during large storm events, further safeguarding against adverse impacts on adjacent or downstream properties.

Overall, construction-related impacts on surface water resources under Alternatives 1 and 2 are expected to be temporary, with BMPs effectively minimizing potential impacts.

*Alternative 3 - Individual Wastewater System-Maintenance Contract Model:*

Alternative 3 entails the implementation of an IWS Maintenance Contract Model which, when properly designed and operated, can be an effective means of wastewater management; however, IWS that are poorly designed and maintained have been nationally recognized as having high failure rates. In order to ensure that the systems function as intended, the design must take into account a variety of technical considerations including system size, site conditions, location, subsurface soil characteristics, influent characteristics, and level of treatment.

Should the IWS begin to fail, untreated sewage containing pathogens (e.g., E. coli), nutrients and other harmful substances could be discharged into the groundwater or into nearby surface waters.

In the event that the County opts to pursue the IWS Alternatives, the implementation of BMP measures, including silt fences, filter socks, and sediment traps, would be required during construction at each IWS site to control sediment runoff. Construction trenches would generally not extend deeper than approximately 10 feet below grade.

Overall, construction-related impacts on surface water resources under Alternative 3 are anticipated to be temporary and localized, with BMPs effectively minimizing potential impacts.

*Alternative 4 - Individual Wastewater System-Operating Permit to Homeowners:*

Alternative 4 involves the implementation of an IWS Operating Permit model. As noted under Alternative 3, a properly designed and operated IWS can be an effective means of wastewater management; however, IWS that are poorly designed and maintained have been nationally recognized as having high failure rates and have been linked to contaminated groundwater resources. Under Alternative 4, the homeowner will be responsible for operating and maintaining the IWS while the County is responsible for issuing maintenance notifications to the homeowner.

Like the other alternatives, construction activities may temporarily impact water resources. The implementation of BMP measures, including silt fences, filter socks, and sediment traps, would be required during construction to control sediment runoff. Construction trenches would generally not exceed approximately 10 feet below grade.

Construction-related impacts on surface water resources under Alternative 4 are expected to be temporary and localized, with BMPs effectively minimizing potential impacts.





No-Action Alternative:

Under the No-Action Alternative, which involves the continued operation of the existing LCCs without modifications, there would be no construction activities or modifications to existing conditions. Therefore, this alternative would not cause any impacts to geology or surface water resources in the Pāhala area.

It's important to note that the No-Action Alternative does not involve any mitigation measures to address potential stormwater-related risks associated with the existing LCCs.

### 5.3.2 Groundwater

Groundwater occurs within portions of geologic formations where aquifers receive and store water. Depending on the geologic conditions of the area, many communities and areas on the island rely on groundwater wells to obtain drinking water. To protect the quality of underground sources of drinking water from contamination by subsurface disposal of fluids, Hawai'i has adopted the Underground Injection Control (UIC) program administered by the DOH Safe Drinking Water Branch. Hawai'i Revised Statutes (HRS) 340 E and Hawai'i Administrative Rules (HAR) 11-23 (Underground Injection Control) set forth the requirements related to protection of underground sources of drinking water.

Under HAR 11-62, Appendix F, a minimum separation of 1,000 feet from existing wells is required for wastewater treatment sites.

On April 3, 2018, in response to the previously issued Draft EA pre-assessment notification, the DOH Safe Drinking Water Branch indicated that the proposed WWTP Site is located above the UIC line and, as such, on top of underground sources of drinking water. To avoid impacts to drinking water wells, sewage injection wells cannot be constructed above the UIC line.

The CWRM indicated that one County and one private well are located in the Pāhala area. The CWRM confirmed that the County well and storage tank are located approximately 5,300 feet north of the WWTP Site. The tank lies at about 1,120 feet above msl, which is approximately 480 feet higher in elevation than Pāhala WWTP site. A private well is located within TMK 9-6-002:016, the parcel that contains the existing LCC 1 and lies adjacent to the WWTP Site. The CWRM has indicated this well is used for agricultural purposes, not for domestic purposes.

### Impacts and Mitigation Measures

Alternatives 1 and 2 - Package Plant:

The approximately 6-foot trenches needed to support the collection system would be relatively shallow in relation to groundwater resources in the Pāhala area. Thus, construction of the collection system would not affect groundwater resources in the area.

The separation (both elevation and horizontal distance) between the Pāhala WWTP site and the upgradient location of the County drinking water well, would mean construction and operation of the treatment and disposal facility would not affect potable groundwater resources in the Pāhala area.



While use of the two existing LCCs has not resulted in documented impacts to groundwater or drinking water resources, abandonment of the LCCs would remove a potential source of such impacts. Abandonment of the existing wastewater collection system would not affect groundwater within the affected areas.

*Alternative 3 and 4 - Individual Wastewater System Program:*

Alternatives 3 and 4 entail the implementation of an IWS program which, when properly designed and operated, can be an effective means of wastewater management; however, IWS that are poorly designed and maintained have been nationally recognized as having high failure rates. To ensure that the systems function as intended, the design must take into account a variety of technical considerations including system size, site conditions, location, influent characteristics, and level of treatment.

Should the IWS begin to fail, untreated sewage containing pathogens (e.g., E. coli), nutrients and other harmful substances can be discharged into the groundwater or into nearby surface waters.

In the event that the County opts to pursue the IWS Alternatives, the implementation of BMP measures would be required at each site, including silt fences, filter socks, and sediment traps to control sediment runoff.

Overall, construction-related impacts on groundwater water resources under Alternatives 3 and 4 are anticipated to be temporary and localized, with BMPs effectively minimizing potential impacts.

*No-Action Alternative:*

The No-Action Alternative has the potential to adversely impact groundwater resources due to the continued operation of the existing LCCs. EPA regulations mandate the closure of LCCs to prevent potential impacts on groundwater resources.

## **5.4 Agricultural Lands**

On November 1965, the Land Study Bureau (LSB) at the University of Hawai'i issued L.S. Bulletin No. 6, *Detailed Land Classification–Island of Hawai'i*. The LSB compiled and interpreted data on geology, topography, climate, water resources, soils, and crops and conducted field investigations to create a land classification for the island. Bulletin No. 6 assigned two types of ratings for each land type: the overall or master productivity rating, which reflects degree of overall suitability for agricultural use, ranging from A (Very Good) to E (Very Poor); and selected use ratings, which indicate the degree of suitability for selected use alternatives. Bulletin No. 6 has not been revised or re-issued and remains as the reference document for lands classified by the LSB.

In addition to the LSB rating, the State of Hawai'i has developed the Agricultural Lands of Importance to the State of Hawai'i (ALISH) Classification System. This system was developed and compiled in 1977 by the State Department of Agriculture with assistance from the NCRS, U.S. Department of Agriculture (formerly the Soil Conservation Service) and the College of Tropical Agriculture at the University of Hawai'i as part of a national effort to inventory important



farmlands. Lands not considered for classification within this system are developed urban lands (over ten acres), natural or artificial bodies of water (over ten acres), public use lands, forest reserves, lands with slopes in excess of thirty-five percent, and military installations (except undeveloped areas over ten acres). The ALISH Classification System identifies the following three categories of land (equivalent NRCS categories in parentheses):

- Prime Agricultural Lands (Prime Farmlands) – Land that has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods.
- Unique Agricultural Lands (Unique Farmlands) – Land that has a special combination of soil quality, location, growing season, and moisture supply, and is used to produce sustained high-quality yields of a specific crop when treated and managed according to modern farming methods.
- Other Important Agricultural Land (Additional Farmland of Statewide and Local Importance) – Land other than Prime or Unique Agricultural Land that is also of statewide or local importance to agricultural use.

The 2017 US Census Bureau, Census of Agriculture-County Data provides the most recent information related to acreage planted for various fruits and nuts across the state and for each county. The 2017 data show a total of 18,170 acres of macadamia nuts were planted in the state, with 17,504 acres planted in the County, comprising about 96.3 percent of the state total.

## **Impacts and Mitigation Measures**

### *Alternatives 1 and 2 – Package Plant*

The LSB rating indicates the collection system project site as “not rated”, the rating assigned to developed communities, and a master productivity rating of “D 129” (poor) for about 50 percent of the proposed wastewater treatment and disposal facility at the WWTP Site, with the remainder “B” (good). D 129 includes soils from the Māmalahoa series, deep depth, volcanic ash, stony, well drained, and very poorly suited for mechanical agitation / tilling. The ALISH map shows the collection system is located in “unclassified” lands. The ALISH map shows the proposed wastewater treatment and disposal facility would be located on approximately 20 percent “prime”, 40 percent “other” and 40 percent “unclassified” land.

Construction of the collection system within the County roads would not affect agricultural lands or the acreage utilized for the macadamia nut orchard.

Construction of the Pāhala WWTP package plant would require removal of approximately 4.0-acres of macadamia nut trees. Although the remaining macadamia nut orchard would not be removed, use of the trees for effluent disposal means the lands could not be used as a productive macadamia orchard. This removal would amount to less than 0.1 percent of the total County lands planted with macadamia nut trees, which would not substantially affect the total macadamia nut acreage in the state or the County.



Abandonment of the two LCCs would reduce the potential for contamination of groundwater that is used for irrigation of agricultural lands. Otherwise, abandonment of the LCCs and the existing wastewater collection system would not affect agricultural lands within the affected areas.

*Alternatives 3 and 4 – Individual Wastewater System Program:*

As indicated by the LSB rating system, the lots identified for the IWS installation are “not rated” which is assigned to developed communities. Installation of the IWS would not affect agricultural lands.

*No-Action Alternative*

The No-Action Alternative would not impact agricultural lands. Continued operation of the existing LCCs could introduce pathogens and other contaminants to groundwater sources used for irrigation of agricultural lands.

## **5.5 Natural Hazards**

The Disaster Mitigation Act of 2000, (Federal Emergency Management Agency (FEMA), 44 Code of Federal Regulations, Hazards Mitigation Planning required States and Counties to have approved hazard mitigation plans as of November 1, 2004 to receive Pre-Disaster Mitigation funding. The development of State and local hazard mitigation plans is critical for maintaining eligibility for future FEMA mitigation and disaster recovery funding.

Given Hawai'i's vulnerability to natural hazards and history of disasters, the State has maintained and implemented a comprehensive, multi-hazard mitigation strategy to reduce loss of life and property damage. This strategy is embodied in the *2018 State Multi-Hazard Mitigation Plan*. This plan identifies the major natural hazards that affect the state's population, property, and infrastructure to the specific hazard, and recommends actions that can be taken to reduce the risk and vulnerability to the hazard. The State Hazard Mitigation Plan also contains a description of programs, policy, statutes, and regulations applicable to hazard mitigation. It should be noted that the 2023 update to this plan has begun and is expected to be released at the end of 2023.

Identified major natural hazards that could affect the State, as well as the County are Climate Change Effects (including sea level rise (SLR)/coastal erosion), floods, tsunamis, strong, windstorms/hurricanes, earthquakes, landslides/rockfalls, volcanic activity, and wildfires.

### **5.5.1 Sea Level Rise**

Sea level is rising at increasing rates due to global warming of the atmosphere and oceans and melting of the glaciers and ice sheets. Rising sea level and projections of stronger and more frequent El Niño events and tropical cyclones in waters surrounding Hawai'i indicate a growing vulnerability to coastal flooding and erosion. The Hawai'i Sea Level Rise Vulnerability and Adaptation Report (2017) modeled exposure to chronic coastal flooding and erosion using projections from the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report (IPCC, 2014) where the high-end scenario was up to 3.2-ft of sea level rise by the end of the century (Courtney et al., 2020).



## Impacts and Mitigation Measures:

### All Proposed Alternatives

No short- or long-term impacts are anticipated during the construction or operation of any of the alternatives. The Pāhala community is located approximately 3.3 miles from the nearest coastline and at elevation from 500 to 1,500 feet above Mean Sea Level (MSL). The community is not anticipated to be impacted by sea level rise under any of the proposed alternatives.

### 5.5.2 Flood and Tsunami Threat

The Pāhala community is located between two surface water sources, Pā'au'au Gulch to the north and east, and an unnamed branch of Hi'onamoa Gulch to the south and west. The USGS topographic map shows flows from Pā'au'au Gulch end about 6,500 feet from the coast, while the unnamed branch flows into Hi'onamoa Gulch about 3,000 feet southwest of Maile Street. Flows from Hi'onamoa Gulch end about 6,000 feet from the coast. Figure 3.1 illustrates the known streams and gulches within the Pāhala area.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel No. 155166 1800F, effective date September 29, 2017, shows no special flood hazard areas present in the Pāhala WWTP site and that most of the Pāhala area is located in *Zone X*, which designates areas determined to be outside the 0.2- percent annual chance (500-year) floodplain. A small portion of the community of Pāhala, including some land within the collection system project site, is located within *Zone X – Other Flood Areas*, indicating areas within the 0.2- percent annual chance (500-year) floodplain, or areas with a 1-percent annual chance of flooding with average flood depths less than 1 foot.

According to the FIRM, both existing LCCs are also located within *Zone X*. However, LCC 1 is very close to the edge of the 500-year floodplain.

## Impacts and Mitigation Measures:

### All Proposed Alternatives

Based on the above, no significant impacts on flood hazards are anticipated to occur within the Pāhala region as a result of any alternative considered.

### 5.5.3 Hurricane and Wind Hazard

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The State has been affected once by the significant hurricane (rated Category 3 and higher) Iniki in 1992. Not all identified hurricane and strong wind storm threats make landfall in Hawai'i, and actual hurricane strikes in Hawai'i are relatively rare in modern record. More commonly, near misses that generate large swell and moderately high winds causing varying degrees of damage are the hallmark of hurricanes passing close to the islands.



During hurricanes and storm conditions, high winds cause strong uplift forces on structures, particularly on roofs. Wind-driven materials and debris can attain high velocity and cause devastating property damage and harm to life and limb. Along the coastline, a surge of water, topped by battering waves can move ashore into low lying coastal areas. Due to differences in atmospheric pressure, tidal stage, coastal topography, and location relative to the eye of the hurricane it is difficult to predict how hurricane-induced storm surge may impact a specific location. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The Project Area is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

#### **Impacts and Mitigation Measures:**

##### *All Proposed Alternatives*

While rare, the threat of hurricanes is present across the State of Hawai'i. Construction activities could potentially exacerbate the effect of hurricanes if loose materials are not secured prior to the event of a storm and become flying debris. To minimize this hazard, construction materials and equipment would be stored properly when not in use, consistent with construction best management practices.

To safeguard against hurricane damage in the long-term, proposed action improvements would be designed in compliance with American Society of Civil Engineers and International Building Code standards for wind exposure.

#### **5.5.4 Seismic Hazard**

Seismic hazards are those related to ground shaking. Landslides, ground cracks, rock falls and tsunamis are all seismic hazards. Thousands of earthquakes occur every year in the State of Hawai'i. Earthquakes in the Hawaiian Islands are associated with volcanic eruptions or tectonic movements. Most of these earthquakes are closely related to volcanic processes and are so small they can only be detected by seismometers. Volcanic hazards in the area are of particular concern given to the active status of the islands volcanoes. One of the larger and more recent earthquakes occurred offshore of Puakō, Hawai'i in 2006. The earthquake measured 6.7 on the Richter Scale and caused minor damages to structures and buildings. Although difficult to predict, an earthquake of sufficient magnitude causing structural or other property damage may occur in the future.

#### **Impacts and Mitigation Measures:**

##### *All Proposed Alternatives:*

Hawai'i County Code (HCC) § 5A indicates the "International Building Code, 2006 Edition" (IBC) – copyrighted and published in 2018 by the International Code Council, Incorporated – is adopted by the County. Chapter 5 is the applicable code for the construction of buildings, structures, and facilities in the County. The purpose of the seismic provisions in the IBC is primarily to safeguard against major structural failures and loss of life; limiting damage or maintaining functions is not a primary purpose. At a minimum, structures are to be designed and constructed to resist the effects of ground motions from seismic



events. The seismic hazard characteristics described in the IBC are based on the seismic zone and proximity of the site to active seismic sources.

The proposed improvements would be designed and constructed to meet the requirements of the 2016 IBC and HCC Chapter 5 and would comply with seismic loadings established for the County of Hawai'i. This would minimize the potential for an uncontrolled release of untreated or partially treated sanitary wastewater, or diesel fuel from the tank being held for the emergency generator during a seismic event. The County would also develop a facility management plan in accordance with applicable rules and regulations.

*No-Action Alternative:*

The No-Action Alternative includes no construction or modification to existing conditions, and therefore would not impact seismic hazards in the Pāhala area.

### **5.5.5 Volcanic Hazard**

The US Geologic Survey (USGS) prepared a volcanic hazard zone map for the island of Hawai'i which was last updated in 1997. The map shows lava flow hazard zones for the five on-island volcanoes. The map utilizes a 9-point ranking system which classifies zones ranked from 1 (highest hazard) through 9 (lowest hazard) based on the probability of coverage by lava flows.

Pāhala area has been assigned a rating of Zone 3. This designates areas which are less hazardous due to their distance from recently active vents. One to five percent of areas within the Zone 3 rating have been covered by eruptions since 1800, and 15 to 75 percent have been covered within the past 750 years.

#### **Impacts and Mitigation Measures:**

*All Proposed Alternatives*

Based on the volcanic hazard map, the potential for damage to buildings and structures is moderate, given the distance between the Pāhala community and active vents and hazards. At this time, the County has no construction restrictions in Zone 3 areas. Thus, the volcanic hazard designation would not affect the construction and operation of the collection system or the treatment and disposal facilities. Although the potential for volcanic activity in or around Pāhala is present, the likelihood of that impact is relatively small. In the event of a volcanic eruption that threatens the Pāhala area, it is likely that damage would occur to residences, the treatment and disposal facility, the collection system, and other assets in the area. There are no mitigation measures to prevent the potential impacts from volcanic activity, and the impacts would be similar regardless of the location of the treatment and disposal facility or treatment system employed.

*No-Action Alternative*

The No-Action Alternative includes no construction or modification to existing conditions, and therefore would not impact volcanic hazards in the Pāhala area.



### 5.5.6 Wildfire Hazards

Wildfires can threaten life and property, but they can also harm the environment and threaten important natural resources such as endangered species. While sometimes caused by lightning, nine out of ten wildfires are human-caused. Put simply, "wildfire" is the term applied to any unwanted and unplanned fire burning in forest, shrub or grass regardless of whether it is naturally or human induced (DEM, 2020).

All of the Hawaiian Islands are susceptible to wildfires, especially during prolonged drought and high winds. In recent years, the average annual cost to suppress wildfires in Hawai'i is about \$1,100,000 - making it a Statewide risk (DEM, 2020). The greatest danger of fire is where wildlands border urban areas. Through August, 2018, wildfires in Hawai'i have burned 30,000 acres (about double the annual average). Historically, the majority of these fires have been directly caused by humans, either directly or by negligence. The Project Site is not located in an at risk area for wildfires; however, the community to the north of the Project Site is noted as a High Risk area for wildfire which may potentially impact the Project Area in the event of a wildfire. As further evidenced by recent events in West Maui, wildfires pose a significant threat to health and human safety, and must be taken very seriously.

#### **Impacts and Mitigation Measures:**

##### Alternatives 1 and 2

While the proposed alternatives are not anticipated to have impacts that could result in wildfire events, the Pāhala area is considered to be an area that is at high risk for wildfires. The State Department of Land and Natural Resources-Division of Forestry and Wildlife (DLNR-DOFAW) has adopted a Fire Management Handbook, which specifies its standards for prevention, pre-suppression, and suppression. The document provides a structured approach in providing for public/firefighter safety and minimizing damage to Hawai'i's environment. Funding for the fire management program is provided by the State's general fund and federal cost share programs through the U.S. Forest Service. These programs include the Rural Community Fire Protection and Rural Fire Protection and Control programs. Additionally, the DLNR-DOFAW is a key agency within the State who can trigger provisions of the Stafford Act (Fire Suppression Assistance), which provides for FEMA funding assistance in situations where forest and grass fires on public or private lands threaten a major disaster to communities and economies.

The package plant and related facilities would be designed according to National Fire Prevention Association (NFPA) 820 "Standard for Fire Protection in Wastewater Treatment and Collection Facilities." In accordance with Hawai'i Fire Department requirements, Fire Department access and water supply to the proposed WWTP site would be designed to comply with Chapter 18 of NFPA 2006 Uniform Fire Code as amended by the County.





### Alternatives 3 and 4

The IWS systems do not include construction of facilities which would be susceptible to fire hazards.

### No-Action Alternative

The No-Action Alternative includes no construction or modification to existing conditions, and therefore would not impact wildfire hazards in the Pāhala area.

## 5.6 Flora and Fauna

The Pāhala community and its surrounding areas contain a variety of vascular plant species. An initial botanical field study conducted in August 2018 at the Proposed WTP site indicated the presence of various plant species, including ornamental plants in maintained yards. Among the species observed, only two species (*Ipomoea indica* and *Waltheria indica*) are regarded as native to the Hawaiian Islands, both of which are indigenous and widely distributed. These indigenous species are not listed as threatened, endangered, or of any special concern. Additionally, the macadamia nut orchards in the area are valuable commercial botanical resources but are not considered environmentally sensitive. Cook pines (*Araucaria columnaris*) lining Maile Street along the western border are considered important elements of the local landscape.

In October 2023, a second botanical survey was conducted in the Project Area. This survey started on Maile Street near the intersection with Maoula Road and proceeded along the route of the proposed IWS lots. For the streets occupied by residential lots, the botanists walked the streets noting the plants observable in the yards to create a separate list (of mostly landscape species) to support a conclusion that few if any sensitive species are likely to occur on the Project Area. Consistent with the 2018 survey, the 2023 survey indicated the presence of various plant species, including ornamental plants in maintained yards. Among the species observed, only two species (*Ipomoea indica* and *Waltheria indica*) are regarded as native to the Hawaiian Islands, both of which are indigenous and widely distributed. The survey establish that listed species, indeed native species as only were observed are unlikely to be encountered in areas subjected to disturbance during the construction of the Proposed Action.

The general area surrounding Pāhala supports a limited range of mammalian and avian species. An initial biological field survey conducted in August 2018 at the proposed WWTP site identified terrestrial mammalian species, with the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), as alien species, most of which are widespread and ubiquitous on the Island of Hawai'i. The survey did not record any mammalian species within the surveyed area. The community reported occasional use of the area for pig hunting, but there was no indication of pig (*Sus scrofa*) presence during the survey.

In October 2023, a second biological field survey was conducted for the Project Area. During this study, sign of pigs were encountered in the undeveloped area just west of the town along Maile Street. Additionally, in 2023, the study heard and observed numerous dogs (*Canis lupus familiaris*) across the neighborhood area. It is likely that one or more of the four Muridae (rats and mice) found on the Island—roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mouse (*Mus musculus domesticus*) use



resources within the general Project Area on a seasonal basis. These introduced rodents are deleterious to native ecosystems and native faunal species.

The initial avian survey conducted in August 2018 at the Proposed WWTP site identified avian species in the general area. The survey recorded a limited diversity of avian species, primarily consisting of established alien species. No native avian species were recorded during the survey. The general area occasionally witnesses the presence of endemic Hawaiian Petrel (*Pterodroma sandwichensis*) and Newell's Shearwater (*Puffinus newelli*) flying over, mainly between April and the end of November each year. These seabirds are listed as endangered and threatened, respectively, under both Federal and State endangered species statutes and are susceptible to adverse impacts from outdoor lighting, which can lead to disorientation, fallout, and injury or mortality.

The second avian survey conducted in 2023 identified total of 129 individual birds of 14 species, representing 10 separate families, was recorded during station counts. One additional species, Hawaiian Hawk (*Buteo solitarius*) was recorded as an incidental observation. The remaining 14 species recorded are commonly encountered established introduced species. The avian diversity and densities observed during the surveys are consistent with the habitats present in the area and usage of the properties. Four species—House Sparrow (*Passer domesticus*), Zebra Dove (*Geopelia striata*), Northern Cardinal (*Cardinalis cardinalis*), and Japanese White-eye (*Zosterops japonicus*)—accounted for 44% of all birds recorded during station counts over the course of the two surveys. The most frequently recorded species was House Sparrow, which accounted for 12% of the total number of individual birds recorded during station point-counts.

It is possible that the endangered Hawaiian hoary bat (*Lasiurus semotus*) uses resources within the Project vicinity. This bat is regularly seen in the Project area (David, 2023) and tall trees suitable for roosting are present here. This bat species is solitary and rare but with a widespread distribution on Hawai'i. Island. However, the bat uses multiple roosts within a home territory (Bonaccorso, 2015), so the disturbance associated with removal of any particular tree would be minimal. An exception might be during the pupping season if a female bat carrying a pup or an unattended pup is in a tree being felled, these individuals could be unable to flee the tree.

### **Impacts and Mitigation Measures:**

#### All Proposed Alternatives:

Based on the findings of the botanical and biological field surveys, construction activities associated with the new collection system and wastewater treatment and disposal facility are not anticipated to result in adverse impacts to botanical and faunal resources in the Pāhala area.

The operations building in the 4.0-acre package plant will feature down-shielded light fixtures to minimize the potential for adverse impacts on avian species.

For Alternatives 1 and 2, the DOH initiated consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to Section 7 of the Endangered Species Act which was completed under the 2020 FEA. The Project Description as presented in Section 2 of this EID has



been slightly modified from the 2020 FEA; however the project area and activities remain consistent.

On February 23, 2024, the designated non-federal representative for consultations under Section 7 of the Endangered Species Act, on behalf of EPA and the County of Hawai'i, provided a letter to the FWS which included an updated description of the project and acknowledged that the project area has remained consistent with previous consultation efforts. The intent of this letter was to determine if Section 7 consultation would need to be re-initiated due the project updates. On March 11, 2024, FWS provided an email which concluded that the project would not need to undergo further Section 7 consultation as there were no significant changes to the project footprint or associated activities. The avoidance and mitigation measures provided by the FWS are described below.

It should be noted that for Alternatives 3 and 4, the area of disturbance for the proposed action will take place on private residential property. However, it is expected that Alternatives 3 and 4 will result in no impacts to botanical and faunal resources.

Generally speaking, minimization measures discussed herein are intended to minimize any potential impacts on flora and fauna that could result from the construction and operation of the wastewater treatment and disposal facility and associated infrastructure. The proactive consultation with relevant authorities ensures compliance with regulations and protection of sensitive species. Additionally, the note regarding Alternatives 3 and 4 acknowledges the unique context of disturbance on private residential property while anticipating minimal impacts.

### ***Seabirds***

- The Project can minimize or avoid risks to protected night-flying seabirds by not conducting night-time construction and ensuring that all associated outdoor lighting is fully shielded (Night sky compliant; HDLNR-DOFAW, 2016).

### ***Hawaiian Hawk***

- It is recommended that a nesting hawk survey be conducted by a qualified biologist within three days that any large stature trees are trimmed or felled to ensure that no active nest is disturbed. It is presently unclear if any such action will occur as part of this Project.

### ***Hawaiian Hoary Bat***

Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) between June 1 and September 15, the bat pupping season.

### **No-Action Alternative:**

The No-Action Alternative involves no modifications to the existing LCC system is not expected to impact flora or fauna.



## 5.7 Cultural, Historical, and Archaeological Resources

A 2016 survey of available information identified the presence of one historic site in the vicinity of the proposed wastewater collection system. In Pāhala, -- the Ka'ū High and Pāhala Elementary School, is listed on the State of Hawai'i register of historic places. No other historic sites are found within the areas designated for improvements.

In November 2016, as part of the initial planning for LCC closure, a one-day archaeological field inspection was conducted on the 42.5-acre parcel, which includes the 14.9-acre area for the wastewater treatment and disposal facility. The inspection involved pedestrian sweeps of the entire 42.5-acre parcel to determine the presence of historic properties or significant archaeological features. The inspection report indicated that ground modifications carried out during the plantation period had destroyed evidence of pre-contact agriculture or settlement activities. The bulldozing associated with the creation of the macadamia nut orchard appeared to have leveled any plantation-era land features.

The 2016 inspection identified one surface artifact as the only evidence of past human activity on the 42.5-acre parcel. This surface artifacts included a single traditional artifact and numerous late post-contact artifacts. The single traditional artifact, a crudely-shaped discoidal hammerstone, was found on the ground surface near the northern edge of the plant site near Maile Street. No other cultural material, either traditional or post-contact, was observed in this area, suggesting that the hammerstone reflects an isolated artifact rather than a buried cultural deposit. Although historical ground modifications have likely limited the archaeological potential of the site, the discovery of both pre- and post-contact surface artifacts within the 42.5-acre plant parcel, as well as evidence from plantation-era documents indicating the opening of a lava tube containing human remains once existed in the southeastern corner of the parcel, suggests that further archaeological studies may be necessary before any development can commence. The 2016 inventory report recommended at least an Archaeological Inventory Survey (AIS) to fully document, map, date, and collect surface artifacts. It may also be necessary to test for the presence of subsurface cultural deposits through hand excavation or mechanical trenching.

As part of previous Environmental Assessment efforts, the County conducted an AIS of the 14.9-acre treatment and disposal facility, including subsurface testing of the effluent disposal area. To carry out this AIS, SHPD approved an AIS plan. To meet this requirement, the County submitted the AIS plan to SHPD on March 22, 2018. On April 25, 2018, SHPD requested clarification, and responses, including findings from the 2016 field survey report and a map of the proposed wastewater treatment and disposal facility, were submitted to SHPD on July 31, 2018. SHPD approved the AIS plan on August 20, 2018, and the County conducted the AIS of the 14.9-acre WWTP in September 2018.

In addition to the AIS, the County is obligated to comply with the National Historic Preservation Act (NHPA). On March 29, 2018, the County initiated consultation for this project in accordance with Section 106 of the NHPA. Consultation letters were sent to various Native Hawaiian Organizations, totaling 15 letters, inviting comments from organizations that may attach religious or cultural significance to properties affected by the proposed actions. A letter dated February 20,



2020 from the SHPD provides concurrence that no historic properties at the Proposed WWTP Site shall be affected, under HRS 63-8 and Section 106.

In 2023, an Archeological Literature Review was conducted to determine the likelihood that historic properties may be affected by the project and, based on the findings, consider cultural resource management recommendations. The literature review concluded that surface pre-contact sites are not expected within the project area given the known traditional land use in this area and the impacts of continued agricultural and residential development. The modern development of the macadamia nut orchard has likely also obliterated any plantation era sites once present in that part of the project area. Historic surface features associated with the sugar plantation and associated village may be present. Furthermore, there is potential for pre- or post-Contact subsurface archeological features within the project area, which may or may not be located within lava tubes. It should be noted that the literature review is intended to support the projects historic and environmental review process; however, the report does not fulfill the requirements of an archeological inventory survey investigation as set forth in federal and State Hawai'i historic preservation review requirements.

### **Impacts and Mitigation Measures:**

#### ***All Proposed Alternatives:***

Construction activities associated with the Proposed Action may potentially disturb archaeological and cultural resources in the project area. An Archeological Inventory Survey was conducted to assess potential impacts. Potential impacts may be avoided or minimized further by performing subsurface testing to confirm the presence or absence of resources on the wastewater treatment and disposal facility site. Archaeological monitoring should also be implemented during IWS installation and maintenance.

If any archaeological sites or remains are encountered during construction, work shall cease immediately, and SHPD shall be contacted to assess the significance of the find and recommend appropriate mitigation measures, if necessary.

As part of previous Environmental Assessment efforts, a letter dated February 20, 2020 from the SHPD provides concurrence that no historic properties shall be affected, under HRS 63-8 and Section 106. On March 28, 2024, the designated non-federal representative for consultations under Section 106 of the NHPA, on behalf of EPA and the County of Hawai'i, provided a letter to the SHPD which included an updated description of the project and acknowledged that the project area has remained consistent with previous consultation efforts. The intent of this letter was to determine if Section 106 consultation would need to be re-initiated due to the project updates. On April 4, 2024, SHPD provided an email which concluded that the project would not need to undergo further Section 106 consultation as the project updates under Alternatives 1 and 2 would not change the previous concurrence that no historic properties shall be affected and the agreement for archeological monitoring for identification purposes.

It is advised that the County seek to consult with SHPD in regard to Alternatives 3 and 4 in accordance with HRS Chapter 6E requirements, and in relation to Section 106 of the



National Historic Preservation Act (NHPA) – if triggered – and, to incorporate additional impact avoidance and minimization measures if required for the construction of the IWS.

No-Action Alternative:

The No-Action Alternative does not involve any new construction or disturbance of land, and therefore, it does not result in impacts on archaeological and cultural resources.

No specific mitigation measures related to archaeological and cultural resources are required for this alternative.

These revised mitigation measures address the potential impact of archaeological and cultural resources for all five alternatives, including the need for Archaeological Inventory Surveys (AIS) and archaeological monitoring in Alternatives 3 and 4.

## 5.8 Air Quality and Odors

The project area falls within the purview of ambient air quality standards (AAQS) at both national (NAAQS) and state levels, encompassing the criteria pollutants, including carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). It is noteworthy that the State of Hawaii has standards that align with national standards in terms of stringency. The Hawaii Department of Health (DOH) operates an extensive network of air quality monitoring stations across the state, ensuring that criteria pollutant levels have consistently remained below both federal and state AAQS thresholds throughout the state, including the Pāhala area.

Existing air quality within the Pāhala area is primarily influenced by various sources of air pollutants, encompassing vehicular emissions, industrial activities, natural processes, and agricultural practices. Additionally, the region is subject to periodic air quality fluctuations resulting from volcanic emissions originating from Kīlauea Volcano. The concentration of volcanic smog, locally known as "vog," within the area hinges on several factors, including the volume of sulfur dioxide (SO<sub>2</sub>) emissions from Kīlauea, wind patterns, and prevailing atmospheric conditions. It is pertinent to note that volcanic emissions are categorized as natural events, and in certain circumstances, exceedances of the 1-hour NAAQS attributable to volcanic emissions might be excluded from considerations regarding air quality attainment.

The Pāhala area, characterized by its rural nature, does not feature major stationary sources of air pollution. Furthermore, the relatively low volume of vehicular traffic along Māmalahoa Highway and within the community itself serves to limit the contribution of mobile sources of emissions to air quality concerns.

### **Impacts and Mitigation Measures:**

Alternatives 1 and 2 - Package Plant:

During the construction phase of the wastewater collection system and treatment facility associated with Alternative 1, short-term impacts on air quality may manifest as fugitive dust emissions resulting from construction activities. These emissions would be effectively



managed through the implementation of a comprehensive dust control plan. Measures within this plan would encompass the application of water to active work areas, the use of wind screens, vigilant maintenance of adjacent roads to prevent dust buildup, and the covering of open-bodied trucks. It is plausible that exhaust emissions from mobile construction equipment, in conjunction with traffic disruptions associated with construction activities, could exert a minor influence on air quality during this phase.

As previously discussed, the PER recommended a granular activated carbon (GAC) scrubber be used at the Pahala WWTP headworks. A GAC scrubber passes odorous air through a bed of activated carbon, which absorbs the odorous constituents within the pore spaces of the carbon.

Chemical oxidation or reduction of some compounds can also occur. As pore spaces become occupied, efficiency degrades, and the carbon must be replaced or regenerated. Carbon is most effective on higher molecular weight molecules such as the organic sulfur compounds, which makes it the technology of choice. Package GAC scrubbers are available for small headworks and vessels can be situated vertically, horizontally or radially to optimize footprints and reduce structure elevation profiles. The County currently operates GAC scrubbers at other facilities and purchases the GAC media in bulk, which reduces costs.

Once construction has been completed, emissions will occur from the daily visits to the WWTP by a plant operator who could be based at the Hilo WWTP or at the Kealahou WWTP in Kona. Also, emissions would occur from trucks used to haul the solids to the County West Hawai'i Sanitary Landfill at Puuanahulu, located north of Kailua Kona. These trips are not expected to exceed federal or state ambient air quality standards for criteria pollutants. The presence of an emergency standby diesel-powered generator, operated periodically for testing and during power outages, is unlikely to have a significant adverse impact on air quality.

*Alternatives 3 and 4 - Individual Wastewater System Program:*

Air quality impacts for Alternatives 3 and 4 primarily relate to the installation and maintenance of the IWS by homeowners. These activities may yield minor emissions associated with construction equipment and vehicles. However, any potential air quality impacts would be transient and localized to specific residential areas. Additionally, there is a slight risk of odors emanating from maintenance activities or system breakages within the IWS. Homeowners would be responsible for managing and mitigating these potential odors.

*No-Action Alternative:*

The No-Action Alternative entails no modifications to the existing LCC system and, therefore, is not projected to introduce new air quality impacts to the Pāhala area. Historical air quality records indicate that the area has consistently met ambient standards during the operation of the existing LCCs.



## 5.9 Noise

The existing noise environment in the Pāhala area is primarily characterized by the natural sounds of the rural surroundings, which include ambient sounds from vegetation, wildlife, and intermittent vehicular traffic on Māmalahoa Highway and local streets. Noise levels in rural areas like Pāhala are typically lower than in urban or industrial areas.

### Impacts and Mitigation Measures

#### *Alternatives 1 and 2 - Package Plant:*

During the construction of the wastewater treatment facilities and collection systems, it is anticipated that there will be an increase in noise levels associated with the operation of heavy machinery, construction equipment, and from potential increased vehicle traffic. These construction activities can generate temporary noise impacts in the project area.

To minimize construction-related noise impacts, the project can implement standard noise control measures such as scheduling construction activities during daytime hours, avoiding noisy activities during quiet hours (e.g., evenings and weekends), and employing noise barriers or sound-reducing equipment where feasible.

While construction may introduce short-term noise, the continuous operational noise from these facilities is generally localized and can be controlled with noise-reducing measures. Transportation noise may be minimal as wastewater can be treated onsite.

The operational phase of the wastewater treatment facilities may introduce continuous noise sources, such as equipment operation, pumps, and mechanical systems. While these noise sources are generally not excessively loud, they can contribute to ambient noise levels in the immediate vicinity of the facilities.

To address operational noise, the project can consider noise-reducing designs for the treatment facilities, such as noise barriers or acoustic enclosures for noisy equipment. Additionally, maintenance schedules can be optimized to minimize noisy activities during sensitive times.

Vehicle traffic associated with travel to the Pāhala WWTP by plant operators and with trucks needed to remove solids, based on the location of package plant would not affect noise in the residential areas.

#### *Alternatives 3 and 4 - Individual Wastewater System Program:*

During construction of the IWS, it is anticipated that there will be an increase in noise levels associated with the operation of heavy machinery, construction equipment, and due to vehicle traffic. These construction activities can generate temporary noise impacts in the project area.

To minimize construction-related noise impacts, the project can implement standard noise control measures such as scheduling construction activities during daytime hours, avoiding





noisy activities during quiet hours (e.g., evenings and weekends), and employing noise barriers or sound-reducing equipment where feasible.

The installation and maintenance of the IWS may result in localized noise during construction and maintenance activities. However, these impacts are distributed across multiple resident properties.

*No-Action Alternative:*

This alternative maintains the existing LCC system. While it avoids construction-related noise, it may not address long-term noise concerns associated with the aging infrastructure.

## 5.10 Energy and Natural Resources

The Pāhala area relies on a mix of energy sources for electricity, including fossil fuels (e.g., oil) and renewable sources (e.g., solar and wind). The specific energy mix can vary over time and may be influenced by state and county policies promoting renewable energy.

Although the integration of renewable energy sources to reduce reliance on fossil fuels and promote sustainability can be considered, WWTP facilities typically rely on a consistent source power. Also, the package plant site plan has been designed to minimize the affected land area. Renewable energy sources would require a greater land area which would mean removal of additional macadamia nut trees.

### Impacts and Mitigation Measures

*All Proposed Alternatives:*

The construction and operation of wastewater treatment facilities will require energy inputs. Construction equipment, pumps, aeration systems, and other mechanical components consume energy during installation and operation.

Implementing energy-efficient technologies and practices during facility construction and operation can help reduce energy consumption.

Additionally, the feasibility of incorporating renewable energy systems into the wastewater treatment facilities to reduce carbon emissions and energy costs should be evaluated.

*No-Action Alternative:*

This alternative maintains the existing LCC system which may not address long-term energy consumption associated with the aging infrastructure.

## 5.11 Land Use and Land Use Plans

The existing land use in the project area includes residential, agricultural, and undeveloped land. Agricultural activities, such as macadamia nut farming, are important for the local economy. The



Project Area is located within the Urban and Agricultural State Land Use Districts. As such, the Proposed Action would be required to comply with the regulations set forth in the State Land Use Law (HRS, Chapter 205).

Furthermore, the County of Hawai'i General Plan calls for the preparation of community development plans (CDPs) "to translate the broad General Plan statement to specific actions as they apply to specific geographical areas."

The Ka'ū CDP is one of nine CDPs for Hawai'i County. On October 17, 2017, the Ka'ū CDP was adopted as Ordinance No. 2017-66. The purpose of CDPs is to implement the broad goals within the General Plan on a regional basis and to translate the broad General Plan statements into specific actions. CDPs are the forum for community input into managing growth and coordinating the delivery of government services to the community. CDPs designate detailed development patterns and direct physical development and public improvements by detailing land use policies and infrastructure priorities.

Section 5 of the CDP prioritizes improvements in infrastructure, facilities, and services, including Section 5.8 applicable to Environmental Management which states:

"Environmental management facilities, including expanded sewer lines, the Ocean View transfer station, green waste facilities, and improvements in the Pāhala transfer station

Policy 120 Extend the primary wastewater collection lines in Pāhala and Nā'ālehu so that infill development projects can connect wastewater systems built for new subdivisions to the County systems."

The collection system will be consistent with Policy 120 as the improvements for the Pāhala LCC Replacement Project have been designed not to preclude expansion to accommodate the Pāhala community. Similarly, the wastewater treatment and disposal facility has been designed not to preclude expansion to accommodate the future needs of the Pāhala community. Future subdivisions would be accommodated, as capacity allows, on a first-come, first-served basis.

## **Impacts and Mitigation Measures**

### *Alternative 1 – Package Plant:*

Construction activities will result in land disturbance, affecting natural habitats and agricultural areas. Minimizing the affected area will act to footprint of construction activities and implementing erosion control measures can help mitigate land disturbance impacts. These centralized facilities may require significant energy inputs for treatment and transportation of wastewater. However, they offer opportunities for energy efficiency improvements and the integration of renewable energy sources.

The collection system has been designed allow flows from additional residential areas to the north and east to reach the treatment and disposal facilities. The package plant site plant has been designed to allow additional treatment capacity. Thus, Alternative 1 would be consistent with the Ka'ū CDP.



### *Alternative 2*

Although the package plant in Alternative 2 would allow additional facilities, use of existing collection system would not allow flows from the residential areas to the north and east to connect to the package plant and treatment disposal system.

### *Alternatives 3 and 4 – Individual Wastewater System Program:*

Construction activities can result in land disturbance, affecting natural habitats and will affect the residential parcels, including affecting existing buildings, structures and landscaping. Minimizing the footprint of construction activities and implementing erosion control measures can help mitigate land disturbance impacts.

These alternatives are designed to use gravity flows which will mean lower energy demands compared to centralized facilities.

### *No-Action Alternative:*

The existing LCC system will not require energy consumption. No significant changes in energy use are anticipated with this alternative.

## **5.12 Roadways and Traffic**

The existing roadway and traffic conditions in the Pāhala area provide essential context for assessing the impacts and mitigation measures associated with the proposed wastewater treatment project. Key considerations include:

**Road Network:** Pāhala is served by a network of roadways which are under the jurisdiction of the County and include Māmalahoa Highway, a state facility. The local streets provide access to residences, businesses, and community facilities.

**Traffic Volume:** The traffic volume on Māmalahoa Highway and local roads in Pāhala is generally low, reflecting the rural nature of the area. Limited vehicular traffic contributes to low levels of congestion and a relatively peaceful road environment.

**Access to Project Sites:** The proposed project sites, including the preferred location for the wastewater treatment and disposal facility, are accessible via the existing road network. Consideration of the impact of construction and operational traffic on local roads is necessary.

**Safety:** Road safety is a critical concern in the area. Ensuring the safety of residents, commuters, and workers during construction and operation is a primary focus. Safety measures may include signage, flaggers, and traffic control measures as needed.

### **Impacts and Mitigation Measures:**

#### *Alternatives 1 and 2 – Package Plant:*

During the construction phase of the wastewater treatment project, temporary disruptions to traffic flow on local roads may occur. Mitigation measures include the development of



traffic management plans to minimize construction-related traffic impacts. These plans may include designated construction access points, scheduling work during off-peak hours, and flaggers to ensure safe traffic flow.

The influx of construction vehicles, equipment, and workers to the project sites may result in increased traffic volume on local roads. To mitigate this, construction logistics planning should aim to minimize the impact on existing road users and ensure the safety of all road users.

Safety measures, such as signage, temporary speed limits, and traffic control personnel, will be employed as necessary during construction activities to maintain the safety of both workers and the local community.

As part of the project, any necessary upgrades or improvements to local roads or intersections impacted by construction activities will be considered and implemented. This may include road repairs, resurfacing, or other enhancements to ensure the continued integrity of roadways.

During the operation of the wastewater treatment facility, regular visits by facility operators are expected. While these visits would introduce minimal traffic, safety remains a priority, and any potential traffic impacts will be mitigated through adherence to established safety protocols.

Continuous monitoring of traffic conditions and adherence to traffic management plans will be essential to address any unforeseen issues promptly. Compliance with local traffic regulations and safety standards will be enforced throughout the project's lifecycle.

In summary, the existing road network in Pāhala serves as the backdrop for assessing potential impacts and mitigation measures associated with the proposed wastewater treatment project. During both the construction and operation phases, careful planning, safety measures, and infrastructure improvements will be implemented to minimize disruptions and maintain the safety and functionality of local roadways.

Additionally, the new collection system or methods of integration with the existing collection system may require careful planning and engineering to ensure compatibility and minimize impacts on the existing infrastructure.

#### *Alternatives 3 and 4 - Individual Wastewater System Program:*

Unlike the centralized package plant options, this alternative involves the installation and maintenance of the IWS at each residence within the service area. Logistically, this can be challenging due to the need for coordination with numerous property owners.

Obtaining access to private properties and ensuring compliance with installation and maintenance requirements for IWS may pose logistical hurdles. Coordinating schedules and ensuring proper installation and maintenance become complex tasks; however, it should be noted that septage trucks would only need to visit each property every three to five years to pump the septic tanks.



The ongoing operation and management of multiple individual systems can be logistically complex. Ensuring that all systems meet required standards and addressing any issues promptly is a continuous endeavor.

*No-Action Alternative:*

Maintenance of Existing Infrastructure: Under the No-Action Alternative, there would be no changes to the existing infrastructure. While this avoids the logistical challenges of new construction, it doesn't address potential issues with the aging LCC system.

Long-Term Considerations: Continuing with the existing system may provide short-term stability, but it may not be a sustainable long-term solution for wastewater treatment in the area.

### 5.13 Hazardous Materials

The existing conditions in Pāhala regarding hazardous materials primarily pertain to the operation of the Pāhala LCCs, which historically managed wastewater treatment for the community. No chemicals are currently being used for treatment at the Pāhala LCCs, however, wastewater treatment processes generate residual waste, including sludge and biosolids. Proper management and disposal of these materials are essential to prevent environmental contamination.

**Impacts and Mitigation Measures:**

*All Proposed Alternatives*

The impacts and mitigation measures related to hazardous materials are primarily associated with the closure of the Pāhala LCCs and the transition to alternative wastewater treatment methods:

- As the LCCs cease operation, residual waste, such as sludge and biosolids, must be managed appropriately. Mitigation involves planning for the safe removal and disposal of these materials to prevent adverse environmental impacts.
- Depending on the condition of the LCC sites, remediation efforts may be required to address any soil or groundwater contamination resulting from historical operations. Remediation plans and measures will ensure that the sites are restored to acceptable environmental standards.
- For proposed alternative wastewater treatment methods, any hazardous materials or chemicals used in the new treatment processes would be subject to stringent safety protocols, handling procedures, and storage requirements. Mitigation measures include compliance with safety regulations and ongoing staff training.

Continuous monitoring of the environment by the homeowners, including soil and water quality, will be essential to detect any potential impacts related to hazardous materials. Mitigation measures involve the implementation of robust monitoring programs to promptly address any issues that may arise.



The closure of the Pāhala LCCs and the transition to alternative wastewater treatment methods in Pāhala require careful management of hazardous materials and chemicals to prevent adverse environmental impacts. Proper disposal, remediation, and adherence to safety protocols are crucial mitigation measures to ensure the safe and responsible handling of hazardous materials throughout the project's lifecycle.

*No-Action Alternative:*

The No-Action Alternative does not involve any new construction or modification of the existing sewage system; however, this would not allow the County to meet the requirements of the AOC and SDWA.

## **5.14 Socioeconomics & Environmental Justice**

In December 2022, the State of Hawai'i Department of Business, Economic Development and Tourism released 2021 population estimates for the state and counties. This analysis estimates that Hawai'i County had a resident population of 200,648 persons in 2021, which represents an annual increase of 1.01 percent from the 2016 population.

The U.S. Census Bureau provides the American Community Survey (ACS) for Census Designated Places, which updates selected demographic, social, and economic information for various years. The ACS shows age distribution, racial composition, and economic information, including employment and household income by Census Designated Place for various locations in Hawai'i County. The version of the ACS referenced is the 2021 5-Year Estimates, released in December 2022. See Table 5.1 below.

The ACS shows the Pāhala population has a much younger age distribution compared to Hawai'i County, especially in the proportion of individuals in the "Under 5 to 19" age category, 33.0 percent compared to 23.6 percent for the County. This proportion applies to all age groups, except for the 35 to 59 and the 60 to 74 age groups. The median age for Pāhala is 27.0 years compared to 43.0 years for the County.

Overall, Pāhala is characterized by a racial composition that includes a greater proportion of minorities compared to the County. The Pāhala racial distribution includes a much lower proportion of White residents, a much higher proportion of Filipino residents, and lower populations of other minority groups, including Native Hawaiians when compared to the County. There are also more residents of two or more races in Pāhala than in the County.



Item	Pāhala		Hawai'i County	
	Total	Percent	Total	Percent
<b>Demographic Characteristics</b>				
Total Population	2,210		200,468	
Under 5 to 19 years	730	33.0	47,349	23.6
20 to 34 years	602	27.2	33,056	16.5
35 to 59 years	493	22.3	61,169	30.5
60 to 74 years	285	12.9	43,854	21.9
75 years and older	100	4.5	15,040	7.9
Median age	27		43	
<b>Race</b>				
White	388	17.6	65,306	32.6
African American (inc. American Indian/Alaska Native)	0	0.0	2,608	1.3
Chinese	0	0.0	2,911	1.5
Filipino	555	25.1	19,111	9.5
Japanese	46	2.1	16,179	8.1
Korean	0	0.0	888	0.4
Other Asian	60	2.7	5,172	2.6
Native Hawaiian	65	2.9	18,333	9.1
Other Pacific Islander	33	1.5	5,765	2.9
Some other race	0	0.0	4,586	2.3
2 or more races	1,063	48.1	59,754	29.8
<b>Social/Educational Characteristics</b>				
Less than 9th grade	78	6.2	3,289	2.3
High School to High School Graduate	526	42.1	49,116	34.3
Some college to associate degrees	386	30.9	47,704	33.3
Bachelor degree	227	18.2	27,845	19.4
Graduate/professional degree	32	2.6	15,395	10.7
<b>Household Income Characteristics</b>				
Less than \$24,999	129	25.0	13,462	18.9
\$25,000 to \$49,999	106	20.5	13,039	18.3
\$50,000 to \$99,999	156	30.2	21,696	30.4
\$100,000 to \$199,999	91	17.6	17,775	24.9
\$200,000 or more	35	6.8	5,430	7.6
Median household income	\$54,293		\$68,399	
<b>Employment Characteristics</b>				
Agriculture, forestry, fishing and mining	268	32.4	4,357	4.9
Construction	14	1.7	7,051	7.9
Manufacturing and wholesale trade	188	22.7	3,920	4.4
Retail trade	37	4.5	10,881	12.2
Transportation, warehousing, and utilities	19	2.3	3,679	4.1
Information tech, finance, insurance and real estate	31	3.7	6,140	6.9
Professional, scientific and technical services	41	5.0	10,366	11.6
Education and health care	117	14.1	19,354	21.7
Arts, entertainment and recreation	100	12.1	14,078	15.8
Other services, public administration	12	1.5	9,493	10.6



Pāhala has a higher proportion of residents that have completed high school and some college than the County overall, but a slightly lower proportion with college degrees (bachelor's and graduate or professional degrees). From an economic perspective, Pāhala generally has more households in lower income brackets than the County, and a lower median household income.

Lastly, Pāhala had a higher proportion of employment in agriculture, forestry, fishing, hunting, and construction (32.4 percent), and in manufacturing and wholesale trade (22.7 percent) compared to the County 4.9 percent and 4.4 percent respectively. Pāhala had a lower proportion in education and health care (14.1 percent), compared to the County (21.7 percent).

A subset of social resources is environmental justice. Environmental justice considers sensitive populations, such as children, minorities, and low-income communities. Sensitive populations are identified in two Executive Orders (EOs):

- EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, serves to avoid the disproportionate placement of adverse environmental, economic, social, or health impacts from federal actions and policies on minority and low-income populations.
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that federal agencies will identify and address environmental health and safety risks from their activities, policies, or programs that may disproportionately affect children.

As noted above and in Table 4.1, Pāhala has a higher proportion of low-income, minority, and children residents as compared to the County as a whole. For purposes of this assessment, and to correspond with the available ACS demographic characteristic data, "low income" is defined as having a household income of less than \$24,999; "minority" is defined as any race population other than White; and "children" is defined as the "Under 5 to 19" age category.

### **Impacts and Mitigation Measures:**

#### *Alternatives 1 and 2 - Package Plant:*

In the short term, construction projects would require a number of contractors and their subcontractors. Construction contract documents would reference HRS 103B, which requires the contractor (including subcontractors) to include not less than 80 percent Hawai'i residents in the work force. This would limit the importation of workers from outside the local area and the associated increase in demand for local housing.

The Alternative 1 would generate employment as the contractor would need workers to undertake construction of the improvements for the wastewater collection system and the WWTP and effluent disposal facility. This employment would generate wages and salaries paid to the contractor and subcontractor work forces. The wages and salaries paid to the work force would in turn generate purchases of goods and services, which would result in taxes paid to the State of Hawai'i. In addition, the contractor and their subcontractors





would need to purchase equipment, supplies, and materials, some of which would be purchased from local suppliers and vendors. Direct purchases of equipment, supplies, and materials by the contractor would also generate taxes. Overall, Alternative 1 would result in positive employment benefits which would result in higher levels of income and overall economic benefits to the local economy.

The Alternative 1 is not likely to directly impact long-term employment or education trends since the wastewater plant operator would likely be based in Hilo or Kona, meaning the project would not involve long-term relocation of any staff to Pāhala. Additionally, Alternative 1 wastewater collection system and treatment and disposal facility would not be designed to encourage or accommodate substantial population growth in Pāhala.

Alternatives 3 and 4 - Individual Wastewater System Program:

Construction of the IWS would also create the need for workers construct the septic system including the absorption bed or seepage pits. Since the IWS would not involve the complex treatment processes, the level of employment could be lower than Alternative 1 or 2. However, to construct over 100 IWS would require multiple crews or contactors. Overall, the economic impact may be similar to Alternatives 1 and 2.

No-Action Alternative:

The No-Action Alternative does not involve any new construction or modification of the existing sewage system, and therefore, it is not expected to impact socioeconomic or demographic conditions in the Pāhala area.

No specific mitigation measures related to socioeconomic characteristics are required for this alternative.

These adapted impacts and mitigation measures address the potential socioeconomic impacts for all five alternatives, emphasizing employment and economic benefits while considering sensitive populations. Please let me know if you need further adjustments or information.

All Proposed Alternatives:

Despite the relatively high proportions of low-income, minority, and children residents in Pāhala compared to the County overall, the proposed alternatives would not result in disproportionately high and adverse human health or environmental effects on the minority or low income populations. The design and location of the proposed wastewater treatment and disposal facility would minimize odor and air quality impacts. Construction of the wastewater collection system would result in intermittent and unavoidable noise from construction vehicles and equipment within the Pāhala community, including noise associated with the removal of bedrock. However, as discussed in Section 3.18.2, construction activities within the community would comply with provisions of HAR 11-46 (Community Noise Control). This includes obtaining a noise permit for any activities that would generate noise exceeding the permissible sound levels specified in HAR 11-46. The permit would limit excessive noise sources to daytime hours; would require the use of



best available control technology to control noise levels from excessive noise sources; and would require the applicant to notify affected members of the public in advance of any planned nighttime construction activity (which must not exceed the permissible sound levels). Overall, the proposed alternatives are expected to result in positive human health and environmental effects to Pāhala residents by providing a cleaner and longer-lasting wastewater treatment system.

Concerns regarding the financial impact of the project on individual newly accessible property owners (due to the requirement to connect to the new wastewater collection system, per HCC § 21-5) were raised by the community during the December 2017 public meetings and also echoed at the the October 2018 public meeting for the previous Draft EA. Although not required by HAR 11-200, the County voluntarily convened an additional public meeting on March 21, 2019 to gain further input from newly accessible property owners and fulfill a County commitment made in October 2018 to research and provide financing options available to owners of parcels that would become newly accessible to the County collection system. Available programs discussed included:

- U.S. Department of Housing and Urban Development (HUD) with County of Hawai'i Office of Housing and Community Development Residential Repair Program – Community Block Grant Program, and
- U.S. Department of Agriculture – Rural Development (USDA-RD) Program.

As noted during the March 2019 presentation, these programs may change in the coming years and additional options may be added to this preliminary list. Hawai'i Legislature, Senate Bill 221 SD1, which could amend HRS 342D to establish a low-interest loan program offering financial assistance to cesspool owners to connect to wastewater treatment systems approved by the DOH, was also discussed; however, this bill was subsequently not passed during the 2019 legislative session.

Abandonment of the two LCCs, and abandonment of the existing wastewater collection system would have no impact on socioeconomic resources within Pāhala.

## 5.15 Sustainability

The concept of sustainability is vital in understanding the environmental, economic, and social conditions in Pāhala and its surrounding areas. Sustainability encompasses the balance between meeting the needs of the present without compromising the ability of future generations to meet their own needs. In the context of Pāhala, several factors influence the existing conditions related to sustainability:

Pāhala's environmental sustainability is influenced by its unique natural surroundings, including its proximity to the Kīlauea Volcano and the potential impact of volcanic activity on air and water quality. The region's lush vegetation and agricultural activities contribute to its environmental diversity.



The local economy in Pāhala is characterized by agriculture, including macadamia nut farming, which has been a significant contributor to the region's economic sustainability. Additionally, employment opportunities in education and healthcare play a role in the local economy.

Pāhala's community is diverse, with residents from various racial backgrounds, including a significant Filipino population. The region's social sustainability is influenced by factors such as education levels, access to healthcare services, and community engagement.

### **Impacts and Mitigation Measures:**

#### *Alternatives 1 and 2 - Package Plant:*

The construction of a new wastewater collection system and treatment facility may have short-term environmental impacts, such as soil disturbance and potential disruption of local ecosystems. Mitigation measures include adherence to environmental regulations and best construction practices to minimize ecological disturbances.

The construction phase is expected to generate employment opportunities, contributing positively to economic sustainability in the short term. Long-term economic impacts include the potential for increased economic activity due to improved wastewater infrastructure.

Minimal direct social impacts are expected during construction. The long-term social benefits include improved access to wastewater services, contributing to the overall quality of life and social sustainability.

#### *Alternative 3: Individual Wastewater System-Maintenance Contract Model*

The installation and maintenance of the IWS may have minimal environmental impacts, mainly related to construction activities. Mitigation measures involve adherence to environmental regulations during installation.

This alternative provides opportunities for local residents to participate in the installation and maintenance of IWS, potentially benefiting economic sustainability at the community level.

The social impacts are localized, involving homeowners and their immediate surroundings. The long-term social benefit includes improved wastewater systems for individual households, enhancing overall social sustainability.

#### *Alternative 4 - Individual Wastewater System-Operating Permit to Homeowners:*

Similar to Alternative 3, this alternative's environmental impacts are mainly related to the installation and operation of the IWS. Mitigation measures include compliance with environmental regulations.



The economic impacts are similar to Alternative 3, with opportunities for local participation in IWS installation and maintenance, supporting economic sustainability at the community level.

The social impacts are localized, involving homeowners and their immediate communities. The long-term social benefit includes improved wastewater systems for individual households, enhancing social sustainability.

#### No-Action Alternative:

This alternative maintains the existing conditions, resulting in minimal changes to the environment.

The economic impacts of the No-Action Alternative are limited, as it does not involve new construction or economic development related to wastewater infrastructure.

This alternative does not introduce significant social changes, as it maintains the status quo in terms of wastewater services and community conditions.

Overall, each alternative has varying short-term and long-term impacts on environmental, economic, and social sustainability in Pāhala. Mitigation measures and adherence to regulations are essential to minimize adverse effects and enhance the region's overall sustainability.

## **5.16 Human Health And Safety**

In Pāhala, as in any community, access to adequate wastewater treatment services is a fundamental necessity for maintaining public health and environmental quality. Existing conditions reveal the following:

- Proper wastewater treatment is vital for safeguarding public health. Inadequate treatment can result in the contamination of groundwater and surface water, posing risks to drinking water sources and recreational areas. It can also lead to the spread of waterborne diseases.
- Effective wastewater treatment is essential for preserving the local environment. Uncontrolled discharge of untreated sewage can harm aquatic ecosystems, damage coral reefs, and degrade coastal waters, impacting the region's biodiversity and natural beauty.
- Reliable wastewater treatment infrastructure contributes to the overall well-being of the community. It ensures that residents can enjoy a safe and healthy environment and minimizes nuisances such as foul odors and unsightly conditions associated with inadequate treatment.

#### The Closure of the LCCs and Improved Services

The closure of the LCCs and the proposed wastewater treatment alternatives aim to address existing challenges and improve wastewater treatment services in Pāhala:



- The closure of the LCCs signifies a shift towards more modern and effective wastewater treatment methods. The proposed alternatives include advanced treatment processes that can remove a higher percentage of contaminants from wastewater, resulting in cleaner effluent.
- Improved wastewater treatment aligns with the community's commitment to environmental stewardship. By ensuring that treated effluent meets stringent quality standards, the closure of the LCCs supports the conservation of local ecosystems and marine life.
- The closure of the LCCs and the adoption of alternative wastewater treatment methods provide significant public health benefits. Treated wastewater reduces the risk of waterborne diseases and protects the health of residents and visitors.
- Adequate wastewater treatment services contribute to community satisfaction and quality of life. Residents can enjoy a cleaner and healthier environment, which, in turn, can have positive social and economic impacts on the community.

The closure of the LCCs represents a critical step toward enhancing wastewater treatment services in Pāhala. It reflects the community's commitment to protecting public health, conserving the environment, and improving overall community well-being. The proposed alternatives offer modern and effective solutions to ensure that wastewater is treated to the highest standards, addressing the pressing need for adequate wastewater treatment in the area.

### **Impacts and Mitigation Measures:**

#### *All Proposed Alternatives*

The Pāhala LCC Closure project would not result in construction of new above-ground infrastructure within the 500-year floodplain. Although a small portion of the proposed collection system is located within the 500-year floodplain, the associated trenching operations would be temporary and would not alter the 500-year floodplain. Thus, no impacts to the existing floodplain are expected from the Proposed Action. For information related to stormwater management and impacts, please refer to Section 3.23.

Abandonment of the two LCCs and the existing wastewater collection system would not affect floodplains within the affected areas.

#### *No-Action Alternative*

The No-Action Alternative, specifically the continued operation of LCC 1, could lead to impacts during a flooding event. LCC 1 is located very close to an area mapped as within the 0.2-percent annual chance (500-year) floodplain. The existing collection system is substandard and in poor condition. A large flood could potentially cause the collection system and/or LCC to overflow as a result of stormwater inflow and result in an uncontrolled release of raw sewage, thus potentially contaminating flooded areas and creating a public health hazard.



## 5.17 Unresolved Issues

This EID serves to assess the anticipated environmental impacts of each alternative on various environmental resources; however, there are still several unresolved issues that may affect the completion of the project under any of the Proposed Alternatives.

### Construction Feasibility

Many of the lots in Pahala may be too small to construct individual septic systems, and for those that could accommodate a septic tank, the soils may have percolation rates that are too slow to allow for seepage pits based on HAR 11-62-34 regulations. Residents with insufficient space for a seepage pit may need to import fill soil to create elevated mound systems or convert to household aerobic treatment units.

Additionally, as discussed throughout the EID, the IWS recommended by the PER also requires the installation of a septic tank with an absorption bed. The PER further outlines that this absorption shall not be installed on lands with a slope gradient of greater than 8 percent. In light of this, some lots may be better served by an IWS featuring a seepage pit which may only be permitted when it can be demonstrated that an alternative means of disposal was not possible.

### Access to Properties

Under Alternative 3, the County will fund, design, and manage project. Obtaining Right of Entry (ROE) to private properties for various purposes, such as infrastructure development or land surveys, can present several challenging issues. The process often involves negotiation, legal considerations, and respect for property rights. Failing to clarify these issues can lead to legal disputes and project delays. The most straightforward way to gain ROE is through the voluntary consent and permission of property owners. However, some property owners may be unwilling to grant access due to concerns about privacy, property damage, or other reasons.



## 6. Selection of a Preferred Alternative

The proposed Amended AOC (Docket No. SDWA-UIC-AOC-2017-0002, proposed February 14, 2024) LCC requirements for Pāhala outlines that an EID must be prepared by the County for US EPA approval to meet Federal Environmental Review Requirements. The Amended AOC requires evaluation of four feasible alternatives, evaluation of a No Action alternative, and the tentative selection of a preferred alternative. In the process of identifying a preferred alternative, extensive community engagement has taken place, including numerous meetings and discussions with the EPA. Preliminary Engineering Reports have also been completed to assess the identified alternatives as discussed in Section 2 of this EID.

The PER initially recommended an IWS alternatives for cost-effectiveness as the alternatives involving a package plant were found to have overall higher capital costs. However, the EPA raised concerns with this recommendation, leading to additional public engagement. Considering factors such as regulatory compliance, community preference, and perceived environmental impacts, the Department of Environmental Management - Wastewater Division (DEM - WWD) has tentatively selected Alternative 1 as the preferred alternative. It should be noted that this selection is subject to change based on public comment.

### 6.1 Recommendation Factors

#### 6.1.1 Regulatory Compliance

In the development of the PERs, public objections or legal ramifications were not considered in the recommendation of the IWS alternative. This includes barriers to property access for construction, existing and/or new agreements, compliance with current County and State codes, and/or establishing new codes and bill ordinance.

Obtaining Right of Entry (ROE) to private properties for various purposes, such as infrastructure development or land surveys, can present several challenging issues. The process often involves negotiation, legal considerations, and respect for property rights. Failing to clarify these issues can lead to legal disputes and project delays. The most straightforward way to gain ROE is through the voluntary consent and permission of property owners. However, some property owners may be unwilling to grant access due to concerns about privacy, property damage, or other reasons. With Alternative 1 being the favorable option (based on received community survey), it is likely less resistance from the community will be expected for granting of ROE.

In addition, there is an existing agreement between the County and C. Brewer established on April 12, 2007, in which the County agreed to construct and maintain new improved community sewer systems, including new County treatment and disposal systems and elimination of large capacity cesspools. Following this agreement, the County Council has already approved, and resolutions (Resolution 72-05 and 290-06) have been obtained for pursuance of WWTP and new collection system per agreement.

Further, implementation of the IWS alternatives would require significant modifications to the County code. Current HRS and DOH administrative rules may not support the required modifications. As such, modification of multiple HRSs and HARs would likely be required,



including County Council approval and obtaining of new resolutions which could have severe ramifications for the current project timeline.

### **6.1.2 Community Factors**

Prior to the Amended AOC, extensive amount of community outreach was conducted back from 2017 and earlier. During these previous community outreach correspondences, WWTP and the new collections system was the alternative that was being pursued and explained to the community.

Since the AOC has been initiated, the County has held multiple community meetings with the intention of gathering input and survey responses regarding the community's preferences regarding the LCC closures. Survey responses have indicated a strong community preference for the package plant option. Based on a 40% on survey response rate from homeowners, 92% have expressed their favor of the package plant with new collection system.

In addition to the recent survey responses, it has been noted that previous efforts led by the County have promised to design and construct the Pāhala WWTP and collection system.

Short-term Construction activities are expected to create disturbances for the community for either alternative option. IWS would require construction on every privately owned lot, which will have extensive amount of land disturbance on the property, as compared to the WWTP alternative which will be limited construction on private properties of existing accessible lots for the connection of the existing dwelling to the new collection system. Although the WWTP alternative will have extensive ROW work that may cause traffic congestion during construction, the disturbed roadways will be newly paved at the end of the project, benefiting the Community.

The conventional wastewater system of new collection system and WWTP alternative will be better suited for the long-term goals and wastewater infrastructure and services within the Community. In addition County personnel will responsible for maintaining the system from within ROW roadways and on the WWTP facility parcel, and not being required to access onto private properties for maintenance purposes, minimizing disturbances to homeowners.

### **6.1.3 Environmental Risks**

Under HAR 11-62-31.1(a), an IWS may be used as a temporary on-site means of wastewater disposal in lieu of wastewater treatment. IWS efficiency is dependent on having adequate land area, properly size tanks, and having an adequately sized absorption bed, with proper soil for percolation and further filtering of bacteria within effluent. Many lots within the Pahala community are exempted from requiring lots to have 10,000 sf (HAR11-62-31-(c)), but small lots (<10,000 sf) and/or overbuilt lots may not meet HAR setback and spacing requirements, which would require DOH variance from setback/spacing requirements and/or usage of seepage pits. Properties having IWS with multiple variances within proximity of each other, may potentially have a cumulative impact on the environment.





The Alternative 1 option will provide the higher level of treated wastewater effluent, as it is intended to meet HAR 11-62 and DOH guidelines for re-use, which will meet the oxidization, disinfection, and fecal coliform to State DOH requirements. The intended re-use effluent of subsurface drip irrigation will minimize disturbance of existing mac-nut trees and contribute towards conservation of the island resources. WWD personnel are also familiar with operating and maintaining collection systems and Package WWTP, which WWD will be able to manage the performance of WWTP and new collection system.

#### **6.1.4 Cost**

The PER provided estimated CIP and 30- year life cycle costs of for the different options, which are summarized below:

- Option #1: \$37.3 Million CIP cost / \$19.7M O&M Cost / \$57.0M Life cycle cost
- Option #2: \$23.6 Million CIP Cost / \$21.6M O&M Cost / \$45.2M Life cycle cost
- Option #3: \$17.4 Million CIP Cost / \$9.4M O&M Cost / \$26.8M Life cycle cost
- Option #4: \$17.4 Million CIP Cost / \$11.3M O&M Cost / \$28.7M Life cycle cost

Option #1 does have a higher capital cost, but there is less risk of encountering unforeseen features (structures, utilities, etc.) as much of the construction work will be within the roadway ROW. The IWS options (options #3 & #4) are lower capital improvement cost, but the extents of the permitted residential structures that will be disturbed and need to be reconstructed, is unknown at this point, which would potentially increase the overall CIP cost of the project than expected. Under Options #1, #2, #3 the County will have to establish monthly sewer fees to help offset the cost of the O&M for the life of the system. Although option #4 may not have associated monthly sewer fees, the homeowner will be responsible for maintaining, operating, and repairing the IWS, along with having to report to the County services of records of IWS. In addition to option #4 the County will need to continue monitoring of and regulate a IWS program for these homeowners, which will be a financial burden on the County for the life of the system, which there will be no associated sewer fees to recoup the cost of County personnel time and efforts in managing this program. Although option #1 has the highest capital cost, this option provides a conventional wastewater system that will suite the long-term goals and treatment for wastewater management within the Community.

## **6.2 Action Items under the Preferred Alternative**

Under the Preferred Alternative, the County of Hawai'i would perform the following actions:

1. Acquire, or otherwise obtain the right to develop and use, a portion of the Tax Map Key: 9-6-002:018, a 42.5-acre parcel currently owned by B. P. Bishop Estate Trustees (commonly known as Kamehameha Schools), then construct a new secondary wastewater treatment and disposal facility within a 14.9-acre portion of the parcel;
2. Construct a wastewater collection system, primarily within the public right-of-way (ROW) and three segments within easements in the Pāhala community, to collect and convey sanitary waste from the currently connected and accessible (in accordance with Hawai'i County Code) properties to the new treatment and disposal facility;



3. Close and abandon two LCCs, according to DOH closure procedures; and
4. Abandon the existing wastewater collection system in place.

The design consultant will be tasked with completing the WWTP design and implementation plan within an estimated 6-7 months, followed by the wastewater collection system design within the same timeframe. The project aims to adhere to an estimated 2-year construction schedule.

In summary, Alternative 1, which involves the construction of a package plant with a new collection system, has been selected based on regulatory compliance, community preference and an assessment of environmental risks.



## 7. Consultation

### 7.1 Early Consultation

The Early Consultation process included efforts to inform the community and solicit input in scoping the EID for the Proposed Action. The Early Consultation/Pre-Assessment Package for the Proposed Action was mailed out on October 5, 2023, to the following agencies, organizations, and stakeholders listed below in preparation of the EID. Parties that formally replied during the Early Consultation/Pre-Assessment process are indicated by a “✓” below. All written comments are reproduced in Appendix C.

#### **Federal Agencies**

- US Army Corps of Engineers, Honolulu District
- US Department of Agriculture Natural Resources Conservation Service
- ✓ US Fish and Wildlife Service
- National Oceanic and Atmospheric Administration
- US Department of Transportation Federal Aviation Administration

#### **State Agencies**

- Department of Agriculture
- Department of Accounting and General Services
- Department of Business, Economic Development & Tourism (DBED&T)
  - DBED&T–Strategic Industries Energy Resources and Technology Division
  - DBED&T Land Use Commission
  - DBED&T Office of Planning and Sustainable Development
  - DBED&T State Energy Office
- Department of Hawaiian Home Lands (DHHL)
  - DHHL – East Hawai‘i District Office
- Department of Health (DOH)
  - DOH – Clean Water Branch
  - DOH - Environmental Management Office
  - DOH – Hazard Evaluation and Emergency Response
  - DOH – Safe Drinking Water Branch
  - ✓ DOH – Wastewater Branch
- Department of Land and Natural Resources (DLNR)
  - ✓ DLNR Division of Forestry and Wildlife
  - ✓ DLNR Engineering Division
  - ✓ DLNR Land Division
  - DLNR State Historic Preservation Division
- Department of Transportation
- Office of Hawaiian Affairs
- University of Hawai‘i

#### **County of Hawai‘i**

- Fire Department
- Police Department
- Planning Department



Research and Development  
Department of Public Works  
Department of Parks and Recreation  
Department of Water Supply

**Elected Officials**

State Senator Dru Mamo Kanuha, Senate District 3  
Representative Jeanne Kapela, House District 5  
Councilmember Michelle Galimba, Council District 6

**Public Utilities**

Hawaiian Electric Company  
Hawaiian Telcom  
Spectrum Hawai'i  
Hawai'i Gas

**Other Parties**

Hawai'i State Library\_  
Pahala Public Library\_  
Hawaiian Civic Club of Ka'u  
Ka'u CDP Action Committee

**7.2 Community Outreach**

The County has conducted numerous public information meeting during the course of designing and documenting the Proposed Action. Beginning in 2017, a total of five community outreach sessions were conducted in the Pahala community in regard to the Draft EA. A public information meeting for the Draft EA was later held in October 2018.

A total of six community outreach sessions to discuss the Revised AOC were conducted in the Pahala and Naalehu communities between March 2022 and December 2023. The sixth session, held on December 14, 2023, was conducted specifically to inform the community of the preparation of this Draft EID and the public comment period.

The County held its semi-annual community informational meeting in Pāhala on February 29, 2024 to give an update regarding the closures of the large capacity cesspools in Pāhala and Nā'ālehu. DEM discussed the County's tentative identification of the preferred option of a wastewater treatment plant for Pāhala with a new collection system and encouraged public input. The next semi-annual community informational meeting will be held in August 2024 in Nā'ālehu.

In addition to the semi-annual community meetings, the County held a community meeting on April 10, 2024 at the Pāhala Community Center to provide comments on the Amended Draft EID. A collection of outreach materials published for this community meeting is provided in Appendix D.



### **7.3 Draft EID Public Review Period**

No comments were received during the public and agency comment period for the subject EID. The comment period began with the publication of the Draft EID at the Pāhala Public Library and on the DEM website. The public comment period closed on December 22, 2023.

### **7.4 Amended EID Public Review Period**

The Draft EID was amended to discuss the County's tentative selection of a preferred alternative as described in Section 6. A second public and agency comment period was opened with the publication of the Amended EID at the Pāhala Public Library and on the DEM website. The public comment period closed on April 15, 2024. No comments were received during the second public and agency comment period for the subject EID.



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United States Environmental Protection Agency Region IX. Docket No. UIC-AO-2005-0014 County of Hawaii, Consent Agreement Department of Environmental Management, Hilo, HI Consent Agreement and Final Order

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16 U.S.C. § 1531. 1973.

16 U.S.C. § 1801. 1976.

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33 U.S.C. § 403. 1899.

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42 U.S.C. § 300f. 1974.

42 U.S.C. § 7401 et seq. 1970.

54 U.S.C. § 300101. 1966.

54 U.S.C. § 312502. 1974.





# **Appendix A**

Preliminary Engineering Report

Pahala Large Capacity  
Cesspool Closure Project  
Revised Preliminary  
Engineering Report

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Prepared for  
County of Hawaii, Department of  
Environmental Management  
April 2023



2261 Aupuni Street, Suite 201  
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 T: 808.244.7005

April 8, 2023  
 Ms. Brenda Iokepa-Moses  
 County of Hawaii Wastewater Division  
 108 Railroad Ave  
 Hilo, HI 96720

152964.704

Subject: Pahala Wastewater Treatment Plant Revised Preliminary Engineering Report

Dear Ms. Iokepa-Moses,

Brown and Caldwell (BC), in association with Engineering Partners, Inc. (EPI) is pleased to present the attached Revised Preliminary Engineering Report (PER) for the Pahala Large Capacity Cesspool (LCC) Closure Project. Preparation of a Revised PER is required by the Revised Administrative Order on Consent (AOC) that became effective on August 22, 2022. The need for a Revised PER was precipitated by several items:

- Geophysical and geotechnical investigations identified and confirmed a large subsurface lava tube under the proposed aerated lagoons, prompting the need for a wastewater treatment process with a smaller and shallower footprint. Mechanical treatment technologies in the form of package plants offer the opportunity to achieve these goals.
- The community has not been receptive to the aerated lagoon technology that was formerly proposed.
- The Revised AOC no longer requires secondary treatment, opening up the possibility of implementing individual wastewater systems (IWS) to close the LCCs.

The Revised AOC requires evaluation of four feasible options:

- A package plant and new collection system.
- A package plant connected to the existing collection system.
- A maintenance contract model IWS program.
- An operating permit model IWS program.

This Revised PER consists of three parts:

- This introductory summary that provides comparisons of all four feasible options.
- Part A, by BC, which presents updated analysis of feasible options i and ii that are based on using a package plant-based wastewater treatment plant (WWTP) to service the Pahala community and close the LCCs. BC is a nation-wide environmental engineering firm with local Hawaii offices located in Kamuela, Wailuku, and Honolulu. For over 75 years BC has been planning and designing WWTPs throughout the United States.
- Part B, by EPI, which presents a detailed analysis of feasible options iii and iv that are based on using IWS to service the Pahala community and close the existing LCCs. EPI is a multi-discipline engineering and design firm based in Hilo. EPI has successfully designed IWS systems on Hawaii Island and is well-versed to address implementing IWS in the unique local soil and subsurface geological conditions in Pahala.

Ms. Brenda Iokepa-Moses  
 County of Hawaii Wastewater Division  
 April 8, 2023  
 Page 2

Throughout this Revised PER the following terms are used:

“Feasible options” refers to the four specific options (i, ii, iii, iv) listed above and in paragraph V.A.31.a of the Revised AOC.  
 “Alternatives” and “project alternatives” refer to various combinations of systems or technologies that are evaluated within this Revised PER to determine preferences for the feasible options.

## 1. Comparison of Feasible Options

The four feasible options are compared below,

### 1.1 Protection of Human Health and the Environment

Table 1 compares the four feasible options with respect to protection of human health and the environment. The State of Hawaii Department of Health (DOH) regulates both WWTPs and IWS. All four feasible options are protective of human health and the environment when implemented in accordance with the applicable Hawaii Administrative Rules (HAR). Additional discussion is provided in Parts A and B.

Table 1. Protection of Human Health and the Environment

Feasible Option	Regulatory Authority	Variances	Protective?
i. Package plant and new collection system	HAR 11-62 Subchapter 2	Variance granted by DOH for WWTP flow capacity	Yes
ii. Package plant connected to the existing collection system	HAR 11-62 Subchapter 2	Variance granted by DOH for WWTP flow capacity	Yes
iii. A maintenance contract model IWS program	HAR 11-62 Subchapter 3	Variances may be required for some lots for setback distances, etc.	Yes
iv. An operating permit model IWS program	HAR 11-62 Subchapter 3	Variances may be required for some lots for setback distances, etc.	Yes

### 1.2 Capital Cost Comparison of Feasible Options

Table 2 summarizes the capital costs for the four feasible options. Note that the IWS capital costs per lot are presented as ranges; greater precision will not be available until designs are complete due to the site-specific nature of IWS implementation on existing developed properties.

Feasible Option	Capital Cost	Cost per Lot
i. Package plant and new collection system	\$37.3 million	\$214,000
ii. Package plant connected to the existing collection system	\$23.6 million	\$136,000
iii. A maintenance contract model IWS program	\$5.7 - \$17.4 million	\$33,000 - \$100,000
iv. An operating permit model IWS program	\$5.7 - \$17.4 million	\$33,000 - \$100,000

As shown in the table the IWS feasible options incur significantly lower capital costs than the package plant alternatives.

### 1.3 Life-cycle cost comparison

A life-cycle cost comparison was prepared for the alternatives. The life-cycle cost is the net present value of cash flows required to implement the project over a 30-year planning period, including capital, operation, maintenance, and replacement costs. The life-cycle cost evaluation includes inflationary effects and the time value of money. Table 3 summarizes the life-cycle cost evaluation results. The IWS approaches assumed the maximum estimated capital costs presented above; the average cost per lot will likely fall between the two extremes shown in Table 2.

Alternative	Capital Cost	O&M Costs	Life-Cycle Cost
i. Package plant and new collection system	\$37.3 million	\$19.7 million	\$57.0 million
ii. Package plant connected to the existing collection system	\$23.6 million	\$21.6 million	\$45.2 million
iii. A maintenance contract model IWS program	\$17.4 million	\$9.4 million <sup>a</sup>	\$26.8 million
iv. An operating permit model IWS program	\$17.4 million	\$11.3 million <sup>a</sup>	\$28.7 million

<sup>a</sup> Includes replacement costs and IWS O&M costs paid directly by homeowners.

Figure 1 shows the results graphically. The IWS alternatives have significantly lower life-cycle costs than the package plant alternatives.

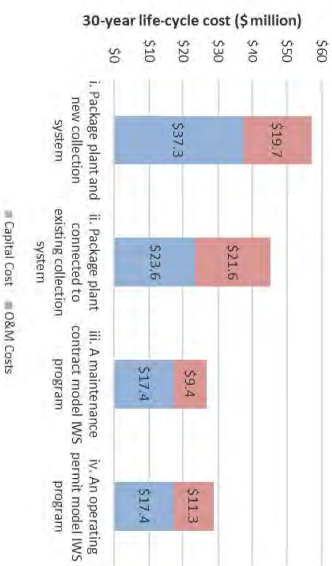


Figure 1. Life-Cycle Cost Comparison

### 1.4 Schedule

The Revised AOC requires the LCCs be closed no later than July 21, 2026. Parts A and B include preliminary assessments of implementation schedules. Table 4 provides a summary of the preliminary implementation schedule assessments. As discussed in Part A, it will be difficult to implement the WWRP approach to close the LCCs by the deadline, due to entitlement processes, environmental review, land acquisition, and materials supply challenges currently facing the Hawaii construction industry. A design/build approach could potentially reduce the implementation timeframe if equipment procurement and fabrication can occur in parallel with design. However, compliance with the Revised AOC deadline will be a significant challenge with Feasible Options i and ii. Per Part B, the IWS approach may be able to be implemented by the Revised AOC deadline. The IWS approach assumes that the County can address Hawaii Revised Statutes (HRS) 343 environmental review requirement via an exemption, and that any alterations to County regulations deemed necessary by the County are achievable within the timeframe.

**Table 4: Summary of Preliminary Implementation Schedule Assessments**

Description	Feasible Options			
	i. Package Plant New Collection System	ii. Package Plant Existing Collection System	iii. Maintenance Contract Model IWS Program	iv. Operating Permit Model IWS Program
Entitlements and permitting	Q3 2024	Q3 2024	Q1 2024	Q1 2024
Design and construction	Q4 2027	Q4 2027	Q2 2026	Q2 2026
Estimated LCC closure	Q2 2027	Q2 2027	Q2 2026	Q2 2026
Revised AOC LCC closure milestone	July 21, 2026			
Risk of missing Revised AOC LCC closure milestone	High	High	Moderate	Moderate

Note: Q = quarter

## 2. Revised AOC References

The Revised AOC paragraph V.30.A.a lists information that must be included in this Revised PER. Table 5 provides references to the information within.

**Table 5: Revised AOC Paragraph V.30.A.a Checklist**

Revised AOC Paragraph V.30.A.a Description	Report Reference Section for Feasible Options			
	i. Package Plant New Collection System	ii. Package Plant Existing Collection System	iii. Maintenance Contract Model IWS Program	iv. Operating Permit Model IWS Program
Description of project details for each feasible option	Part A, § 2.2 and 8	Part A, § 2.4 and 8	Part B, § 1, pg. 3	
Planning area description	Part A, Figure 2-1	Part A, Figure 2-1	Part A, Figure 2-1	Part A, Figure 2-1
Planning period	Part A, § 7.2.3	Part A, § 7.2.3	Part A, § 7.2.3	Part A, § 7.2.3
Description of planning phases	Part A, § 7.2.3	Part A, § 7.2.3	Part A, § 7.2.3	Part A, § 7.2.3
Owner and operator of facilities	Part A, § 1-1	Part A, § 1-1	County/In-house or 3 <sup>rd</sup> party service provider	Homeowner / 3 <sup>rd</sup> party service provider
Location of facilities (including a map)	Part A, Figure 2-1	Part A, Figure 2-1	Part A, Figure 2-1	Part A, Figure 2-1
Design parameters for each feasible option	Part A, § 2.2 and 8	Part A, § 2.4 and 8	Part B, Table 1.1	Part B, Table 1.1
Major unit processes:	Part A, § 5	Part A, § 5	Part B, § 2 and 3	Part B, § 2 and 3
Flow diagram	Part A, Figure 8-2	Part A, Figure 8-2	Part B, Appendix J	Part B, Appendix J
Pipe lengths, sizes, and locations	Part A, Table 2-2	Part A, Table 2-2	Not applicable	Not applicable
Design criteria	Part A, § 8.3	Part A, § 8.3	Part B, § 3, Appendix J	Part B, § 3, Appendix J
Project costs	Part A, § 7	Part A, § 7	Part B, Table 1.2	Part B, Table 1.2


## 3. Recommended Approach


Based solely on the technical analysis presented in Part A and Part B of this report and considering the significantly lower capital and lifecycle costs and favorable implementation schedule associated with the IWS option, we recommend the County pursue an IWS approach to close the LCCs by the Revised AOC deadline of July 21, 2026. Implementation and logistics of the IWS options (including issues not addressed in this report) are concurrently being investigated by the County. If the IWS approach is selected by the County and approved by the EPA, the next step will be for the County to develop an Implementation Plan that will include definition of the intended IWS management model.

Ms. Brenda Iokepa-Moses  
County of Hawaii Wastewater Division  
April 8, 2023  
Page 7

Brown and Caldwell appreciates that the County has requested our services in assisting with this project. Should you have any questions, please do not hesitate to call Michelle Sorensen at 808.442.3306.  
Very truly yours,

**Brown and Caldwell**

  
Michelle Sorensen, Project Manager  
Kamuela, Hawaii

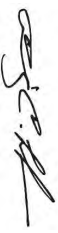
  
Craig Leaven, Project Director  
Wailuku, Hawaii

**PART A: WWTP Approach**

**Part A**  
**Pahala Wastewater Treatment Plant**  
**Revised Preliminary Engineering Report**

Prepared for  
 County of Hawaii, Department of Environmental Management  
 April 2023

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List of Abbreviations

AB	aggregate base	LPHO	low pressure high output
AC	asphalt concrete	MBR	membrane bioreactor
BMP	Best Management Practices	Mg	milligrams
BOD <sub>5</sub>	5-day biochemical oxygen demand	Mgal	million gallons
COH	City and County of Honolulu	Mgd	Million gallons per day
CDP	Kau Community Development Plan	mL	milliliter
cfs	cubic feet per second	MLSS	mixed liquor suspended solids
CFR	Code of Federal Regulations	mm	millimeter
DNA	deoxyribonucleic acid	MSL	mean sea level
DEM	Department of Environmental Management	N	nitrogen
DOH	Department of Health	NPV	net present value
DWS	Department of Water Supply	O&M	Operation and Maintenance
ELF	end-of-lamp-life	P	Phosphorus
FRM	Flood Insurance Rate Map	psi	pounds per square inch
FOG	fats, oils, and grease	RNA	ribonucleic acid
ft <sup>3</sup>	cubic feet	ROW	right-of-way
FTE	full-time equivalent	scfm	standard cubic feet
GAC	granular activated carbon	SCS	Soil Conservation Service
gpm	gallons per minute	SES	sand equivalent size
gpd	gallons per day	SR	slow rate
gpcd	gallons per capita per day	SRT	solids residence time
grad	gallons per acre per day	TSS	total suspended solids
H <sub>2</sub> S	hydrogen sulfide	UIC	Underground Injection Control
HAR	Hawaii Administrative Rules	USEPA	United States Environmental Protection Agency
HDPE	high density polyethylene	UV	ultraviolet
HELCO	Hawaii Electric Light Company	WQV	Water Quality Volume
hp	horsepower	WWTP	Wastewater Treatment Plant
hp/Mgal	horsepower per million gallons	WWRF	Wastewater Redamation Facility
hr	hour		
hp-hr	horsepower-hour		
I/I	Infiltration and inflow		
L	liter		
lbs	pounds		
LOC	large capacity cesspools		

Section 6, followed by discussion of alternative treatment options that were considered and evaluated in Section 7. Preliminary design of improvements is presented in Section 8. The report concludes with an implementation plan in Section 9.

## Section 1

# Introduction

### 1.1 Background

The town of Pahala is located in the Kau district of the Island of Hawaii. According to the 2020 United States Census, the town population is approximately 1,400 persons.

The modern Pahala community was first established as the Pahala Plantation by Hawaiian Agriculture Company (HAC) in 1878 to support sugarcane production. A portion of the community is serviced by a sewer system that was privately built, owned, and operated by the C. Brewer Company, which merged with HAC in 1972. The wastewater collected by the sewer system discharges into large capacity "gang" cesspools. The County of Hawaii (County) Department of Environmental Management (DEM) assumed ownership of the sewer system on April 30, 2010.

In 1998, the U.S. Environmental Protection Agency (USEPA), promulgated regulations, 40 Code of Federal Regulations (CFR) 144.14, that require the elimination of large capacity "gang" cesspools (LCCs). Options to close the LCCs include construction of a new sewer collection system located within public right-of-way (ROW) and replacement of the existing LCCs with a wastewater treatment plant (WWTP) to address the wastewater treatment and disposal needs of the Pahala community. These centralized WWTP options are the subject of this report. A separate report is being concurrently prepared that evaluates additional options using individual wastewater systems (IWS) in lieu of a new collection system and WWTP to close the LCCs.

This report is a revision of the 2019 Preliminary Engineering Report (PER) for the Pahala WWTP and summarizes the proposed facilities needed to treat and dispose of wastewater flow that is currently discharged to the LCCs, plus additional sewer connections. The report presents the existing and estimated future flows and loads to the treatment plant, the proposed treatment processes, recommendation for the WWTP upgrades needed to meet the future treatment needs, and an initial opinion of the cost to construct the improvements project.

### 1.2 Existing System

The existing collection system is a network of gravity sewers that discharge to two existing LCCs. Figure 1-1 shows the collection system network and service areas for the LCCs. A detailed analysis of the existing wastewater collection system was completed by others (M&E Pacific, December 2004). The report concluded that the Pahala community existing sewer system consists of about 3,000 linear feet of 6-inch diameter and 10,000 linear feet of 4-inch diameter pipelines. Residential laterals connect to 4-inch sewers that discharge into 6-inch sewer mains, predominantly found in easements on private property, which transmit wastewater to the LCCs. There are approximately 8 manholes in the sewer system. There are no pump stations, and the system is not designed to collect stormwater.

### 1.3 Report Contents

Section 2 presents the service area and alternative collection systems. Section 3 presents flow and load projections for the new WWTP. Section 4 evaluates effluent management options, and the treatment requirements for the preferred option. Section 5 presents evaluations conducted to develop the preliminary design of the proposed WWTP. Solids management is briefly presented in



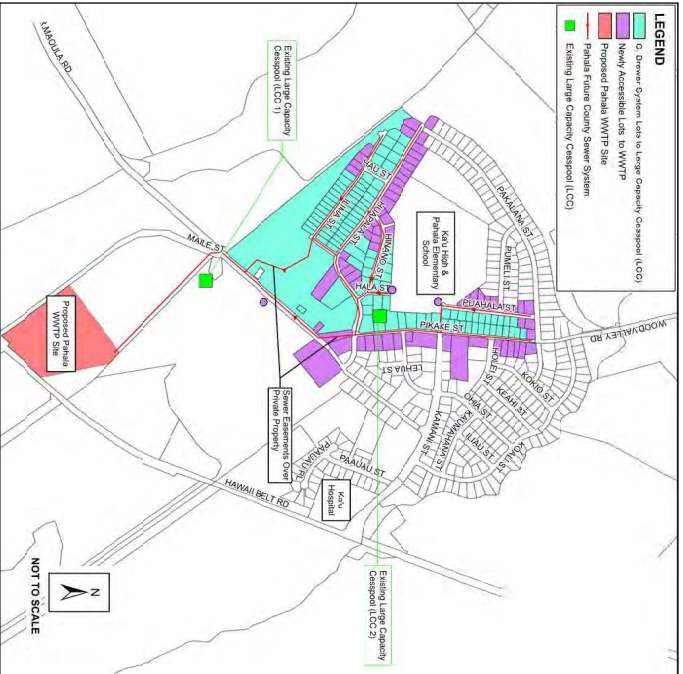


Figure 2-1. Pahala WWTP service area

**Table 2-1. Pahala WWTP Service Area Summary**

Property Type	Number of Parcels
Residential	167
Commercial	4
School	1
Industrial	1
Commercial, industrial, and agricultural	1
<b>Total</b>	<b>174</b>

## 2.2 Conventional Gravity Sewers

A conventional gravity sewer collection system was designed for the Pahala service area shown in Figure 2-1 by Fukunaga & Associates, Inc., to be constructed in two phases. Phase 1 consists of both 8-inch and 12-inch diameter PVC sewer lines connecting the two LCCs along the South end of Pkake Street and continuing down Maile Street to the proposed WWTP. The Phase 1 collection system is designed to the into Pahala's existing collection system infrastructure. Phase 2 consists of approximately 9,400 linear feet of 8-inch diameter PVC sewer mainlines with 6-inch diameter PVC county sewer laterals connecting the sewer mainline to property & easement lines. This Phase 2 collection system is designed to connect to the Phase 1 collection system. Table 2-2 provides a summary of the two projects.

**Table 2-2. Summary of Pahala Gravity Collection System Projects**

Description	Phase 1	Phase 2
	Pahala Wastewater Collection System Improvements Phase 1	Pahala Wastewater Collection System Improvements Phase 2
Project title	Connect existing collection system to WWTP easement. Close LCCs	New sewers in street to replace existing. Connect houses.
Purpose	1,400 linear feet of 12-inch sewer 700 linear feet of 8-inch sewer 18 manholes Close 2 LCCs	9,391 linear feet of 8-inch sewer 83 manholes 158 County sewer laterals, 6-inch Connect houses.
Scope summary		

## 2.3 Septic Tank Effluent Pumping (STEP) System

Typically, a STEP system includes a septic tank with filter screens and electric pumps to convey septic tank effluent to a force main located in the street. These force mains are small (2-inch minimum diameter), low-pressure mains that can be installed with minimum depth of cover and can follow the topography. Figure 2-2 is a schematic diagram of a STEP collection system.

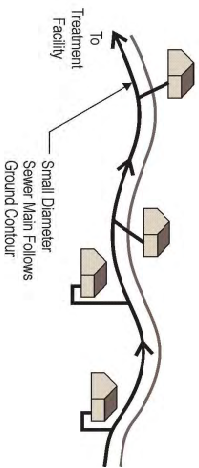
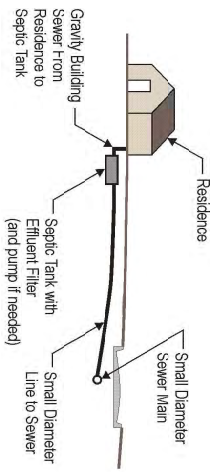


Figure 2-2. STEP Collection System

The major suppliers of these systems are Orenco and Zoeller. The STEP pumps are turbine style high-head pumps intended to pump effluent without solids. Solids, disposable wipes, and grease are all retained in the septic tank and are not pumped. By screening and retaining solids in the septic tank portion of the system, a reduced organic load to the WWTP would be realized.

STEP systems are often sold as a package system, including a septic tank or pretreatment/solids holding tank, screen, pump, and controls.

The pumps in STEP systems must be protected from solids by a screening system. It is recommended that STEP systems be inspected regularly to make sure the screen is functioning and there is not excessive solids or grease build up. Septic tanks associated with STEP systems require pumping to remove the accumulated solids.

Examples and illustrations of STEP system installations are provided below in Figures 2-3 to 2-6.



Figure 2-3. STEP Section View



Figure 2-4. Orenco Prelios™ System Tanks in the Field

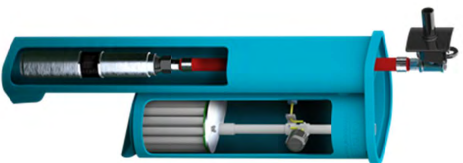


Figure 2-5. Orenco STEP System Pump and Screen



Figure 2-6. Orenco Preloos™ System Cutaway

Advantages of STEP systems include:

- Solids and grease are retained in the tank at the home.

- Minimal infiltration and inflow (I/I) concerns.
  - The small-diameter sewer mains can be installed at minimum depth of cover and can follow the surface terrain, reducing initial cost.
- Disadvantages of STEP systems include the following:
- Homeowner still has a septic tank to maintain.
  - Filter screens need to be inspected and cleaned periodically (annually or biannually recommended).
  - Septic tanks need to be pumped out periodically (typically every 3 to 5 years).

The Pahala STEP collection system would align with the County sewer system layout depicted in Figure 2-1 and consist of PVC schedule 40 pipe ranging from 2-inch to 6-inch in diameter. Projected to service 174 parcels, this collection system would consist of approximately 4,200 linear feet of 2-inch diameter, 3,400 linear feet of 3-inch diameter, 3,500 linear feet of 4-inch diameter, and 2,000 linear feet of 6-inch diameter pipes.

## 2.4 Reuse Existing Collection System

In 2004, C. Brewer Company contracted M&E Pacific to perform a sewer system evaluation for the town of Pahala. The results of this investigation determined that the existing sewer lines and manholes do not conform to the County sewer design standards. The existing sewer system was not constructed in the streets, but instead runs through easements located on private properties with many collection lines running adjacent to or beneath the houses. The results of a smoke test performed during the 2004 sewer system evaluation identified 14 locations of line breaks and/or pipe defects and 7 household units with defective sewer vents. In addition, the existing sewer system is over 80 years old, long surpassing its expected lifespan, and will require extensive repair and rehabilitation if chosen to be reused. The recommended alternative, which received overwhelming support from Pahala voters in 2004, consists of constructing a new sewer system in the streets to meet the County sewer standards and to allow the collection system to be owned and operated by the County (M&E Pacific, December 2004). Nearly 20 years have passed since the 2004 study was completed. In order to reuse the existing collection system into the future an updated condition assessment study is recommended to better identify system deficiencies. Substantial improvements will likely be necessary due to the age of the system. Reusing the existing collection system would require constructing the Phase 1 collection system project described above to tie into the WWTP and close the LCCs.

## 2.5 Cost Evaluations

A summary of the capital costs and life cycle costs for the alternative collection systems are presented in Table 2-3 for comparison. The life cycle costs consist of the 30-year net present value of the capital and O&M costs. Additional detail is included as Appendix A.

Table 2-2. Collection System Cost Summary			
Collection System Option	Capital Cost	Annual O&M Cost	Life-Cycle Cost <sup>a</sup>
New gravity sewers in streets	\$21.0 million	\$40,000/year	\$22.0 million
STEP system	\$18.6 million	\$129,000/year	\$22.2 million
Reuse existing collection system	\$7.3 million	\$120,000/year	\$10.2 million

<sup>a</sup> See section 7.2.3 for life-cycle cost assumptions.

The life-cycle costs are shown graphically in Figure 2-7. Reusing the existing collection system has the lowest capital and life-cycle costs.

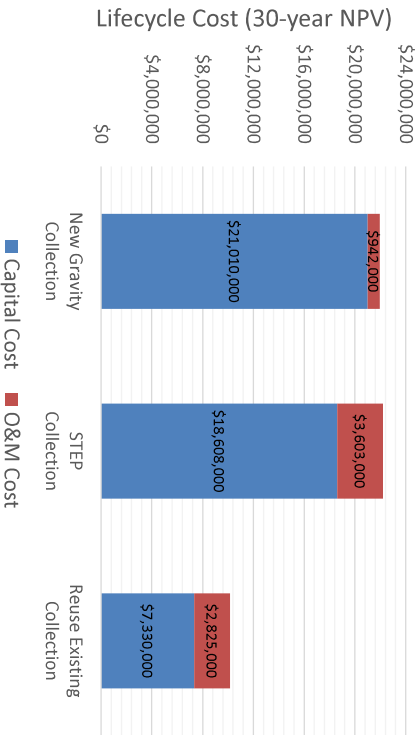


Figure 2-7. Life-Cycle Cost Comparison of Collection System Alternatives

## 2.6 Recommendation

Although reusing the existing collection system appears to incur lower life-cycle costs than the other alternatives it is not recommended for implementation. Due to the advanced age of the existing collection system the option would incur substantial financial and other risks to the County:

- The piping is at the end of its useful service life, and catastrophic failures are likely to increase in frequency, creating increased risk to public health and the environment.
- Most of the system is located in backyard easements, making it difficult to access and maintain.
- System expansion to accommodate sewerage additional areas of the town (in accordance with the Kau CDP) would not be feasible.
- The option does not address the AOC requirement to connect additional properties, that are currently not connected to the collection system, to the WWTP.

A new conventional gravity sewer collection system constructed in the streets is a viable solution to meet the wastewater collection needs of the town of Pahala and is recommended for implementation.



## Section 3

# Flow and Load Projections

This section summarizes the wastewater flow and load projections for the new Pahala WWTP.

### 3.1 Flow Projections Based on City and County of Honolulu Standards

HAR section 11-6-22-24(b) requires Counties to use their adopted wastewater flow standards to develop flow projections for WWTPs. Counties are to use the City and County of Honolulu (CCH) flow standards if they have not adopted their own standards. The County of Hawaii has not adopted its own flow standards, so wastewater flow projections were developed using the current CCH (2017) wastewater standards. Table 3-1 summarizes the flow projections.

Description	Value
Average dry weather flow	190,000 gpd
Peak day dry weather flow	369,000 gpd
Peak day wet weather flow <sup>a</sup>	655,000 gpd
Peak hour wet weather flow	625 gpm (900,000 gpd)

<sup>a</sup> Peak day wet weather flow is not part of the CCH standards but is an important WWTP design parameter. Peak day wet weather flow estimate was developed using an appropriate peaking factor.

The CCH standards were established for a major metropolitan area that includes vast areas of residential, commercial, and industrial development, with significant proportions of service areas near sea level elevations. Wastewater generation rates are generally lower in rural areas than in urban areas. The County's experience with the CCH flow standards on other projects (e.g., Honoka'a WWTP) has illustrated that the standards are very conservative for small rural communities located at higher elevations on Hawaii Island. Therefore, the current wastewater standards based on urban Honolulu are likely overly conservative for rural communities like Pahala.

### 3.2 Reduced Flows Based on Potable Water Records

The amount of wastewater generated within a residence will not exceed the amount of potable water used by the occupants. Therefore, potable water use records can be used to estimate wastewater generation rates within existing communities where no combined sewers are present. The County of Hawaii Department of Water Supply (DWS) provided potable water use records for the parcels located within the service area from January 2015 through June 2021. Analysis of the potable water use records indicates that a 40,000 gpd monthly wastewater generation rate would reflect the current needs of the service area. Using a 2.5 peaking factor to estimate the maximum wastewater flow into the collection system results in a maximum wastewater flow of 100,000 gpd.

#### 3.2.1 Dry Weather I/I Allowance

Groundwater can infiltrate into wastewater collection systems during dry weather, increasing flows to the WWTP. The 2017 CCH standards specify a dry weather infiltration and inflow (I/I) allowance of 35 gallons per capita per day (gpcpd). The previous CCH standards (dated 1993) specified a dry weather I/I allowance of 5 gpcpd for properties located above the groundwater table. Through the County's experience at Honoka'a evaluating dry weather I/I for a rural collection system located in Hawaii Island's well-drained geology, at elevations hundreds of feet above sea level and a significant distance from the shoreline, we conclude that continued use of the 1993 standard for dry weather I/I is appropriate for Pahala and using the 2017 standard would be overly-conservative.

#### 3.2.2 Wet Weather I/I Allowance

The 2017 CCH standards specify a wet weather I/I allowance of 3,000 gallons per acre per day (gpadd). Due to larger parcels within the Pahala service area, wet weather I/I estimates are modified as permitted by the 2017 CCH standards. The modified flows are based on a 50-foot-wide corridor of sewer laterals from existing or assumed building foundations on the property. These assumptions significantly reduce the wet weather I/I estimates for the collection system.

Evaluating the effluent flow records at the Honoka'a WWTP provides an appropriate analysis of the wet weather peaking factors expected at the Pahala facility. The results of the Honoka'a WWTP effluent flow analysis have determined that a peak day wet weather peaking factor of 6.5 is recommended for the Pahala WWTP design.

#### 3.2.3 Reduced Flow Projections

Accurately quantifying flow projections for the Pahala community is necessary to design an appropriately sized wastewater treatment and disposal facility. The WWTP design will provide sufficient capacity for the existing parcels within the service area, including newly accessible parcels, reflecting current development. This will allow the County to close the LCCs. Furthermore, the design will provide sufficient area within the WWTP site for future expansion. Table 3-2 provides a summary of the calculated WWTP capacities for the reduced flow projections and for the flow projections for future development based on the 2017 CCH Standards.

Description	Reduced Flow Projections	Flow Projections Based on 2017 CCH Standards
Base sanitary flow	40,000 gpd	119,000 gpd
Peak hour sanitary flow	100,000 gpd (PF=2.5)	298,000 gpd (PF = 2.5)
Dry weather I/I	8,000 gpd	71,000 gpd
Wet weather I/I	210,000 gpd	533,000 gpd
Average dry weather flow	48,000 gpd	190,000 gpd
Peak day dry weather flow	108,000 gpd	369,000 gpd
Peak day wet weather flow	312,000 gpd (PF=6.5)	655,000 gpd (PF=3.5)
Peak hour wet weather flow	221 gpm (318,000 gpd)	625 gpm (900,000 gpd)

HAR 11-62-23.1(i) requires the initiation of a facility planning process when the actual wastewater flows reach 75 percent of the design capacity of the WWTP, and implementation of the facility plan must be initiated when actual wastewater flows reach 90 percent of the design capacity. In anticipation of future development, we recommend the WWTP design be rated to treat an average dry weather flow of 95,000 gpd (approximately twice the projected average dry weather flow) to avoid the potential of having to initiate a facility plan shortly after the project is constructed. Note that the biological processes in the mechanical WWTP will need to be sized to treat the peak day dry weather flow of 108,000 gpd, not the average dry weather flow.

The proposed WWTP design capacity is based on actual water use data to establish wastewater generation rates, and rational assumptions to establish L/I allowances, and we believe it is appropriate for the existing conditions, while providing limited capacity for growth. Table 3-3 presents the recommended design capacity for the reduced flow projections.

Description	Value
Average dry weather flow	95,000 gpd
Peak day dry weather flow	108,000 gpd
Peak day wet weather flow	312,000 gpd
Peak hour wet weather flow	318,000 gpd (221 gpm)

### 3.2.4 Flow Variance

The County applied to DOH for a variance from HAR section 11-62-24(b) based on the above analysis; DOH granted the variance on January 26, 2022 (see Appendix B), and it must be renewed every five years. The variance contains the following conditions:

1. As a minimum, the Pahala Wastewater Treatment Plant (WWTP) shall be designed using an average dry weather flow of 95,000 gallons per day.
2. Plans for the proposed Pahala WWTP shall be designed in accordance with applicable requirements of Chapter 11-62, HAR and be submitted to the Wastewater Branch for review and approval. In addition, the WWTP shall be approved in writing before it may be used.
3. There is no automatic renewal. Should the applicant wish to renew this variance application, the applicant must submit an Application for Variance for renewal, 180 days prior to expiration date.

### 3.3 Influent Characteristics

The properties within the existing service area are primarily residential, but do include commercial, multi-family, and industrial zoned parcels. The wastewater characteristics of the WWTP influent are assumed to be similar to typical domestic wastewater. Table 3-4 provides a summary of the assumed influent characteristics.

Parameter	Value
5-day biochemical oxygen demand (BOD <sub>5</sub> )	300 mg/L
Total suspended solids (TSS)	300 mg/L
Total nitrogen	40 mg/L
Total phosphorus	7 mg/L

Source: Crites and Tchobanoglous, 1998.

### 3.4 Influent Mass Loads

Table 3-5 summarizes the projected loads to the WWTP, based on the proposed peak day dry weather capacity of 108,000 gallons per day and the influent characteristics presented above.

Description	Value
BOD <sub>5</sub>	270 lbs./day
TSS	270 lbs./day
Total nitrogen	36 lbs./day
Total phosphorus	6 lbs./day

# Effluent Management Options and Regulatory Requirements

Effluent management options are evaluated in this section, followed by an assessment of regulatory requirements for the recommended effluent management system.

## 4.1 Effluent Management Options

Effluent management options are evaluated below.

### 4.1.1 Ocean Discharge

Ocean discharge of treated effluent is not considered a viable option for this small community due to the long distance to the shoreline (approximately 3 miles), high cost to construct an outfall, stringent receiving water quality standards, high receiving water monitoring cost, and difficulty and length of time required to secure the required permits.

The coastal waters in the Pahala area are classified as “AA” marine waters by DOH. HAR 11-54 does not allow zones of mixing in waters up to a distance of 300 meters (one thousand feet) offshore if there is no defined reef area and if the depth is greater than 18 meters (ten fathoms). The water quality criteria for nutrients for Class AA embayments are listed in Table 4-1. If a mixing zone is not provided, then a WWP discharging to the coastal waters would be required to treat water to meet the applicable water quality criteria. Treatment to the specified levels is not feasible with current technologies. Therefore, ocean discharge is not feasible.

Parameter	Geometric mean not to exceed	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total nitrogen	200 µg/L	350 µg/L	500 µg/L
Ammonia nitrogen	6 µg/L	13 µg/L	20 µg/L
Nitrate + nitrite nitrogen	8 µg/L	20 µg/L	35 µg/L
Total phosphorus	25 µg/L	50 µg/L	75 µg/L

### 4.1.2 Subsurface Disposal via Injection Wells

Per Hawaii Administrative Rules (HAR), Title 11, Chapter 23, disposal to groundwater via an injection well is not allowed mauka of the State of Hawaii Department of Health (DOH) Underground Injection Control (UIC) line. Since the town of Pahala is located mauka of the UIC line, an injection well is not a viable option. In addition, per Environmental Protection Act 131, DOH is prohibited from issuing permits “for the construction of sewage wastewater injection wells unless alternative wastewater disposal options are not available, feasible or practical”. Therefore, subsurface disposal via injection wells is not feasible.

### 4.1.3 Water Recycling

An irrigation assessment was prepared to assess the viability of water recycling as the primary effluent management system, assuming the recycled water would be used to irrigate macadamia nut trees. Figure 4-1 presents a summary of the assessment, which shows there is typically no irrigation demand for six months of the year due to high rainfall. In addition, the DOH requires that all water recycling programs have a 100 percent backup disposal system in place to handle flow that does not meet recycled water quality standards or when recycled water supply exceeds demand. Therefore, water recycling is not a viable primary or sole effluent management strategy for the community at this time. However, water recycling treatment, storage, and distribution systems could be added in the future.

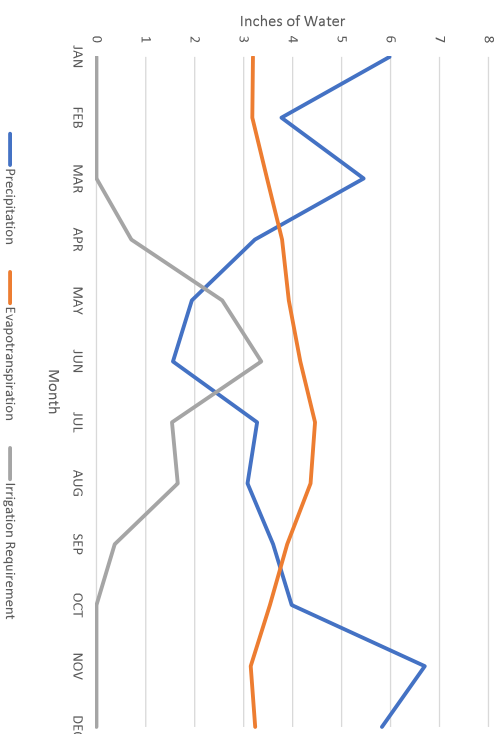


Figure 4-1. Irrigation Demand Assessment

### 4.1.4 Slow Rate Land Treatment

A potential project effluent management concept consists of Type 1 slow rate land treatment, which involves irrigation of vegetation with effluent. Type 1 slow rate land treatment differs from water recycling in that it is a disposal method, and effluent is typically applied in excess of the irrigation needs of the vegetation. The potential effluent management concept calls for removal of the existing macadamia nut trees at the site, grading the site to contain all precipitation, and planting native Hawaiian trees or replacement macadamia nut trees within the effluent disposal area. Effluent would be applied using surface (flood) irrigation techniques.

The effluent from the Pahala WWTP would be applied to land within the 14.9-acre WWTP parcel. Approximately 10 acres of the site is available for slow rate land treatment. The soil infiltration rate is a key factor in determining the land area requirements for a slow rate land treatment system. ASTM

D3385 double ring infiltrometer testing was conducted in January 2021 to assess the infiltration rate of the site soils. A total of 15 tests were conducted within the slow rate land treatment area; the results are summarized in Table 4-2.

**Table 4-2. Pahala WWTP Soil Infiltration Test Results**

Test Location	Test Depth (feet)	Geologic Unit	Infiltration Rate (inches/hour)
TP-1	1.2	Fill/tephra	4.2
TP-2	2.5	Weathered tuffaceous deposits	2.8
TP-3	2.0	Weathered tuffaceous deposits	4.5
TP-4	2.2	Fill/tephra	4.3
TP-5	1.3	Weathered tuffaceous deposits	0.6
TP-6	1.5	Fill/tephra	1.2
TP-7	3.8	Weathered tuffaceous deposits	4.1
TP-8	2.8	Weathered tuffaceous deposits	1.9
TP-9	1.0	Fill/tephra	1.0
TP-10	4.0	Weathered tuffaceous deposits	3.8
TP-11	1.0	Fill/tephra	2.6
TP-12	1.0	Fill/tephra	1.9
TP-13	1.2	Fill/tephra	1.3
TP-14	1.0	Fill/tephra	2.9
TP-15	1.0	Fill/tephra	1.4
Average:			2.6

The results of the infiltration rate investigation confirms that the site will provide adequate land area to meet the both the current and future needs of the community using standard slow rate land treatment design criteria. A water balance was prepared for the reduced wastewater flow projections, assuming 10 acres of the site are used for slow rate land treatment. The site water balance includes effluent applied to the site, precipitation on the site, and anticipated evapotranspiration by the trees. Table 4-3 summarizes the results of the water balance.

**Table 4-3. Pahala WWTP Effluent Disposal Water Balance**

Month	Days	Effluent Application <sup>a</sup> (mgal)	(inches)	Average Precipitation <sup>b</sup> (inches)	Evapotranspiration <sup>c</sup> (inches)	Percolate <sup>d</sup> (inches)
Jan	31	2.9	10.8	5.98	3.9	13.0
Feb	28	2.7	9.8	3.77	3.9	9.7
Mar	31	2.9	10.8	5.45	4.2	12.1
Apr	30	2.9	10.5	3.23	4.9	8.9
May	31	2.9	10.8	1.94	5.3	7.5
Jun	30	2.9	10.5	1.56	5.6	6.4
Jul	31	2.9	10.8	3.27	6.1	8.1
Aug	31	2.9	10.8	3.08	5.9	8.0
Sep	30	2.9	10.5	3.60	5.3	8.8
Oct	31	2.9	10.8	3.98	4.8	10.0
Nov	30	2.9	10.5	6.70	4.0	13.2
Dec	31	2.9	10.8	5.82	4.2	12.5
Totals	365	34.7	127.7	48.4	58.0	118.0

<sup>a</sup> At ADWR capacity = 95,000 gpd.

<sup>b</sup> From Climatology of the United States No. 20, Monthly Station Climate Summaries, 1971-2000, Hawaii, National Oceanic and Atmospheric Administration, April 2005.

<sup>c</sup> Pan evaporation from Pan Evaporation, State of Hawaii, 1894-1983, Report #74, State of Hawaii Department of Land and Natural Resources, August 1985. Crop coefficients for macadamia nuts from Irrigation Water Requirement Estimation Decision Support Systems (IMREDS) to Estimate Crop Irrigation Requirements for Consumptive Use Reinitiating in Hawaii, August 2013, State of Hawaii Commission on Water Resources Management, August 2013.

<sup>d</sup> Effluent application plus precipitation minus evapotranspiration.

As shown in the table, effluent application and precipitation are expected to exceed the evapotranspiration of the macadamia nut crop during all months of the year. The maximum percolate volume shown in the table assumes all precipitation percolates into the soil.

An annual nutrient balance was also prepared for the site, based on the water balance shown in Table 4-3. The orchard of mature macadamia nut trees is expected to use up to 400 lbs. of nitrogen per acre per year (University of Hawaii Agricultural Experiment Station, January 1959). The effluent will supply approximately 289 lbs./acre/year of total nitrogen, assuming an effluent concentration of 10 mg/L. Although the nitrogen uptake of the orchard is expected to be greater than the total mass of nitrogen applied by the effluent, the predominant nitrogen species in the effluent is expected to be nitrate, which is soluble and readily transportable through the soil profile. The trees will only be able to use the nitrate contained within water that is transpired. The percolate volume shown in Table 4-3 is expected to contain approximately 8.5 mg/L of nitrogen as nitrate, because soil denitrification losses of 15 percent can be expected. Therefore, the land treatment system is expected to remove approximately 21 percent of the total nitrogen applied to the site with WWTP effluent.

**4.1.5 Subsurface Drip Irrigation Disposal**

Another effluent management concept is to retain the existing site topography along with the macadamia nut tree orchard and use subsurface drip irrigation technology to apply the effluent. Subsurface drip irrigation would be used to apply effluent to the existing macadamia nut trees within the effluent disposal area. The use of subsurface drip irrigation technology to disperse effluent at the

site will allow the County to retain the existing mature macadamia nut trees, and will significantly reduce the amount of clearing, grubbing, and grading required to construct the facility. In addition, retaining the existing mature orchard is expected to effectively block views of the facility from both the Hawaii Belt Road and Maile Street.

Drip irrigation technology has evolved to the point where non-clog emitters are available for subsurface applications of effluent. Non-clog subsurface emitters decrease the potential for the irrigation components to be clogged by roots. Figure 4-2 illustrates the subsurface drip concept. Drip tubing with integral emitters is buried 6 to 9 inches below ground. Effluent emitters are typically designed to operate at a flow rate of 1 gallon per hour (gph) and are typically spaced every 2 feet along a drip line. Pressure compensating drip systems typically operate under pressures ranging from 10 to 45 pounds per square inch (psi).

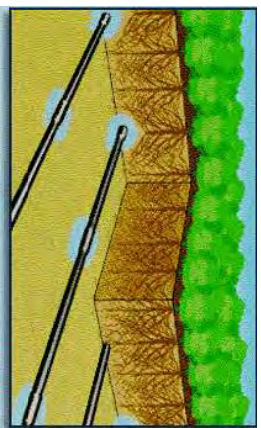


Figure 4-2. Subsurface Drip Irrigation Concept

(Courtesy of Geeflow, Inc.)

#### 4.1.5.1 Operation and Maintenance (O&M) Needs

Subsurface drip irrigation technology incurs greater operation and maintenance than a surface irrigation system. The County will need to periodically flush the drip lines to remove debris. As described below, a significant number of drip lines will be necessary to accommodate peak flow rates. In addition, periodic chlorination will be required to remove biological growth from the drip lines. These O&M tasks will need to be completed on a regular schedule, because the drip system will be buried and not readily accessible or observable. During periods of dry soil conditions, the County will need to inspect the orchard for patches of wet soil that would indicate a localized failure that requires repair. Flow and pressure monitoring will also be useful tools for validating the status of the subsurface drip system. The land treatment area would be divided into multiple irrigation zones, allowing a zone to be taken out of service for maintenance purposes. A fence will be constructed around the site to deter entry by humans and ungulates.

#### 4.1.5.1.1 Stormwater Runoff Considerations

The subsurface drip system would slowly disperse effluent 6 to 9 inches below the ground surface, therefore operating as a subsurface disposal system similar to a leach field. Effluent is not intended to surface with a properly operating subsurface drip system. Precipitation falling on the site will either percolate into the soil or run off as surface drainage. The water balance shown in Table 4-3 assumes all precipitation percolates into the site soil, which is a conservative assumption. The amount of runoff from the site will vary with the storm intensity; precipitation rates in excess of the infiltrative capacity of the site soils will result in runoff. The existing site is graded to drain to a culvert under the Hawaii Belt Road at Maile Street. The implementation of a subsurface disposal system will

allow the existing grading to be retained, because stormwater runoff will not come into contact with, and therefore will not contain, effluent.

#### 4.1.6 Leach Field

A leach field could potentially be constructed for subsurface disposal of treated effluent. Preliminary assessment of the concept based on the site soil characteristics indicate approximately 10,000 and 20,000 linear feet of drain field trench would be required to accommodate the anticipated flows for the phase 1 and phase 2 collection system, respectively. It would be difficult to evenly distribute effluent throughout a drain field of this size. In addition, DOH regulations require a redundant drain field for subsurface disposal systems, making this option expensive to implement. This option is considered impractical for the community.

#### 4.1.7 Existing Cesspool Conversion

A previous study (SSFMA, July 2007) suggested that the existing LCC located on the County-owned parcel TMK 9-6-002:024 could be converted to a seepage pit that would be regulated by DOH as an injection well. HAR 11-23-07 allows injection wells located mauka of the UIC line that were in existence prior to July 6, 1984 to continue to operate. However, the flow to the wells cannot increase, nor can a new well be constructed. Therefore, the earlier plan to convert the existing LCC to a seepage pit is not feasible for the following reasons:

- Closing LCC No. 2 that is located on private property would not be allowed, as it would increase the flow to LCC No. 1 (converted to a seepage pit that is regulated as an injection well) that is located on County property.
  - The capacity, structure, and condition of the existing LCC No. 1 is not known. The LCC could either be a lava tube or a large conventional cesspool. A geotechnical investigation conducted on the site to depths of 30 to 35 feet did not reveal the presence of lava tubes (Masa Fujiohka & Associates, January 9, 2007), therefore it is likely a large conventional cesspool. The County attempted to determine the structure and condition of the LCC via closed circuit TV inspection but could not ascertain either due to technological limitations. It is not known if the LCC could accommodate the flow from the existing service area if LCC No. 2 is closed.
  - HAR 11-62-25 requires new and proposed effluent disposal systems to have a backup disposal system capable of handling the peak flow. A second seepage pit cannot be constructed to comply with the regulatory requirement because the site is located mauka of the UIC line. If the existing seepage pit were to fail, then a replacement cannot be constructed.
  - The Kau Community Development Plan (CDP) requires the County to provide for eventual construction of sewers throughout the community. Providing sewers for the entire community will increase wastewater flows. Increasing flow to the existing LCC (converted to a seepage pit) would not be allowed. Therefore, the use of the existing LCC as a disposal system could prevent the County from providing the community's desired future wastewater needs.
  - The current AOC requires connection of 65 additional properties. This would increase the flow to the existing LCCs (converted to a seepage pit). Increasing flow to the existing LCC (converted to a seepage pit) would not be allowed.
- For these reasons, converting the existing LCCs to a seepage pit is not considered to be a feasible option.

#### 4.1.8 Recommendation

The results of the effluent management investigation have determined that a subsurface drip irrigation system is the recommended method of effluent disposal for the Pahala WWTP.

Recommended design criteria for the subsurface drip irrigation system are presented in Table 4-4. The disposal system will be sized to handle the peak day wet weather flow of 312,000 gpd. An irrigation equalization and control tank are proposed to equalize higher peak flows and to allow discrete dosing of the orchard in irrigation zones; constant application of water would be detrimental to the health of the trees.

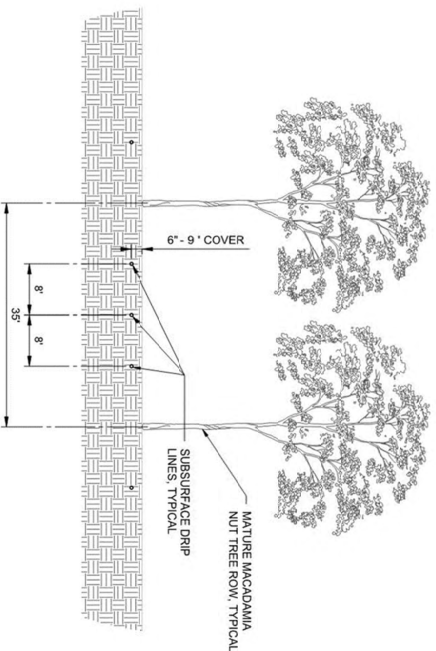
HAR 11-62 requires a fully redundant subsurface disposal system. The design criteria shown in Table 4-4 are based on providing a subsurface drip system that is two times larger than needed in order to satisfy the HAR 11-62 requirement for redundancy. The drip system will be divided into two separate systems so that the peak day wet weather flow can be disposed on the site using one system while the second system is out of service for maintenance.

**Table 4-4. Recommended Subsurface Drip Design Criteria**

Description	Value
Average dry weather flow	95,000 gpd (66 gpm)
Peak day wet weather flow	312,000 gpd (21.7 gpm)
Irrigation equalization and control tank volume	20,000 gallons
Land treatment area	10 acres
Subsurface drip emitters	1 gallon per hour, pressure compensating
Number of emitters needed for peak day wet weather flow	13,000 emitters
Number of systems	2 (1 active, one redundant)
Number of emitters provided to provide 2x redundancy	26,000 total emitters
Emitter spacing	2 feet
Drip line length per system	26,000 feet
Total drip line length	52,000 feet
Drip line depth	6 to 9 inches
Number of irrigation zones	6 (3 per system)
Length of drip line per zone	8,667 feet
Flow per irrigation zone	72 gpm
Irrigation system monitoring	Flow meters) and pressure indicators

Figure 4-3 provides a conceptual view of the recommended Pahala subsurface drip system. The subsurface drip lines are to be located between the existing row of trees and spaced to disperse effluent evenly throughout the orchard. During high flow conditions the irrigation control system will open multiple irrigation zones to accommodate the disposal needs.

Additional drip lines will need to be added when the WWTP capacity is expanded. The minimum spacing between drip lines is 2 feet, so there will be sufficient space between the initial drip lines to add additional drip lines as part of future expansion project(s).



**Figure 4-3. Conceptual Subsurface Drip Irrigation System at Pahala**

#### 4.2 Treatment Requirements

The DOH regulates subsurface drip irrigation disposal as "land disposal" per Hawaii Administrative Rules (HAR) 11-62. Table 4-5 lists the applicable effluent requirements for land disposal applicable to the project that were in effect at the time this report was prepared.

Description	Value	HAR Reference
BODs	30 mg/L monthly average 60 mg/L peak	11-62-26
TSS	30 mg/L monthly average 60 mg/L peak	11-62-26
Disinfection	Except for subsurface disposal systems, continuous disinfection of the treated effluent shall be provided	11-62-24
Setbacks	Treatment units shall be not less than 25 feet from property lines nor less than 10 feet from any building	11-62-23.1
Public accessibility control	6-foot-high fence surrounding treatment units	11-62-08

## Section 5

# Wastewater Treatment Evaluations

This section presents the evaluations conducted in development of the proposed WWTP.

### 5.1 Preliminary Treatment

The preliminary treatment system will include influent flow measurement, influent sampling equipment, screening, and grit removal.

#### 5.1.1 Influent Flow Measurement

Influent flow measurement is recommended to allow assessment of flows and loads to the biological treatment process, and to assess the biological treatment process performance. A Parshall flume will be provided upstream of the screening system to continuously record influent flow rates. Parshall flumes work well for influent measurement because the flume can operate in an open-channel configuration, can accommodate wide ranges of flows, and is self-cleaning. A straight approach length of at least 20 times the flume throat width will be provided upstream of the flume to provide favorable hydraulic conditions.

#### 5.1.2 Influent Flow Sampling

An automatic refrigerated composite sampler is recommended to allow influent composite samples to be collected. Influent composite samples, when combined with influent flow measurement, can be used to calculate influent mass loading rates to the WWTP to assess the treatment performance and optimization of aeration rates in the biological treatment process. Periodic influent sampling is also recommended to monitor for changes in the influent characteristics.

#### 5.1.3 Screening

Screening is recommended to protect the downstream system operations from large objects, debris, wipes, and rags that can be present in wastewater. The industry trend is towards finer screening systems that remove greater amounts of debris from the waste stream: screens with 6-millimeter (mm) (1/4-inch) openings are frequently used for activated sludge treatment systems. Finer screens are used upstream of membrane bioreactors to remove hair that can foul the membranes. The screenings volume at the Palala WWTP is expected to be small, subsequently screenings disposal is expected to be infrequent, weekly at most. Therefore, the screenings must be washed of organic debris to prevent the accumulation of nuisance odors and flies in the screenings barrel or bag between screening disposal events.

##### 5.1.3.1 In-channel cylindrical screen

We recommend an in-channel cylindrical screen for this installation. The in-channel cylindrical screen combines screening, screenings washing, dewatering, compacting, and bagging/disposal within a single unit. The screening portion consists of an inclined screen basket inserted into the wastewater channel. The screening basket can consist of bars, perforated plates or sieves, depending on the application and clear opening required. The controls can be set to allow a mat to build up on the screening surface, allowing finer screening of the wastewater. Controlled by head loss, a rake arm starts rotating within the screen basket, pushing the screenings off the rake and into a perforated screenings hopper located at the screen's central axis. A shafted auger along the screen axis

conveys the screenings from the hopper through an inclined tube, which dewaterers and compacts the screenings. The tube includes a perforated dewatering section. The discharged screenings are about 40-percent dry and can be discharged into a bin or directly into a bagging system. Figure 5-1 illustrates the process. Manufacturers include Lakeside and Huber. The key benefit to this system is the integrated screenings washing system, minimizing additional screenings handling and odor potential.

For this installation, the headworks will include one in-channel cylindrical screen, plus a bypass channel with manually cleaned bar rack.

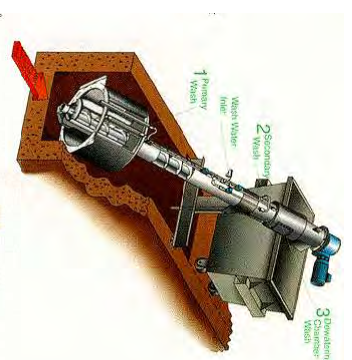


Figure 5-1. In-Channel Cylindrical Screen

#### 5.1.4 Grit Removal

Grit is comprised of particles that are heavier than the organic biodegradable matter in wastewater. Grit particles can consist of sand, gravel, pebbles, silt, cinders, ground bone, eggshells, coffee grounds, and other materials. Grit in the wastewater collection and treatment system causes abrasive wear to mechanical equipment, piping, and appurtenances. Grit can also form deposits in pipelines, channels, and tanks, which reduces hydraulic capacity and can damage equipment. Removal of grit is very important to help prevent wear to downstream equipment, costly service interruptions and repair.

Grit removal systems usually are placed between screening and primary treatment. At this point, the largest materials have been removed by the screens and will not interfere with grit handling equipment.

There are several types of grit removal methods, including induced vortex grit removal, aerated grit chambers, and lamella plate settlers. The type of grit removal chosen is mainly dependent on the size of the incoming grit particles and the desired capture rate. Removed grit must be washed, dewatered, and disposed.

##### 5.1.4.1 Induced Vortex Grit Removal

Historically, vortex grit removal or the circular grit chamber has been the most widely used method for grit removal in the U.S. Vortex grit removal relies on the principle that grit has a greater specific gravity than organic matter.

There are two configurations of vortex grit removal systems: a sloped bottom unit and a flat bottom unit. The sloped bottom unit relies on particle settling to remove grit. Flow enters the grit chamber tangentially to provide the longest flow path around the inside of the circular grit chamber. This longer flow path is designed to achieve a sufficient retention time to allow grit to settle. The sloped bottom funnels the settled grit into a hopper below the basin. A sloped bottom vortex grit unit cross section is shown in Figure 5-2.

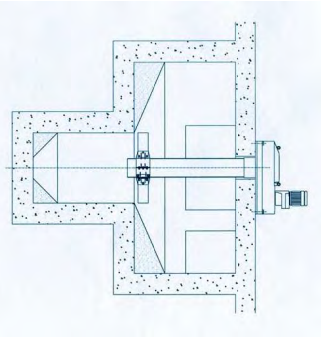


Figure 5-2. Sloped Bottom Vortex Grit Removal Cross Section

The flat bottom vortex system relies on hydraulic removal instead of specific gravity alone to remove grit from the wastewater stream. Flat bottom vortex systems use two paddles within the interior of the grit chamber that induce a toroidal flow pattern to move grit along the bottom towards the center. Once collected at the center of the grit chamber, a propeller forces excess grit down into the hopper. A flat bottom PISTA® Grit unit is shown in Figure 5-3.



Figure 5-3. Flat Bottom PISTA® Grit Removal

5.1.4.2 Vortex Grit Removal Capture Rate

In Brown and Caldwell's experience, it is necessary to de-rate vortex type grit removal units by a factor of 50 percent of the advertised capacity to achieve satisfactory performance, due to the short



detention time in the chamber. At large flow rates, the small-chambered vortex type units tend to resuspend smaller grit particles which become a problem for downstream processes.

Table 5-1 lists some advantages and disadvantages of the vortex type grit removal.

Table 5-1. Induced Vortex – Advantages and Disadvantages

Advantages	Disadvantages
Low maintenance	Re-suspends/low capture rate of fines
Low headloss	Poor capture efficiency
Small footprint	

5.1.4.3 Aerated Grit Removal

Aerated grit chambers are tanks that function specifically to remove inorganic solids from the wastewater stream. Aerated grit tanks are designed to induce sufficient vertical velocity in order to separate organic and inorganic solids. In theory, inorganic solids have a higher specific gravity than organic solids, and therefore require higher vertical velocities to keep them in suspension. Air diffusers placed near one longitudinal tank wall induce a roll in the contents of the grit tank. This roll creates maximum velocities near the walls and lower velocities at the surface and bottom of the tank. The lower transverse horizontal velocities allow inorganic particles to settle out and be transported to the grit hopper by shear-induced currents.

Aerated grit chamber design is based on providing sufficient hydraulic detention time during peak wet weather flow (PWWF) conditions. In Brown and Caldwell's experience, it is necessary to provide at least 10 minutes of detention time to achieve satisfactory grit removal.

Aerated grit tanks can provide excellent grit removal with minimal headloss, but the chambers themselves require a larger footprint than induced vortex systems. Proper operation of aerated grit tanks can be difficult under varying hydraulic loads due to the need to make fine adjustments to the air diffusers.

Figure 5-4 illustrates the particle settling action of an aerated grit chamber.

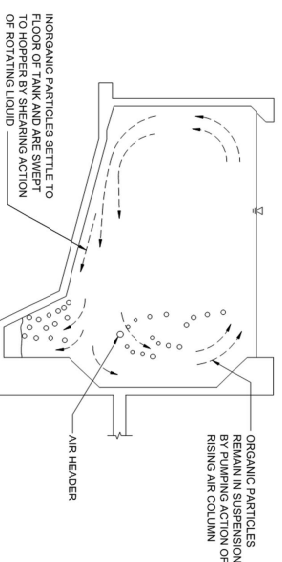


Figure 5-4. Aerated Grit Removal Schematic





Table 5-2 lists some advantages and disadvantages of aerated grit chambers.

Advantages	Disadvantages
Low headloss	Large footprint
Once airflow is dialed in, the maintenance is low	Requires fine tuning diffuser airflow for optimal performance
Effective removal of fines	High capital cost
Provides additional aeration; “freshens” sewage prior to primary clarification. Reduces denitrification in primary clarifiers.	High O&M cost due to blowers

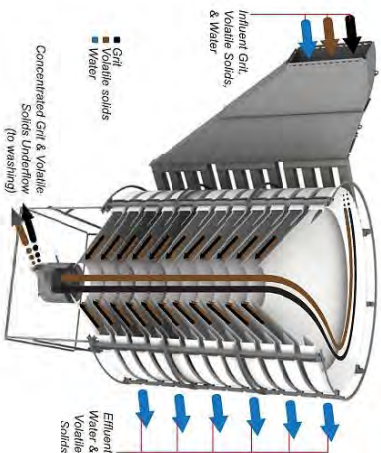
A variation of aerated grit removal technology that can be used in small WWTps like Pahala is an aerated grit trap. A small, aerated tank is provided to allow grit to settle. Aeration is provided to maintain organic solids in suspension and to “freshen” the influent. Accumulated grit is periodically removed using a Vector truck.

**5.1.4.4 Lamella Grit Removal**

This proprietary technology from Eutek, called the HeadCell, consists of sloped trays stacked in deep tanks. Flow enters the tanks tangentially and establishes a vortex flow pattern. Solids settle onto each plate and fall toward an opening at the center of each plate. The grit collects at the cone shaped bottom of the tank where it is pumped to be washed and dewatered. Effluent flows out of the trays, over a weir, and into an effluent trough.

Grit capture is all done hydraulically and there are no moving parts. The headloss through each HeadCell is around one foot. HeadCells can be sized to provide up to 50 mgd of capacity within a single unit.

With the stacked tray design, the HeadCells can achieve a 95 percent capture rate of grit 75 microns and larger. The multiple trays provide a large surface area for settling multiple size particles. The treatment capacity of the HeadCell is greater than other technologies with the same footprint. Figure 5-5 is an illustration of a section cut through the HeadCell process.



**Figure 5-5. Headcell Process Schematic**

Table 5-3 lists advantages and disadvantages of the Headcell.

Advantages	Disadvantages
Effective removal of fines	High capital cost
Small footprint	Short history of installations
No moving parts	
Low operating cost	

**5.1.4.5 Grit Particle Size Considerations**

Most grit technologies and literature assume that grit is a clean sand or silica particle with a specific gravity of 2.65. In reality, grit particles are often coated with fats, grease, and organic material that reduce the particle’s specific gravity. Grit particles with lower specific gravity have lower settling velocities, behaving like lighter and smaller grit particles.

The sand equivalent size (SES) is the size of a clean sand sphere that exhibits the same settling velocity as the coated grit particles. For example, a grease coated grit particle with a physical size of 200 microns may settle and behave like a clean particle with an SES of 150 microns.

**5.1.4.6 Efficiency comparison**

Each of the alternatives claims a minimum particle size and capture rate. These claims are based on the ideal, clean grit particle. As previously discussed, in reality grit particles are coated with fats and grease and do not exhibit the behavior of ideal grit particles. The capture rates have to be derated to reflect the SES of the particles. Table 5-4 compares the claimed minimum particle size captured of the alternatives discussed.

Alternative	Targeted Particle Size
Induced Vortex	105 µm
Aerated Grit Removal	105 µm
HeadCell	75 µm

The Headcell is able to remove the finest particles, with up to 95 percent removal of particles with a physical size down to 75 microns.

#### 5.1.4.7 Grit Removal Recommendation

A simple aerated grit trap located downstream of the screening process is recommended for the Pahala WWTP. Accumulated grit would be periodically removed using a Vacor truck, and dried onsite in a small drying bed. The dewatered grit would be disposed at the landfill.

An aerated grit trap provides adequate performance with a relatively uncomplicated process.

Although a Headcell grit removal system could potentially provide a slightly increased grit capture rate, that benefit is not likely to surpass its significantly higher costs and operational complexity. The capture rate of an aerated grit trap is sufficient to protect the downstream processes recommended in this report. High levels of grit removal are particularly important for anaerobic digestors, which are not anticipated for this facility.

#### 5.1.5 Odor Control

A notorious location for foul odor is the headworks of a wastewater treatment plant. This odor is caused by hydrogen sulfide (H<sub>2</sub>S), which is formed under anaerobic conditions of the wastewater collection system. Due to H<sub>2</sub>S low solubility in wastewater, when there is an excessive concentration of H<sub>2</sub>S in the wastewater or if there is turbulence, H<sub>2</sub>S gas escapes into the atmosphere. This release produces the distinct rotten egg smell. In addition to H<sub>2</sub>S, there are other foul odorous compounds that can be released from wastewater, such as ammonia, amines, diamines, mercaptans, skatole, and organic sulfides.

Treatment of foul odors can be approached in two ways: preventing odors through liquid treatment or controlling odors in the gas phase. While liquid treatment provides control of odors prior to their release, gas phase treatment involves the collection and treatment of gases once they have been released from wastewater. Treatment methods can be aimed at one type of odor or can treat a range of odors.

##### 5.1.5.1 Granular Activated Carbon

A granular activated carbon (GAC) scrubber is recommended for the Pahala WWTP headworks. A GAC scrubber passes odorous air through a bed of activated carbon, which adsorbs the odorous constituents within the pore spaces of the carbon.

Chemical oxidation or reduction of some compounds can also occur. As pore spaces become occupied, efficiency degrades, and the carbon must be replaced or regenerated. Carbon is most effective on higher molecular weight molecules such as the organic sulfur compounds, which makes it the technology of choice. Package GAC scrubbers are available for small headworks and vessels can be situated vertically, horizontally, or radially to optimize footprints and reduce structure elevation profiles. Figure 5-6 illustrates the process. The County currently operates GAC scrubbers at other facilities and purchases the GAC media in bulk to reduce costs.

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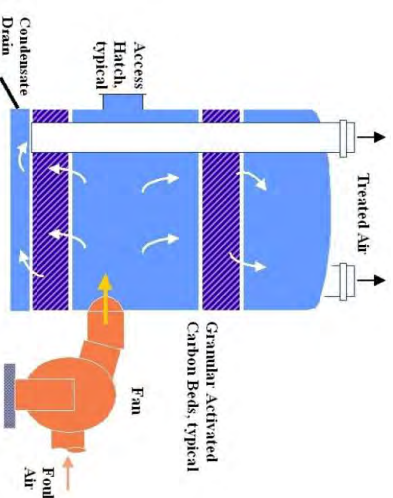


Figure 5-6. Activated Carbon Scrubber (GAC)

#### 5.1.6 Recommendation

The following are recommended for the Pahala WWTP headworks:

- Parshall flume influent flow measurement.
- Refrigerated automatic composite sampler.
- In-channel cylindrical screen with integrated washer.
- Aerated grit trap.
- Covered channels with foul air collection and GAC scrubber

#### 5.2 Secondary Treatment

Secondary treatment process provides BOD<sub>5</sub>, TSS, and nutrient removal via biological treatment. This section provides descriptions of various secondary treatment options including advantages, disadvantages and applicability to the Pahala WWTP. The treatment options are then screened to identify technologies for further evaluation.

##### 5.2.1 Membrane Bioreactor (MBR)

A membrane bioreactor (MBR) has the smallest footprint of the various biological treatment systems available and provides the highest quality effluent. An MBR basically combines an aeration basin with membrane filtration, eliminating the need for tertiary treatment if a very high-quality effluent is desired for water reuse purposes.

Membranes provide an absolute barrier to large particles; total suspended solids (TSS) concentrations of the effluent (also known as "filtrate") are typically less than 1 mg/L. Effluent from an MBR process can meet stringent water recycling turbidity requirements without an additional filtration process.

The main difference between MBRs and other biological treatment technologies is the method of separating the bacteria from the clean water. MBRs have thin membranes with many thousands of

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micro-perforations. Depending on the manufacturer, these perforations are 0.04 to 0.2 microns (4 to 20 hundred-thousandths of a millimeter) in diameter, too small for the passage of most microorganisms or other particles present in the wastewater, but large enough to allow the passage of water molecules.

Figure 5-7 is an illustration of an MBR. Figure 5-8 shows submerged MBR membranes in clean water.

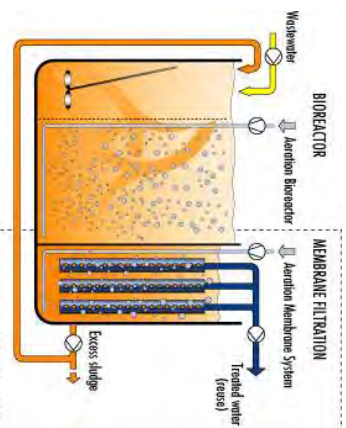


Figure 5-7. Membrane Bioreactor Illustration



Figure 5-8. Membrane Cassettes at Johns Creek Environmental Campus, Fulton County, GA

Important considerations of an MBR system include:

- Small capacity MBRs can be purchased as a packaged treatment system.
  - MBRs can be designed and programmed to achieve nutrient reduction.
  - The membranes cost is significant and membranes must be replaced every 10 to 15 years.
  - Membrane fouling can occur with wastewater with high fats, oils, and grease (FOG) levels
  - MBRs require the use of membrane cleaning chemicals, typically sodium hypochlorite and citric acid.
  - The process requires a computer control system and is difficult to operate efficiently if the computer malfunctions.
  - The process incurs high electrical power costs, relatively high costs for cleaning chemicals, and high overall O&M costs. Highly skilled labor is required for some of the O&M tasks.
- The MBR process would produce an effluent that is of high quality and has a small footprint, but has high overall capital, O&M, and lifecycle costs. MBR is retained for further evaluation.

### 5.2.2 Sequencing Batch Reactor (SBR)

Sequencing batch reactors (SBRs) are fill-and-draw systems that combine the processes of activated sludge in a single reactor. The reactor is filled with wastewater, where aeration, settling, and decanting occurs. By combining these processes, the need for secondary settling is not required. Denitrification can be achieved by incorporating an anoxic fill step in the cycle or a separate anoxic zone. A minimum of two SBR reactors are typically used for the process.

SBRs are capable of producing high quality effluent and are potentially space saving in that separate secondary sedimentation is not needed. However, SBRs are operated by a proprietary computer control system, cannot be operated in manual mode, and may require influent and/or effluent equalization (and thus increasing the footprint requirements). Considering these challenges, SBRs will not be considered further.

### 5.2.3 Nereda (Granular Activated Sludge) Process

The Nereda technology is a granular activated sludge process that utilizes proprietary granules in an SBR. Features of the process include simultaneous fill and draw, fast settling, and approximately 1/5 the footprint of traditional activated sludge systems. The process was developed in Europe and most current full-scale applications are located in Europe. In the U.S., the process is marketed by Aqua Aerobic Systems, Inc. according to the supplier website, there are currently only two full-scale operating systems treating municipal wastewater in the United States. One is a demonstration facility, and the other is a 3.6 mgd facility in Alabama that began operation in early 2020. Figure 5-9 is a conceptual illustration of the Nereda process.

Due to the challenges listed for an SBR and the lack of long-term operational experience in the United States, the Nereda process is considered not appropriate for the Pahala WWTP application.

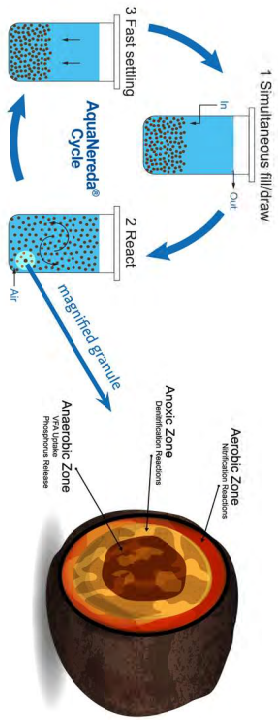


Figure 5-9. Nereda Process  
Courtesy: Aqua Aerobic Systems

**5.2.4 Oxidation Ditch**

An oxidation ditch is a variation of the complete-mix extended aeration activated-sludge process. The process generally has a long solids residence time (SRT) and high mixed liquor suspended solids (MLSS) concentration, making it resilient to upset by peak organic loads. The typical SRT for oxidation ditches ranges from 15 to 30 days, and the MLSS is generally between 2,000 and 5,000 mg/L. Oxidation ditches are often oval in shape and have been called “racetrack” reactors. The depth of the ditch typically ranges from 4 to 12 feet. Mechanical aerators in the ditch provide aeration and mixing. Strategic placement of the aerators creates aerobic and anoxic zones within the oxidation ditch, for effective nitrification and denitrification. Biological phosphorus removal is also possible.

Oxidation ditches are usually preceded by preliminary treatment, such as screening and grit removal. Primary settling is typically not included upstream of oxidation ditch systems. Return activated sludge (RAS) is pumped from the secondary clarifier back into the ditch.

Figure 5-10 presents a schematic of an oxidation ditch. Typically, rotating brush or disc mechanical aerators are used to move mixed liquor around the tank and to provide aeration. The aerators help mix scum into the water column for treatment. The rigorous mixing action of the mechanical aerators can generate off-spray. Oxidation ditches are not available as packaged treatment systems. Because of the large footprint requirements and non-availability of packaged treatment units, the oxidation ditch process is eliminated from further evaluation.

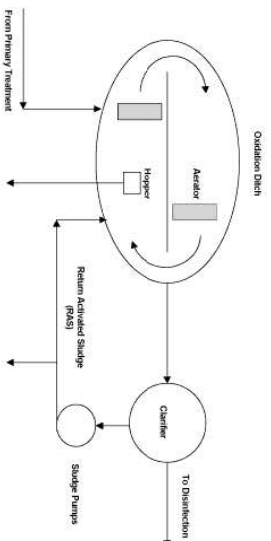


Figure 5-10. Typical Oxidation Ditch Schematic

**5.2.5 Extended Aeration Activated Sludge Package Plant**

Extended aeration is a less-complex system which can operate without primary treatment or anaerobic digestion. The treatment provides a completely mixed process operated at long hydraulic detention times and high sludge age. The process uses larger aeration tanks with extended solids retention times (SRTs) of over 20 days. Careful consideration needs to be given to the capacities of motors, pumps, and compressors in order to ensure the process can handle variations in flow. The basic extended aeration process schematic is shown in Figure 5-11.

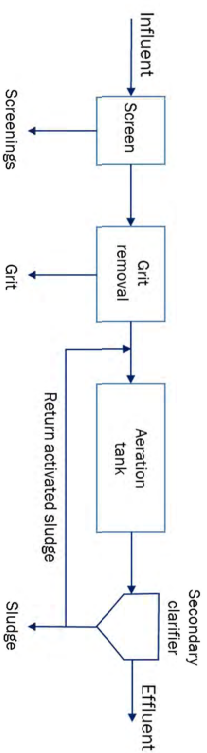


Figure 5-11. Extended Aeration Process Schematic

The process is generally limited to smaller WWRFs and is often used in prefabricated packaged plants. The range of typical SRTs on the mainland is 20 to 40 days, and the process generally operates with MLSSs between 2,000 and 5,000 mg/L. The long SRT and relatively high MLSS makes the process resistant to shock loading and stable but requires somewhat larger tanks and therefore incurs higher aeration costs for a given flow, compared to other forms of activated sludge. Sludge settling can be problematic in the tropics due to denitrification occurring in mixed liquor caused by the relatively high water temperatures. The process is similar to the oxidation ditch technology previously described but would use diffused aeration rather than mechanical aeration. The process is forgiving and resistant to shock loadings. Due to sludge settling challenges in the tropics this process will not be considered further.

**5.2.6 Activated Sludge with Anoxic Selector**

This process is similar to extended aeration but would employ a shorter SRT of less than 10 days and would operate at a MLSS concentration between 1,500 and 4,000 mg/L. Figure 5-12 shows a process schematic for this process. The Kihai WWRf and Wailuku-Kahului WWRf's on Maui operate with this process. The anoxic selector is typically sized to have a volume of approximately 10 to 30 percent of the total aeration basin volume. The process would not be as forgiving and resistant to shock loadings compared to the oxidation ditch and extended aeration processes due to the shorter SRT and lower MLSS concentration. But this option is available in a prefabricated package plants and would incur a smaller footprint than the oxidation ditch and extended aeration processes but would require operation and maintenance of blowers to provide air to the process. The fine bubble diffused aeration system would be more efficient than the mechanical aerators generally used in the oxidation ditch process. This process is retained for further evaluation.

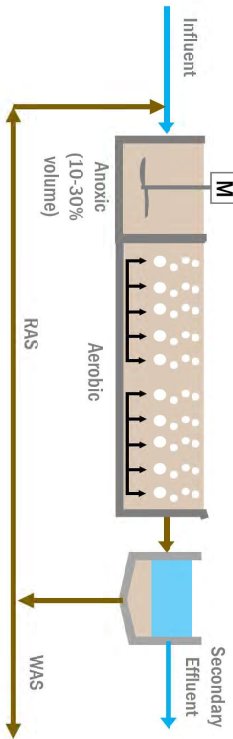


Figure 5-12. Activated Sludge with Anoxic Selector Process Schematic

**5.2.7 Recirculating Gravel Filter**

Recirculating gravel filter technology is an effective technology to treat septic tank effluent wastewater. After collection and conveyance, the wastewater is treated, in this case using a recirculating pea gravel filter (RGF). RGFs are a relatively simple, but effective means to treat wastewater from small communities. RGFs have been used to treat flow rates up to 1.0 mgd. RGFs typically produce a nitrified effluent that contains less than 10 mg/L of BOD5 and TSS (Ortes and Tohobanogous, 1998).

A schematic diagram of a RGF is shown in Figure 5-13. A septic tank is used to capture settleable and floatable solids. The septic tank effluent enters a recirculation tank. A dosing pump is used to apply wastewater in small doses to the top of the filter. The wastewater is treated as it percolates through the pea gravel media. A network of drainage piping collects the water at the bottom of the filter and returns it to the recirculation tank. A floating ball recirculation valve controls the return flow back to the recirculation tank or to the effluent disposal or reuse system. The dosing pump timer settings and recirculation tank volume are designed so that wastewater will typically flow through the filter for treatment an average of three to five times before being discharged. An example of a RGF system in use within a decentralized wastewater system can be found at the Stonehurst subdivision, located near Martinez, California (Ortes, et. al., 1997). Effluent from the RGF is typically chlorinated for disinfection prior to discharge.

For a community system with conventional sewers and Imhoff tank can be used in lieu of a septic tank. Imhoff tanks are designed to remove floatable and settleable solids, and also provides for some digestion of the removed materials.

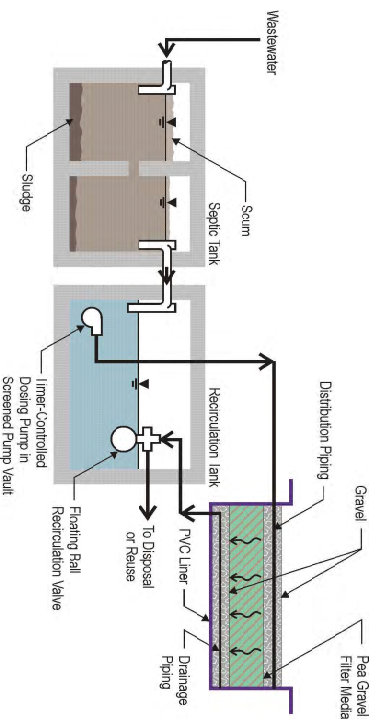


Figure 5-13. Recirculating Gravel Filter for Treatment of Septic Tank Effluent

**5.2.8 Secondary Treatment Technology Screening**

Table 5-5 provides a screening evaluation of the secondary treatment technologies described above. MBR, activated sludge with anoxic selector, and recirculating gravel filter are carried forward as project alternatives in Section 7.

Table 5-5. Screening of Secondary Treatment Options							
Criterion	MBR	SBR	Nereda	Oxidation Ditch	Extended Aeration	Activated Sludge with Anoxic Selector	Recirculating Gravel Filter
BOD <sub>5</sub> ≤ 30 mg/L	X	X	X	X	X	X	X
TSS ≤ 30 mg/L	X	X	X	X	X	X	X
Nitrification	X	X	X	X	X	X	X
TN < 10 mg/L	X	X	X	X		X	
Anoxic selector	X			X		X	
Appropriate for remote island location	X			X	X	X	X
Appropriate for tropical climate	X	X	X	X		X	X
Aeration tank size	Small	Moderate	Low	Large	Large	Moderate	Not applicable
Secondary clarifier size	None	None	None	Largest	Largest	Large	Not applicable
Energy requirement	Highest	Moderate	Moderate	Moderate	Higher	Moderate	Low
Operational complexity	High	High	Moderate	Moderate	Moderate	Moderate	Low
Available as packaged treatment system	X	X	X		X	X	
Fatal flaw		Proprietary control systems	Limited full scale installations in U.S.	Large footprint	Large footprint		
Carry forward in evaluations	X					X	X



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### 5.3 Maintenance Chlorination

The proposed effluent management system (subsurface drip irrigation disposal) does not require a disinfection process to protect human health and the environment because the treated effluent is dispersed below the ground surface. However, periodic maintenance chlorination of the subsurface drip system will be required to reduce biofilm fouling within the drip lines.

Calcium hypochlorite is the solid form of hypochlorite used for disinfection. It can be found as a powder, granules, pellets, or as tablets in concentrations up to 70 percent. Calcium hypochlorite will degrade in strength at a rate of 3 to 5 percent per year. Once applied to the wastewater, the chemistry is similar to that for sodium hypochlorite. Calcium hypochlorite decomposes in an exothermic reaction if exposed to moisture.

The solid can be directly applied to wastewater at very small WWTPs. Figure 5-14 shows a typical calcium hypochlorite feed system.

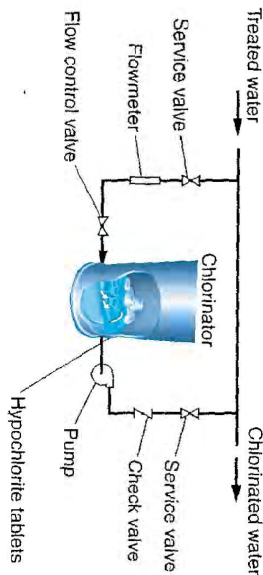


Figure 5-14. Typical Calcium Hypochlorite Feed System

The advantages of using calcium hypochlorite for disinfection at small, remote WWTPs is that it is available in concentrated form as powder, pellets, or tablets. This makes the transportation and storage of disinfectant optimal for small WWTPs.



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# Solids Management

This section evaluates solids management options for the Pahala WWTP.

## 6.1 Aerobic Digestion with Decant Thickening

Aerobic digestion consists of aerating sludge in a tank for an extended period of time. Volatile solids are oxidized in the process, stabilizing the sludge and reducing the total mass of solids that must be managed by recycling or disposal. Pathogen densities are also reduced. The process does not produce biogas. The aerobic digestion process requires substantial energy input in the form of aeration blowers, and therefore is not typically used at larger (i.e., greater than 10 mgd) WWRFs. Many small (less than 5 mgd) wastewater treatment plants in the United States use aerobic digestion to stabilize solids, due to its relatively low capital costs, simplicity, and compatibility with the certain liquid treatment processes.

Aerobic digestion with decant thickening is a two-stage process that can be achieved in the same basin. The first stage includes a period of aerobic digestion as described above. In the second stage the blowers are turned off for a period of time to allow sludge to settle and thicken. Supernatant is then decanted off the top. The blowers are turned back on to continue the aerobic digestion process. This process is repeated a few times until the sludge reaches approximately three percent solids. It is then pumped to the next process.

Aerobic digestion with decant thickening is recommended for the proposed Pahala WWTP due to its simplicity, low cost, and effectiveness for small WWRFs.

## 6.2 Anaerobic Digestion with Biogas Use

Anaerobic digesters are covered tanks equipped with mixing, heating, and biogas collection systems. Anaerobic bacteria in the digesters convert organic matter into methane, carbon dioxide, and water; pathogen densities are reduced, and a stabilized sludge is produced. Modern high-rate digesters are typically single-stage reactors. Mesophilic anaerobic digesters are typically operated at temperatures between 35 and 38° C. Mesophilic digestion systems produce a Class B biosolids product if the solids retention time (SRT) is greater than 15 days.

Two-stage mesophilic anaerobic digestion, where digesters are operated in series, improves process performance. The second-stage anaerobic digester generally has less SRT than the first stage. The advantages of this process configuration are slightly improved volatile solids reduction, a product with reduced pathogen content, and less product odor potential.

The anaerobic digestion process generates biogas that can be used for digester heating and generation of electricity.

The mesophilic anaerobic digestion process requires primary sludge to operate effectively. Therefore, primary clarifiers are required for an anaerobic digestion process. WWRFs that do not have primary clarifiers must use other digestion technologies.

Anaerobic digestion is cost effective for facilities larger than 5 to 10 mgd. Anaerobic digestion is not considered to be an appropriate technology for a facility the size of the Pahala WWTP.

## 6.3 Screw Press Dewatering

The screw press represents a relatively new technology for dewatering municipal wastewater solids, although the technology has been used successfully in industrial, pulp and paper production, chemical, and food processing applications.

Figure 6-1 is a diagram of a screw press. Thickened sludge, conditioned with polymer, is introduced to the machine in the head box at the inlet end. The mixture is conveyed along the length of the outlet end of the press by the rotating screw. As the material is conveyed along the length of the press it is squeezed between the tapered screw shell and the screen drums. The dewatered solids exit the press at the discharge end and fall down the discharge box. The adjustable pressure cone provides back pressure within the machine, particularly when the machine is initially filled. For municipal wastewater solids applications, the pressure cone is typically not needed after the machine is filled; the dewatered sludge provides sufficient back pressure. The liquid that was forced out through the screens is returned to the liquid treatment process.

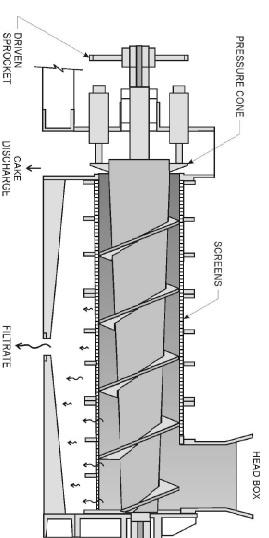


Figure 6-1. Screw Press Diagram

The screw press operates at a very slow rotational speed. The screw rotation is usually one-half of a revolution per minute or less for municipal wastewater solids. Water is slowly forced from the sludge by squeezing action – similar to a belt filter press – but for much longer periods of time. The solids retention time in a screw press can be on the order of two hours. The simplicity of screw presses makes them practical for small wastewater treatment plants, such as the Pahala WWTP.

## 6.4 Disposal

Dewatered solids, grit, and screenings would be trucked to the West Hawaii Landfill for disposal.

## Section 7

# Project Alternatives Evaluations

Project alternatives are developed and evaluated in this section.

### 7.1 Project Alternative Descriptions

Three Project Alternatives are developed below. All three include a new gravity collection system, WWTP, and subsurface drip effluent disposal system.

#### 7.1.1 Project Alternative 1: Activated Sludge with Anoxic Zone Package Plants

Project Alternative 1 is an activated sludge process with anoxic zone provided in the form of packaged treatment systems. A typical packaged treatment system of this nature would include:

- Flow equalization
- Anoxic treatment zone
- Aerobic treatment zone
- Secondary clarifier
- Aerobic digester with decant thickening.

Figure 7-1 is a sketch of Project Alternative 1. Wastewater would receive preliminary treatment in the headworks before flowing into the packaged treatment system. Two package treatment units would be provided, each with 50,000 gpd capacity. Effluent would flow into an irrigation equalization tank before being applied to the subsurface drip disposal system.

Digested solids would be dewatered using a screw press prior to disposal at the landfill.

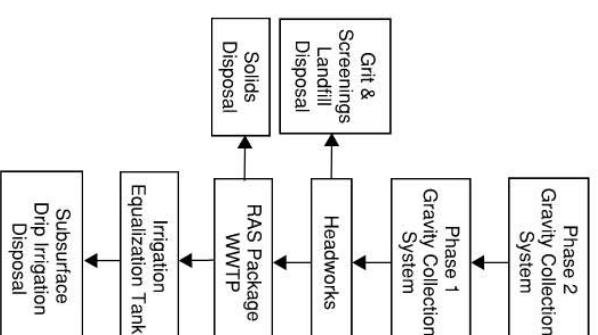


Figure 7-1. Project Alternative 1: Activated Sludge with Anoxic Zone Package Plants

#### 7.1.2 Project Alternative 2: MBR Package Plants

Project Alternative 2 is similar to Project Alternative 1 but includes two MBR package plants to provide treatment. Figure 7-2 provides an outline of Project Alternative 2. The MBR technology would create effluent that could be recycled on nearby macadamia nut orchards, if desired in the future. However, recycled water distribution costs are not included in the evaluations below to allow all alternatives to be considered on an equal basis.



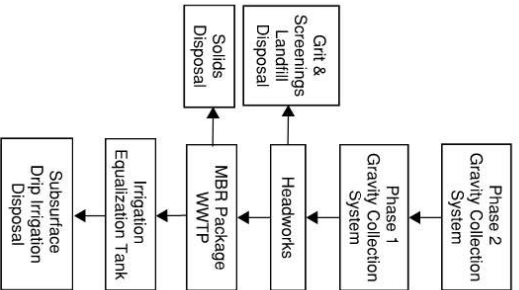


Figure 7-2. Project Alternative 2: MBR Package Plants

**7.1.3 Project Alternative 3: Imhoff Tank / Recirculating Gravel Filter**

Project Alternative 3 incorporates recirculating gravel filter treatment technology. Figure 7-3 provides a schematic of the project alternative. An Imhoff tank would be provided downstream of the headworks to remove grease and settleable solids prior to flowing into a recirculation tank. Recirculation pumps would distribute water from the recirculation tank over the surface of the pea gravel filter that provides secondary treatment. Water collected at the bottom of the filter would flow back to the recirculation tank. On average, water would flow through the filter five times before disposal in the subsurface drip irrigation system as previously described.

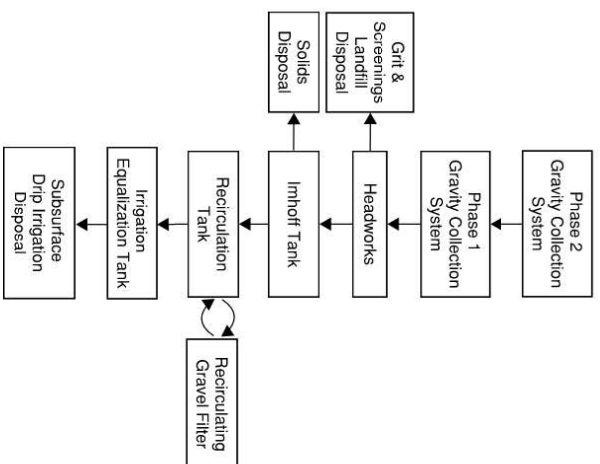


Figure 7-3. Project Alternative 3: Imhoff Tank/Recirculating Gravel Filter

**7.2 Cost Evaluations**

Capital, operations and maintenance (O&M), and life-cycle cost evaluations are presented in this section.

**7.2.1 Capital Costs**

Conceptual cost estimates were created for the three project alternatives. The cost estimates were developed using construction bids from similar projects, quantity take-offs, vendor quotes, and other sources. The costs were adjusted to account for economies of scale and construction inflation since the bid opening date. Where Hawaii costs were unavailable, U.S. mainland costs were used after adjustment to reflect Hawaii Island conditions.

In accordance with the Association for the Advancement of Cost Engineering International (AACI) criteria, these are Class 5 estimates. A Class 5 estimate is defined as a Conceptual Level or Project Viability Estimate. Typically, engineering is from 0 to 2 percent complete. Class 5 estimates are used to prepare planning level cost scopes or evaluation of alternative schemes, long range capital outlay planning.

Expected accuracy for Class 5 estimates typically ranges from -50 to +100 percent, depending on the technological complexity of the project, appropriate reference information and the inclusion of an appropriate contingency determination. In unusual circumstances, ranges could exceed those shown.

Table 7-1 provides a summary of capital cost assumptions used.

Description	Value
Estimate date	February 2023
Engineering News Record 20-Cities Average Construction Cost Index	13,175
Electrical and instrumentation markup	25 percent
Estimating contingency for unknowns	20 percent

Table 7-2 provides a summary of the capital cost estimates, in current (February 2023) dollars. Detailed estimates can be found in Appendix A, Engineering costs were not included in the estimates.

Description	Alternative 1: Activated Sludge Package Plants	Alternative 2: MBR Package Plants	Alternative 3: Imhoff Tank/RGF
Collection system	\$21.0 million	\$21.0 million	\$21.0 million
Influent sewer	\$1.0 million	\$1.0 million	\$1.0 million
WWTP	\$13.9 million	\$13.9 million	\$14.8 million
Effluent disposal	\$1.4 million	\$1.4 million	\$1.4 million
<b>Totals</b>	<b>\$37.3 million</b>	<b>\$37.3 million</b>	<b>\$38.2 million</b>
ACE Class 5 estimate range	\$18.7 – \$74.6 million	\$18.7 – \$74.6 million	\$19.1 – \$76.4 million

As shown in the table, all three project alternatives have similar capital costs, and can be considered equal at this level of analysis.

**7.2.2 Operation and Maintenance Costs**

O&M costs estimates were developed for the three alternatives. The O&M cost estimates include collection system maintenance, plus estimates of labor, electricity consumption, chemicals, maintenance materials and solids disposal for the WWTP. O&M assumptions are listed in Table 7-3. The O&M estimates are based on the WWTP average dry weather flow capacity.

Description	Value
Average dry weather flow	95,000 gpd
Labor cost, loaded	\$100,000/year/full time equivalent
Electricity cost	\$0.45/kWh
Landfill tip fee	\$100/wet ton
Maintenance materials	2 percent of equipment capital cost/year

The O&M estimates for the three project alternatives are summarized in Table 7-4. Detail can be found in Appendix A. As shown in the table, Project Alternative 3: Imhoff Tank/Recirculating Gravel Filter incurs the lowest O&M cost, while Project Alternative 2: MBR Package Plants incurs the highest.

Description	Annual Cost		
	Project Alternative 1: Activated Sludge Package Plants	Project Alternative 2: MBR Package Plants	Project Alternative 3: Imhoff Tank/RGF
Collection system	\$40,000	\$40,000	\$40,000
Labor	\$200,000	\$200,000	\$200,000
Electricity	\$240,000	\$270,000	\$90,000
Chemicals	\$20,000	\$25,000	\$20,000
Maintenance materials	\$96,000	\$96,000	\$46,000
Solids disposal	\$51,000	\$51,000	\$51,000
<b>Totals</b>	<b>\$647,000</b>	<b>\$682,000</b>	<b>\$447,000</b>

**7.2.3 Life-Cycle Costs**

An economic evaluation was prepared to assess the potential life-cycle costs associated with each project alternative. The economic evaluation consists of a net present value comparison. The net present value analysis includes capital, O&M, and equipment replacement costs. An appropriate inflationary factor and discount rate are applied to obtain the net present value over a 30-year planning period. The analysis assumes the capital costs are incurred in year 1, followed by 29 years of O&M. The net present value of an alternative represents the amount of money that would need to be set aside today (at a given interest rate) to pay the costs associated with the alternative over the entire planning period. The alternative with the lowest net present value is considered the most attractive from an economic perspective. The evaluation results are included in Appendix A.

Table 7-5 summarizes the life-cycle cost evaluation assumptions.

Table 7-5. Life-Cycle Economic Assumptions	
Description	Value
Year of analysis	2023
Planning period	30 years
Inflation rate	3.5 percent
Discount rate	5.0 percent
Equipment replacement cycle	20 years
Membrane replacement cycle	15 years

Table 7-6 summarizes the results of the life-cycle cost analysis.

Table 7-6. Life-Cycle Cost Analysis Summary			
Description	Project Alternative 1: Activated Sludge Package Plants	Project Alternative 2: MBR Package Plants	Project Alternative 3: Imhoff Tank/ RGF
Capital cost	\$37.3 million	\$37.3 million	\$38.2 million
Annual O&M cost	\$647,000	\$682,000	\$447,000
Equipment replacement cost (excluding membranes)	\$4.8 million	\$4.8 million	\$2.3 million
Membrane replacement cost	N/A	\$59,000	N/A
Life-cycle cost	\$56.1 million	\$57.0 million	\$50.4 million
Comparison to lowest cost alternative	+11%	+13%	0%

Figure 7-4 shows the results in graphical form. As shown in the table and graph, the three project alternatives have similar capital costs. Alternative 3: Imhoff Tank/Reirculating Gravel Filter incurs the lowest life-cycle costs, largely due to lower O&M costs associated with the technology. Project Alternatives 1 and 2 incur similar life-cycle costs. At this level of analysis all three project alternatives can be considered to have similar lifecycle costs.

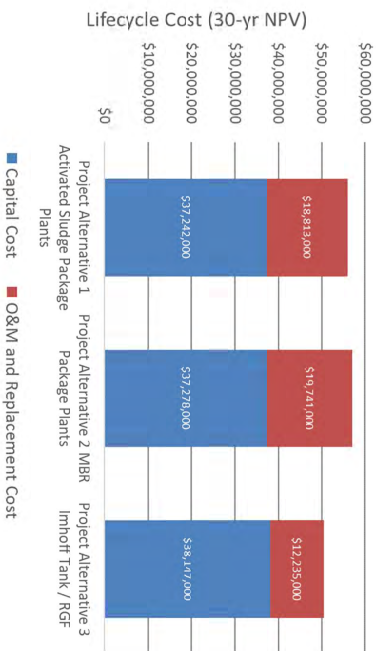


Figure 7-4. Life-Cycle Cost Evaluation Results

### 7.3 Non-Economic Evaluation

A non-economic evaluation was conducted to provide a qualitative comparison between the three alternatives.

#### 7.3.1 Approach

Non-economic evaluations are generally subjective by necessity. Quantifiable measurements are used when available, but lack of information or difficulty and expense of obtaining information requires subjective assessments.

The project alternatives were scored in relation to one another and according to an evaluation matrix, described below. Each alternative was scored from 1 to 5 (1 = high/desirable, 1 = low/less desirable) for each evaluation criteria. The alternatives were not ranked in the scoring; alternatives could receive the same scores for any given criteria.

The evaluation criteria were weighted to reflect their overall significance for the project. The scores were multiplied by the criteria weights to develop a non-economic score for each alternative.

### 7.4 Non-Economic Evaluation Criteria

Table 7-7 shows the non-economic criteria chosen for comparing the three alternatives.

Table 7-7. Non-Economic Comparison Criteria		
Category	Description	
Level of Service Measures	Effluent quality	The quality of the effluent produced with respect to BOD <sub>5</sub> , TSS, nutrients, and turbidity.
	Potential for capacity expansion	Ability of the system to be expanded should additional capacity be required.
	Water recycling feasibility	The relative extent of modifications that would be needed to create R-1 recycled water to support a future water recycling program.
	Public perception / community concerns	The community's impression of the project and the perceived support.
Regulatory	Monitoring complexity	The relative difficulty of monitoring tasks required for the option chosen.
	Treatment adjustment potential	The ability to increase treatment to comply with future permit requirements and/or growth.
	Safety regulations complexity	The relative difficulty to comply with safety regulations including staff training, reporting, maintenance procedures.
	Environmental concerns	The extent of the project's potential environmental impacts should failures occur.
O&M Factors	Footprint	The physical space that the processes will occupy (including land acquisition, subdivision, and permitting).
	Safe work environment	Last time accidents and the relative health and safety risk operation of given option will have on the employees; includes equipment access, chemical hazards, confined spaces, dust, etc.; the extent of measures required to ensure the health and safety of the employees.
	Maintenance complexity	The relative intensity of equipment maintenance requirements.
	Operations complexity	The relative intensity of the operations requirements.
Island Factors	Mainland delivery dependence	The relative dependence on regular deliveries of equipment, supplies, or spare parts from mainland sources.
	Mainland servicing dependence	The relative degree to which technology will require special servicing by mainland-based personnel.
	Power dependence	The relative degree to which the treatment processes depend on electrical power for operation.
	Chemical dependence	The relative dependence on chemical supplies, whether locally available or restricted by mainland delivery schedules and requirements.

The categories and criteria were developed using best engineering judgment and our understanding of the project, and the County of Hawaii Department of Environmental Management goals and concerns.

The weighting factors are listed in Table 7-8.

Table 7-8. Non-Economic Comparison Criteria	
Category	Criteria
Level of Service Measures (25%)	Effluent quality (30%)
	Potential for capacity expansion (20%)
	Water recycling feasibility (30%)
	Public perception / community concerns (20%)
<i>Category Total (100%)</i>	
Regulatory (25%)	Monitoring complexity (25%)
	Treatment adjustment potential (25%)
	Safety regulations complexity (25%)
	Environmental concerns (25%)
<i>Category Total (100%)</i>	
Owner Factors (25%)	Footprint (30%)
	Safe work environment (25%)
	Maintenance complexity (25%)
	Operations complexity (20%)
<i>Category Total (100%)</i>	
Island Factors (25%)	Mainland delivery dependence (25%)
	Mainland servicing dependence (25%)
	Power dependence (25%)
	Chemical dependence (25%)
<i>Category Total (100%)</i>	
<b><i>Overall Total 100%</i></b>	

### 7.5 Non-Economic Evaluation Results

A score of 1 through 5 was given for each criterion, with 5 being the most favorable, and 1 representing the least desired option. The complete non-economic evaluation is included as Appendix C. The non-economic evaluation results are summarized in Table 7-9.

Alternative	Score	Rank
Project Alternative 1: Activated Sludge Package Plants	3.80	2
Project Alternative 2: MBR Package Plants	3.96	1
Project Alternative 3: Imhoff Tank / Recirculating Gravel Filter	3.53	3

As shown in the table, Project Alternative 2: MBR Package Plants received the highest non-economic score. The higher score reflects the County's desire to standardize on MBR technology to provide the highest level of treatment at WWTP facilities and to facilitate future water recycling programs.

### 7.6 Conclusions and Recommendation

Figure 7-5 combines the economic and non-economic results into a single graph. As previously stated, the economic cost of the three project alternatives can be considered equivalent at this level of analysis. Project Alternative 2: MBR Package Plants has the highest non-economic score and is recommended for implementation if the County proceeds with a centralized sewer system and WWTP for the community.

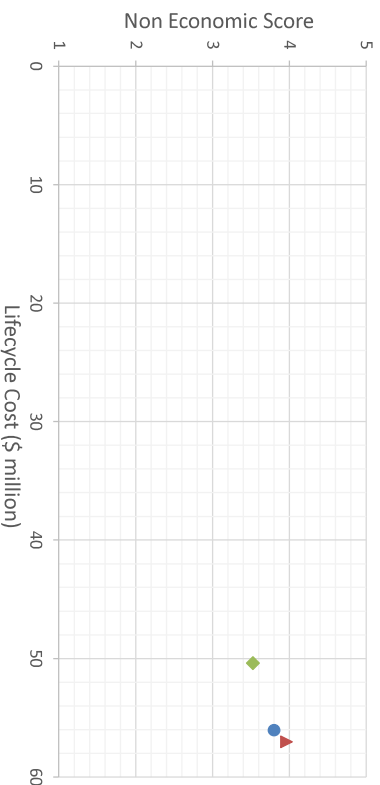


Figure 7-5. Combined Economic and Non-Economic Results

## Section 8 Preliminary Design of Improvements

A preliminary design of the recommended project is discussed in this section.

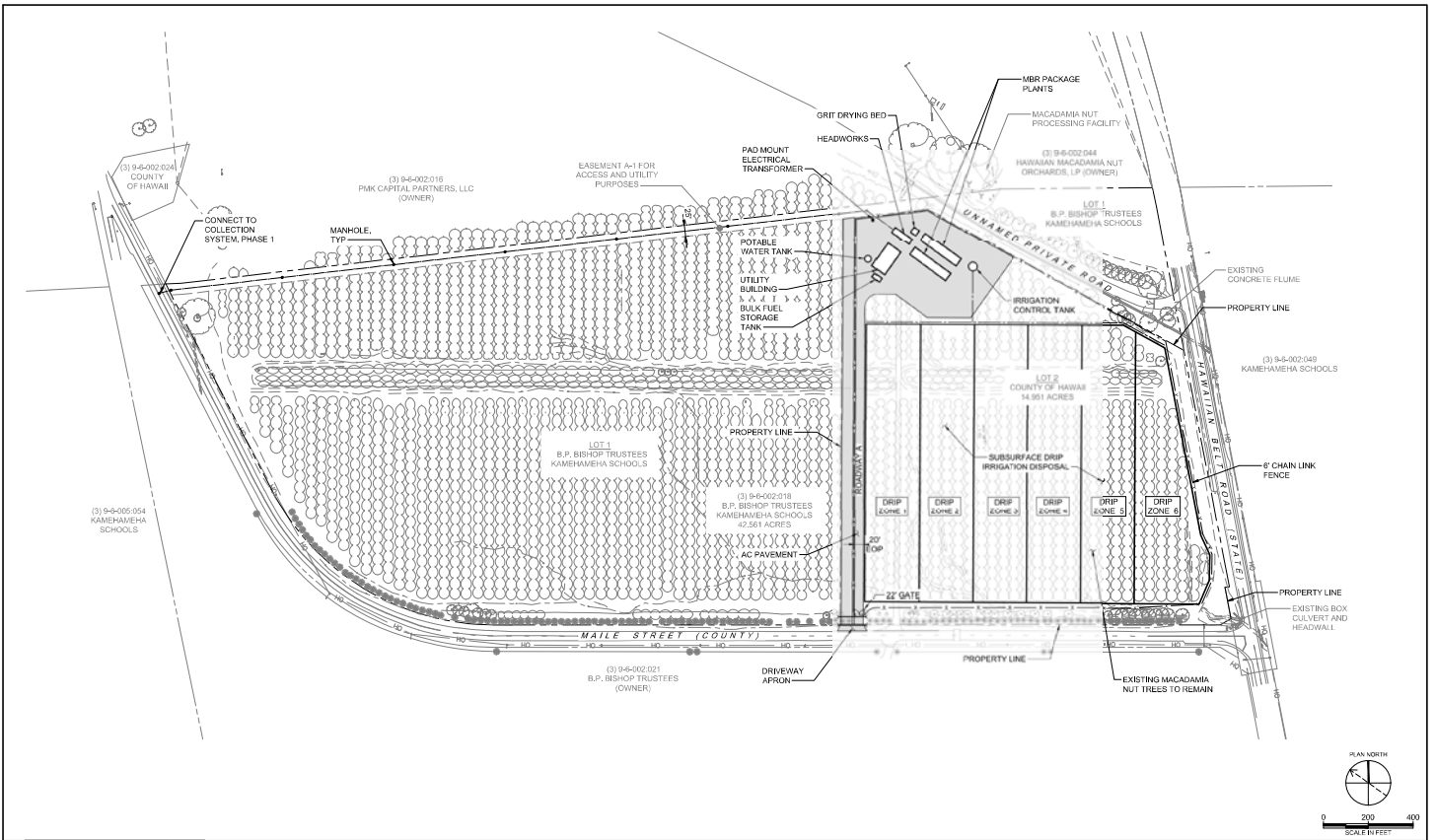
### 8.1 Site Plan

Figure 8-1 is a preliminary site plan of the WWTP project.

### 8.2 Process Schematic

Figure 8-2 is a preliminary process schematic of the proposed WWTP.

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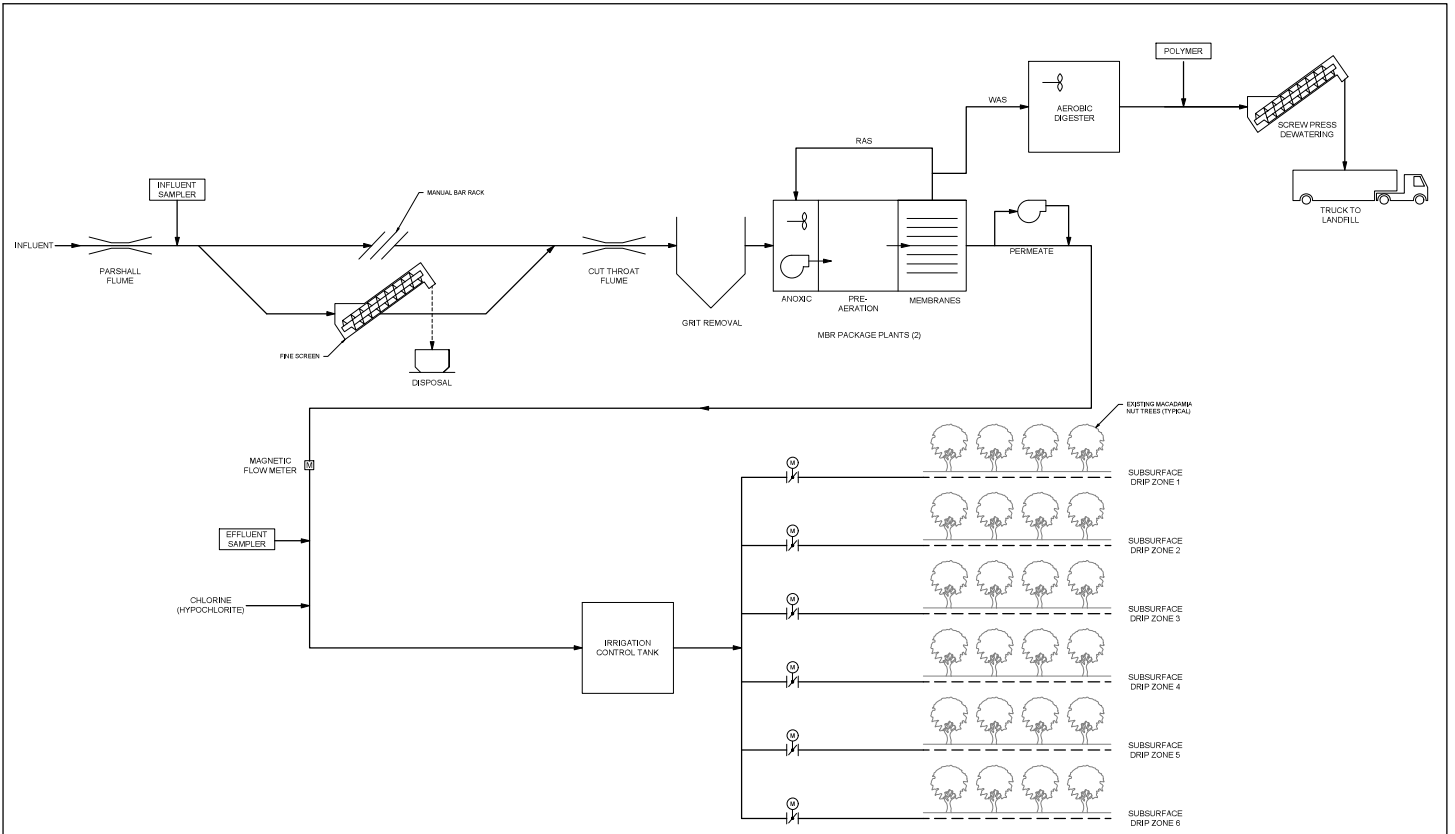


SCALE: 1" = 200'  
JOB NO: 152964

PAHALA WASTEWATER TREATMENT PLANT  
OVERALL SITE PLAN

FIGURE  
8-1

Path: C:\bcps\w\03083617 File Name: 152964-FIG\_8-2 Plot Date: February 15, 2023 2:28 PM Client User: Richard Sellona



SCALE: NONE  
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PAHALA WASTEWATER TREATMENT PLANT  
PROCESS SCHEMATIC

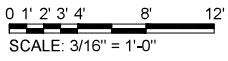
FIGURE  
8-2

### 8.3 Preliminary Design Criteria

Table 8-1 lists preliminary design criteria for the proposed WWTP.

Description	Value
Influent flow	
Average dry weather	95,000 gpd
Peak day wet weather	312,000 gpd
Peak hour wet weather	221 gpm
Influent characteristics	
BOD <sub>5</sub>	300 mg/L
TSS	300 mg/L
NI	40 mg/L
Odor control - granular activated carbon	
Airflow rate	6 air changes per hour
H <sub>2</sub> S Inlet concentration	1-10 ppm
H <sub>2</sub> S removal efficiency	99%
Media type	High-capacity carbon
Mechanical screens	
Number of units	1
Screen opening size	In-channel cylindrical 0.125 inch (3 mm)
Maximum flow rate capacity	Greater than 221 gpm
Screening washing	Integral
Screening compaction	Integral
Bypass screen	
Type	Manually-cleaned bar rack
Bar spacing	1 inch
Rake	Fabricated to interlock with bars
Screenings receptacle	
Type	55-gallon drum or bags
Screenings volume per million gallons treated	5 ft <sup>3</sup> /Mgal
Estimated screenings quantity	0.5 ft <sup>3</sup> /day
Disposal frequency	1/week
Influent flow metering	
Type	Parshall Tube
Maximum flow capacity	Greater than 221 gpm

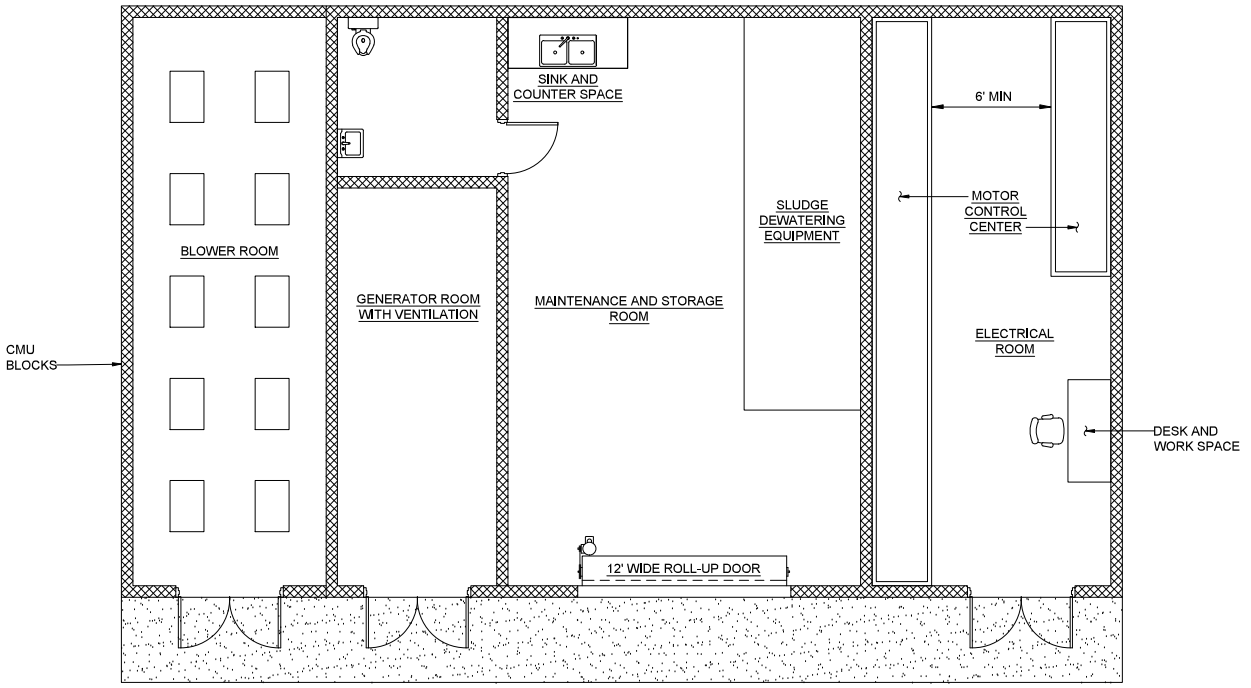
Minimum straight upstream channel section	20 times the throat width
Influent flow sampling	Refrigerated automatic composite sampler
Grit chamber	
Number of units	1
Type	Aerated grit trap
Volume	2,805 gallons
Air supply	75 ft <sup>3</sup> /minute
Removal	Vector truck
Estimated average grit quantity	1.8 ft <sup>3</sup> /day
MBR package plant	
Number of packaged treatment trains	2
Flow basis for biological design	50,000 gpd each
Anoxic tank working volume (excluding membranes)	2,000 gallons each
Aerobic working volume	7,000 gallons each
Design SRT	5 days
Waste sludge removal	1,500 gpd each
Design MLSS concentration in bioreactor	≤ 8,000 mg/L
Number of duty membrane blowers	1 per train
Number of duty process aeration blowers	1 per train
Aeration system type	Coarse bubble diffused aeration
Mixed liquor recirculation rate	4 x ADVF
Membrane cleaning dosing systems	Sodium Hypochlorite, Citric Acid, & Coagulant
Sludge management system	
Number of units	1
Type	Incline screw press
Screw press capacity	45 gpm
Polymer dose	20 lbs/ dry ton
Annual polymer use	475 lbs
Average amount of dewatered sludge	0.54 wet tons/day
Disposal frequency	1/week
Maintenance Disinfection system	
Type	Chlorine
Form	Calcium hypochlorite tablets
Design chlorine dose	8 mg/L
Irrigation equalization (control) tank	
Number of units	1



SCALE: 3/16" = 1'-0"  
 JOB NO: 152964

PAHALA WASTEWATER TREATMENT PLANT  
 OPERATIONS BUILDING PRELIMINARY FLOOR PLAN

FIGURE  
 8-3



## Section 9 Implementation Plan

An implementation plan for the recommended WWTP project is presented in this section.

### 9.1 Implementation Approach

The WWTP and collection system projects could be implemented using either a traditional design/build (DBB) approach or a design/build (DB) approach, as discussed below.

#### 9.1.1 Design Bid Build (DBB) Approach

DBB is the traditional approach used by the County for implementing public works projects. The design is prepared by a consultant, and then bids are solicited from construction contractors. The County awards the contract to the lowest responsible bidder.

Advantages of the DBB approach are that the County retains maximum control over the design process, ensuring the project will meet its needs.

#### 9.1.2 Design Build (DB) Approach

DB is an alternative delivery approach whereby the County would contract with an entity to both design and construct a facility that meets established project specifications. The combined WWTP and collection system projects are large enough monetarily for the County to consider a DB approach. The County would need to use a procurement process based on qualifications and cost to select the DB entity. The typical DB procurement process takes 9 - 12 months to complete. The DB bidders will need the County to complete the following prior to the DB procurement process:

- Complete geotechnical report.
- Environmental assessment.
- Land use entitlements.
- WWTP land purchase.

Advantages of DB implementation are:

- Possibility of reduced overall costs.
- Design and construction can occur simultaneously, potentially reducing implementation time.
- DB entity assumes the performance liability for the project, as defined in the project specifications.

Disadvantages of the DB approach are that the County has limited experience with it, and the County would not have as much control over how the project is designed.

### 9.2 Implementation Schedules

Planning level implementation schedules were developed for both approaches.

#### 9.2.1 Recent Change in State of Hawaii Land Use Commission Policy

The State of Hawaii Land Use Commission (LUC) recently changed its policy regarding the use of Special Permits for non-conforming uses. The proposed WWTP site is located in the Agricultural





District as defined by the LLC. A WWTP is not an allowable land use in the Agricultural District. In the past the LLC has allowed Special Permits to be used for non-conforming uses. However, the LLC has recently changed its policy and now recommends that project proponents for permanent facilities (like a WWTP) pursue a District Boundary Amendment (DBA) from the LLC. The LLC's rationale is that permanent entitlement (i.e., a DBA) is more appropriate for a permanent facility like a WWTP, rather than a temporary entitlement like a Special Permit. Since the WWTP parcel is less than 15 acres the DBA can be processed by the County of Hawaii. However, the action will likely take longer to implement than a Special Permit.

**9.2.2 Equipment Procurement Time to Impact Construction Schedule**

The COVID-19 pandemic continues to impact the construction industry due to increased time to deliver equipment and other materials. Most significantly, the time for the MBR package plant supplier to manufacture their equipment was quoted at 48 weeks instead of a typical pre-pandemic time of approximately 26 weeks. Similar delays are being experienced on other construction projects in Hawaii, and it is reasonable to assume that other equipment suppliers will quote extended supply times. As a result, we now suggest that a construction schedule of two years is a reasonable expectation.

**9.2.3 Implementation Schedules**

Figure 9-1 presents implementation schedules for both approaches. At this time, both approaches may not enable the County to meet the AOC milestone schedule to close the LCCs. The DB approach offers greater potential to meet the milestone, because equipment procurement can possibly occur in parallel with design within a DB contract.

**9.3 Recommendation**

Given the equipment procurement time impact to construction schedule, and the recent change in LLC policy towards the use of Special Permits for permanent facilities, it is unlikely that the County will be able to meet the Revised AOC deadline to close the LCCs. Using a DB approach to implement the project may offer better opportunity to meet the deadline, because a DB entity could initiate equipment procurement while design activities progress.

Part B of this report evaluates using Individual Wastewater Systems to comply with the Revised AOC.

	2023		2024				2025				2026				2027			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>AOC Milestones</b>																		
<b>PAHALA SCHEDULE: DB WWTP &amp; Disposal, Phase 1&amp;2 Collection</b>																		
DBA and Subdivision Process																		
HRS 343																		
DOHA (Section 7, 106, OEQC, Public Comment)																		
DB: WWTP and Disposal, Phase 1&2 Collection System, LCC Closure																		
<b>PAHALA SCHEDULE: DBB WWTP &amp; Disposal + DBB Phase 1 Collection + DBB Phase 2 Collection</b>																		
DBA and Subdivision Process																		
HRS 343																		
DOH (Section 7, 106, OEQC, Public Comment)																		
DBB: Mechanical WWTP and Disposal, LCC Closure																		
DBB: Phase 2 Collection System																		
DBB: Phase 1 Collection System																		

Revised AOC: Close LCCs

## Section 10

# References

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- M&E Pacific, Inc. Kau Sewer System Evaluation, Kau, Island of Hawaii, Hawaii, December 2004.
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## Appendix A: Cost Estimates

**County of Hawaii DEM  
Pahala Revised AOC PER  
Alternatives Net Present Value Analysis**

Agency:	County of Hawaii DEM	Sensitivity Adjustments (%)			Results		
		Risk Premium	Benefits	Capital Costs	Other Costs	Capital Cost	30-year NPV
Project/Problem:	Pahala Revised AOC PER						
Alternative 1	Package plant all new sewers					\$37,278,000	(\$57,018,355)
Alternative 2	Package plant use old sewers					\$23,598,000	(\$45,221,554)
Alternative 3	IWS management model 2A					\$17,400,000	(\$26,445,670)
Alternative 4	IWS management model 2B					\$17,400,000	(\$26,810,306)
Alternative 5	IWS management model 3A					\$17,400,000	(\$26,605,508)
Alternative 6	IWS management model 3B					\$17,400,000	(\$28,694,426)
Alternative 7							
Alternative 8							
Alternative 9							
Alternative 10							
Alternative 11							
Alternative 12							

Year of analysis: 2023  
 Escalation rate: 3.50%  
 Discount rate: 5.00%

Select one  
 All entries in dollars  
 All entries in thousands of dollars

Note: "Status quo" refers to Alternative 1

**Make entries in yellow cells only**

**County of Hawaii  
Pahala WWTP Design-Post Design  
Alternatives Net Present Value Analysis**

Agency:	County of Hawaii	Sensitivity Adjustments (%)			Results		
		Risk Premium	Benefits	Capital Costs	Other Costs	Capital Cost	30-year NPV
Project/Problem:	Pahala WWTP Design-Post Design						
Alternative 1	RAS Package Plants / Subsurface Drip					\$37,242,000	(\$56,054,039)
Alternative 2	MBR Package Plants / Subsurface Drip					\$37,278,000	(\$57,018,355)
Alternative 3	Imhoff Tank / RGF / Subsurface Drip					\$38,147,000	(\$50,381,465)
Alternative 4							
Alternative 5							

Year of analysis: 2023  
 Escalation rate: 3.50%  
 Discount rate: 5.00%

Select one  
 All entries in dollars  
 All entries in thousands of dollars

Note: "Status quo" refers to Alternative 1

**Make entries in yellow cells only**

**County of Hawaii  
Pahala WWTP Design-Post Design  
Alternatives Net Present Value Analysis**

Agency:	County of Hawaii	Sensitivity Adjustments (%)			Results			
Project/Problem:	Pahala Collection System	Risk Premium	Benefits	Capital Costs	Other Costs	Capital Cost	30-year NPV	
Alternative 1	New Gravity Collection System					\$21,010,000	(\$21,951,599)	
Alternative 2	STEP Collection System					\$18,608,000	(\$22,210,229)	
Alternative 3	Reuse Existing Collection System					\$7,330,000	(\$10,154,798)	
Alternative 4								
Alternative 5								
Year of analysis:	2023	Select one					Note: "Status quo" refers to Alternative 1	
Escalation rate:	3.50%	<input checked="" type="radio"/> All entries in dollars <input type="radio"/> All entries in thousands of dollars						
Discount rate:	5.00%							
<b>Make entries in yellow cells only</b>								

<b>Alternative #1 - RAS Package Plants / Subsurface Drip</b>	
ANNUAL O&M COSTS	
Electricity	\$240,000
Labor	\$200,000
Chemicals	\$20,000
Solids disposal	\$51,000
Maintenance materials	\$96,000
Gravity mainline maintenance	\$40,000
<b>Total Annual Operating Costs</b>	<b>\$647,000</b>
EQUIPMENT REPLACEMENT COST (20 YEAR)	\$4,776,000
<b>Collection System TOTAL</b>	<b>\$21,010,000</b>
<b>WWTP TOTAL</b>	<b>\$16,232,000</b>
<b>ALTERNATIVE #1 CAPITAL COST TOTAL</b>	<b>\$37,242,000</b>
<b>Alternative #2 - MBR Package Plants / Reuse / Subsurface Drip</b>	
ANNUAL O&M COSTS	
Electricity	\$270,000
Labor	\$200,000
Chemicals	\$25,000
Solids disposal	\$51,000
Maintenance materials	\$96,000
Gravity mainline maintenance	\$40,000
<b>Total Annual Operating Costs</b>	<b>\$682,000</b>
MEMBRANE REPLACEMENT COST (15 YEAR)	\$59,000
EQUIPMENT REPLACEMENT COST (20 YEAR)	\$4,800,000
<b>Collection System TOTAL</b>	<b>\$21,010,000</b>
<b>WWTP TOTAL</b>	<b>\$16,268,000</b>
<b>ALTERNATIVE #2 CAPITAL COST TOTAL</b>	<b>\$37,278,000</b>
<b>Alternative #3 - Inhoff Tank / RGF / Subsurface Drip</b>	
ANNUAL O&M COSTS	
Electricity	\$90,000
Labor	\$200,000
Chemicals	\$20,000
Solids disposal	\$51,000
Maintenance materials	\$46,000
Gravity mainline maintenance	\$40,000
<b>Total Annual Operating Costs</b>	<b>\$447,000</b>
EQUIPMENT REPLACEMENT COST (20 YEAR)	\$2,283,000
<b>Collection System TOTAL</b>	<b>\$21,010,000</b>
<b>WWTP TOTAL</b>	<b>\$17,137,000</b>
<b>ALTERNATIVE #3 CAPITAL COST TOTAL</b>	<b>\$38,147,000</b>

**Pahala WWTP Unit Cost Estimates**

Electrical & Instrumentation	25.0%	
Contingency	20.0%	
ENR CCI	13175.03	January, 2023

Pahala WWTP Capital Unit Costs	Units	Unit Cost
Environmental protection, BMPs	ac	\$11,000
Site clearing	ac	\$20,000
Site roads, guard rails, pavement	ac	\$92,000
Perimeter fence	LF	\$150
Site grading	ac	\$30,000
Site drainage improvements	ac	\$18,000
Plant water catchment/collection system	LS	\$75,000
Process yard piping	LS	\$250,000
Headworks (includes site/civil, structures, equipment & piping)	LS	\$1,011,000
Chlorine disinfection	LS	\$150,000
RAS package plants	LS	\$3,491,000
MBR package plants	LS	\$3,515,000
Irrigation equalization tank	gal	\$10
Subsurface drip irrigation line	LF	\$10
Irrigation piping & valves	LF	\$250
Imhoff tank	LS	\$1,063,000
Recirculation tank	LS	\$890,000
Recirculating gravel filter	LS	\$2,541,000
Plant drainage system	ac	\$40,000
Main generator (including process piping)	LS	\$494,000
Maintenance/operations/electrical building	SF	\$1,000
Influent sewer (16 inch) main along easement from Maile St	LF	\$480
Phase 1 existing gravity collection system improve (Fukunaga)	LS	\$4,880,000
Phase 2 new gravity collection system (Fukunaga)	LF	\$16,130,000
Reuse existing gravity collection system	LS	\$2,450,000
Sludge dewatering system	LS	\$860,000

1 of 2

Pahala WWTP Operation, Maintenance, & Replacement Unit Costs	Unit Cost	Units
Equipment replacement cost	25%	of process capital cost
Package plant replacement cost	100%	of package plant capital cost
Maintenance materials	2%	of equipment capital cost
Gravity collection system maintenance cost	\$16,000.00	per mi
Membrane replacement cost	\$1,950.00	per module + SH & install
Solids disposal dumpster rental fee	\$300.00	per week
Sanitary landfill tipping fee	\$116.00	per wet ton
Hypochlorite tablet cost	\$8.00	per lb
Dewatering polymer cost	\$3.00	per lb
Diesel price	\$6.22	per gallon

2 of 2

**Pahala WWTP Lump Sum Cost Estimates**

<b>Imhoff Tank</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Number of Units</b>	<b>Cost</b>
Excavation	CY	\$150	400	\$60,000
Bedding & backfill	CY	\$100	25	\$2,600
Concrete	CY	\$1,500	130	\$195,700
Piping & valves	LS	\$50,000	1	\$50,000
Cover plates	SF	\$200	70	\$14,000
Odor control	LS	\$500,000	1	\$500,000
Epoxy Coating	SF	\$80	3,000	\$240,000
			<b>TOTAL</b>	<b>\$1,063,000</b>

<b>Recirculating Gravel Filter</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Number of Units</b>	<b>Cost</b>
RGF bed excavation	CY	\$150	6,000	\$900,000
Bed liner	SF	\$8	40,000	\$320,000
16 in PVC manifold pipe	LF	\$160	300	\$48,000
3 in PVC lateral pipe	LF	\$30	7,100	\$213,000
4 in PVC drainage & recirculation pipe	LF	\$40	2,000	\$80,000
Gravel media	CY	\$150	6,000	\$900,000
6 in sand media under liner	CY	\$100	800	\$80,000
			<b>TOTAL</b>	<b>\$2,541,000</b>

<b>Recirculation Tank</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Number of Units</b>	<b>Cost</b>
Recirculation tank excavation	CY	\$150	1,000	\$150,000
Bedding & backfill	CY	\$100	200	\$20,000
Concrete	CY	\$1,500	200	\$300,000
Handrail	LF	\$100	200	\$20,000
Pumps & valves	ea	\$100,000	4	\$400,000
			<b>TOTAL</b>	<b>\$890,000</b>

1 of 2

<b>Sludge Dewatering System</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Number of Units</b>	<b>Cost</b>
300 HP diesel dump truck	LS	\$300,000	1	\$300,000
Dewatering screw press	LS	\$300,000	1	\$300,000
Incline screw conveyor	LS	\$80,000	1	\$80,000
Polymer system	LS	\$80,000	1	\$80,000
Sludge feed pump & piping	LS	\$100,000	1	\$100,000
			<b>TOTAL</b>	<b>\$860,000</b>

<b>Reuse Existing Gravity Collection System</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Number of Units</b>	<b>Cost</b>
Inspection & cleaning	LS	\$750,000	1	\$750,000
Repair defects	LS	\$1,500,000	1	\$1,500,000
Archaeological monitoring	LS	\$50,000	1	\$50,000
BMPs	LS	\$50,000	1	\$50,000
Traffic control measures	LS	\$50,000	1	\$50,000
Pre- & post-construction inspections & documentation	LS	\$50,000	1	\$50,000
			<b>TOTAL</b>	<b>\$2,450,000</b>

2 of 2

Pahala WWTP  
Preliminary Engineering Report  
Cost Estimate

**Alternative #1 - RAS Package Plants / Subsurface Drip**

**Capital Cost Estimate**

Pahala WWTP Capital Cost Item Description	Units	General Unit Cost	Number of Units	COST
<b>Influent Sewer</b>				
16 inch sewer main along easement from Maile St	LF	\$480	1,700	\$816,000
			<b>Subtotal</b>	\$816,000
			<b>Contingency @ 20%</b>	\$164,000
			<b>Influent Sewer Total</b>	<b>\$980,000</b>
<b>Wastewater Treatment</b>				
Environmental protection, BMPs	ac	\$11,000	1.5	\$16,500
Site clearing	ac	\$20,000	1.5	\$30,000
Site roads, guard rails, pavement	ac	\$92,000	1.5	\$138,000
Perimeter fence	LF	\$150	3,000	\$450,000
Site grading	ac	\$30,000	1.5	\$45,000
Site drainage improvements	ac	\$18,000	1.5	\$27,000
Plant water catchment/collection system	LS	\$75,000	1	\$75,000
Process yard piping	LS	\$250,000	1	\$250,000
Headworks (includes site/civil, structures, equipment & piping)	LS	\$1,011,000	1	\$1,011,000
Chlorine disinfection	LS	\$150,000	1	\$150,000
RAS package plants	LS	\$3,491,000	1	\$3,491,000
Plant drainage system	ac	\$40,000	1.5	\$60,000
Main generator (including process piping)	LS	\$494,000	1	\$494,000
Maintenance/operations/electrical building	SF	\$1,000	2,150	\$2,150,000
Sludge dewatering system	LS	\$860,000	1	\$860,000
			<b>Subtotal</b>	\$9,247,500
			<b>Electrical &amp; Instrumentation @ 25%</b>	\$2,312,000
			<b>Subtotal</b>	\$11,560,000
			<b>Contingency @ 20%</b>	\$2,312,000
			<b>Wastewater Treatment Total</b>	<b>\$13,872,000</b>
<b>Effluent Disposal</b>				
Irrigation equalization tank	gal	\$10	20,000	\$200,000
Subsurface drip irrigation line	LF	\$10	52,000	\$520,000
Irrigation piping & valves	LF	\$250	800	\$200,000
			<b>Subtotal</b>	\$920,000
			<b>Electrical &amp; Instrumentation @ 25%</b>	\$230,000
			<b>Subtotal</b>	\$1,150,000
			<b>Contingency @ 20%</b>	\$230,000
			<b>Effluent Disposal Total</b>	<b>\$1,380,000</b>
			<b>Alternative #1 TOTAL</b>	<b>\$16,232,000</b>

Pahala WWTP  
Preliminary Engineering Report  
Cost Estimate

**Alternative #2 - MBR Package Plants / Reuse / Subsurface Drip**

**Capital Cost Estimate**

Pahala WWTP Capital Cost Item Description	Units	General Unit Cost	Number of Units	COST
<b>Influent Sewer</b>				
16 inch sewer main along easement from Maile St	LF	\$480	1,700	\$816,000
			<b>Subtotal</b>	\$816,000
			<b>Contingency @ 20%</b>	\$164,000
			<b>Influent Sewer Total</b>	<b>\$980,000</b>
<b>Wastewater Treatment</b>				
Environmental protection, BMPs	ac	\$11,000	1.5	\$16,500
Site clearing	ac	\$20,000	1.5	\$30,000
Site roads, guard rails, pavement	ac	\$92,000	1.5	\$138,000
Perimeter fence	LF	\$150	3,000	\$450,000
Site grading	ac	\$30,000	1.5	\$45,000
Site drainage improvements	ac	\$18,000	1.5	\$27,000
Plant water catchment/collection system	LS	\$75,000	1	\$75,000
Process yard piping	LS	\$250,000	1	\$250,000
Headworks (includes site/civil, structures, equipment & piping)	LS	\$1,011,000	1	\$1,011,000
Chlorine disinfection	LS	\$150,000	1	\$150,000
MBR package plants	LS	\$3,515,000	1	\$3,515,000
Plant drainage system	ac	\$40,000	1.5	\$60,000
Main generator (including process piping)	LS	\$494,000	1	\$494,000
Maintenance/operations/electrical building	SF	\$1,000	2,150	\$2,150,000
Sludge dewatering system	LS	\$860,000	1	\$860,000
			<b>Subtotal</b>	\$9,271,500
			<b>Electrical &amp; Instrumentation @ 25%</b>	\$2,318,000
			<b>Subtotal</b>	\$11,590,000
			<b>Contingency @ 20%</b>	\$2,318,000
			<b>Wastewater Treatment Total</b>	<b>\$13,908,000</b>
<b>Effluent Disposal</b>				
Irrigation equalization tank	gal	\$10	20,000	\$200,000
Subsurface drip irrigation line	LF	\$10	52,000	\$520,000
Irrigation piping & valves	LF	\$250	800	\$200,000
			<b>Subtotal</b>	\$920,000
			<b>Electrical &amp; Instrumentation @ 25%</b>	\$230,000
			<b>Subtotal</b>	\$1,150,000
			<b>Contingency @ 20%</b>	\$230,000
			<b>Effluent Disposal Total</b>	<b>\$1,380,000</b>
			<b>Alternative #2 TOTAL</b>	<b>\$16,268,000</b>

**Alternative #3 - Imhoff Tank / RGF / Subsurface Drip**

**Capital Cost Estimate**

Pahala WWTP Capital Cost Item Description	Units	General Unit Cost	Number of Units	COST
<b>Influent Sewer</b>				
Influent sewer (16 inch) main along easement from Maille St	LF	\$480	1,700	\$816,000
			<b>Subtotal</b>	\$816,000
			<b>Contingency @ 20%</b>	\$164,000
			<b>Influent Sewer Total</b>	<b>\$980,000</b>
<b>Wastewater Treatment</b>				
Environmental protection, BMPs	ac	\$11,000	2	\$22,000
Site clearing	ac	\$20,000	2	\$40,000
Site roads, guard rails, pavement	ac	\$92,000	2	\$184,000
Perimeter fence	LF	\$150	3,000	\$450,000
Site grading	ac	\$30,000	2	\$60,000
Site drainage improvements	ac	\$18,000	2	\$36,000
Plant water catchment/collection system	LS	\$75,000	1	\$75,000
Process yard piping	LS	\$250,000	1	\$250,000
Headworks (includes site/civil, structures, equipment & piping)	LS	\$1,011,000	1	\$1,011,000
Imhoff tank	LS	\$1,063,000	1	\$1,063,000
Recirculation tank	LS	\$890,000	1	\$890,000
Recirculating gravel filter	LS	\$2,541,000	1	\$2,541,000
Chlorine disinfection	LS	\$150,000	1	\$150,000
Plant drainage system	ac	\$40,000	2	\$80,000
Main generator (including process piping)	LS	\$494,000	1	\$494,000
Maintenance/operations/electrical building	SF	\$1,000	1,645	\$1,645,000
Sludge dewatering system	LS	\$860,000	1	\$860,000
			<b>Subtotal</b>	\$9,851,000
			<b>Electrical &amp; Instrumentation @ 25%</b>	\$2,463,000
			<b>Subtotal</b>	\$12,314,000
			<b>Contingency @ 20%</b>	\$2,463,000
			<b>Wastewater Treatment Total</b>	<b>\$14,777,000</b>
<b>Effluent Disposal</b>				
Irrigation equalization tank	gal	\$10	20,000	\$200,000
Subsurface drip irrigation line	LF	\$10	52,000	\$520,000
Irrigation piping & valves	LF	\$250	800	\$200,000
			<b>Subtotal</b>	\$920,000
			<b>Electrical &amp; Instrumentation @ 25%</b>	\$230,000
			<b>Subtotal</b>	\$1,150,000
			<b>Contingency @ 20%</b>	\$230,000
			<b>Effluent Disposal Total</b>	<b>\$1,380,000</b>
			<b>Alternative #3 TOTAL</b>	<b>\$17,137,000</b>

**Pahala WWTP  
Preliminary Engineering Report  
O&M Cost Estimates**

**Electricity cost** \$0.45 /kWh

**Flow**  
ADWF: 0.095 mgd  
0.146987 cfs

**Labor (common across all alternatives)**  
COH WWTP operator annual salary \$100,000 including fringe benefits  
Number of employees/operators 2 2 Shifts: Wed - Sat / Mon - Fri  
Annual labor cost: \$200,000

**Electricity**

Load	Duty Unit Count	Motor Size (hp)	Use Factor	Equivalent Continuous Load (hp)	Annual Power (kWh)	Alt 1 RAS PP (kWh)	Alt 2 MBR PP (kWh)	Alt 3 RGF (kWh)
<b>Headworks</b>								
Screens	1	2	20%	0.4	2,613	2,613	2,613	2,613
Grit blower	2	5	100%	10	65,323	65,323	65,323	65,323
<b>Process tanks</b>								
Anoxic zone mixers	2	5	100%	10	65,323	65,323	65,323	N/A
Aeration blower (main)	1	27	100%	27	176,373	176,373	176,373	N/A
Aeration blower (flow equalization)	1	13	100%	13	84,920	84,920	84,920	N/A
Imhoff tank odor control	1	2	100%	2	13,065	N/A	N/A	13,065
Recirculation tank pump	1	5	100%	5	32,662	N/A	N/A	32,662
<b>Secondary clarifier</b>								
Clarifier mechanisms	2	1	100%	2	13,065	13,065	N/A	N/A
<b>Membranes</b>								
Membrane blower	2	5	30%	3	19,597	N/A	19,597	N/A
Permeate pumps	2	5	100%	10	65,323	N/A	65,323	N/A
<b>Aerobic digestion</b>								
Digester blowers	2	5	90%	9	58,791	58,791	58,791	58,791
<b>Sludge dewatering</b>								
Screw press feed pump	1	5	30%	1.5	9,798	9,798	9,798	9,798
Screw press	1	2	30%	0.6	3,919	3,919	3,919	3,919
Cake conveyor	1	2	30%	0.6	3,919	3,919	3,919	3,919



<u>Miscellaneous</u>								
Drainage return pumps	1	5	10%	0.5	3,266	3,266	3,266	3,266
Plant water pumps	1	5	100%	5	32,662	32,662	32,662	N/A
Fans	2	1	100%	2	13,065	13,065	13,065	13,065
Annual electricity consumption kWh:						533,038	604,894	206,422
<b>Annual electricity cost:</b>						<b>\$240,000</b>	<b>\$270,000</b>	<b>\$90,000</b>

**Chemicals**

**Hypochlorite Tablets**

Daily chlorine demand @ ADWF	6.3	lbs/d	assuming 8 mg/L dose, 15 min contact time @ PHW/WF
Annual hypochlorite demand @ ADWF	2,300	lbs/yr	
Hypochlorite tablet unit cost	\$8	per lb	
<b>Total annual hypochlorite tablet cost:</b>	<b>\$18,400</b>		common across all alternatives

**Dewatering polymer**

Daily dewatering polymer use	1.3	lbs/d	assuming 20 lbs/dry ton dose
Annual dewatering polymer use	475	lbs/yr	
Dewatering polymer unit cost	\$3	per lb	
<b>Total annual dewatering polymer cost:</b>	<b>\$1,500</b>		common across all alternatives

**MBR cleaning chemicals**

Sodium hypochlorite & citric acid cost:	\$5,000	per yr	Alternative #2 only
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**Membrane replacement (Alt #2)**

Membrane cost per module	\$1,950	material costs only
Estimated additional costs per module	\$500	shipping & handling + installation costs
Number of membrane modules	24	modules (12 per unit)
<b>Membrane replacement cost:</b>	<b>\$59,000</b>	15 year life expectancy

**Maintenance materials**

	Alt 1 RAS PP	Alt 2 MBR PP	Alt 3 RGF	
Package plant capital cost	\$3,491,000	\$3,515,000	N/A	
Process equipment capital cost	\$5,140,000	\$5,140,000	\$9,129,000	not including package plant
Equipment replacement cost factor	25.0%	25.0%	25.0%	replace after 20 years
process equipment replacement cost	\$1,285,000	\$1,285,000	\$2,282,250	not including package plant
<b>Total equipment replacement cost:</b>	<b>\$4,776,000</b>	<b>\$4,800,000</b>	<b>\$2,283,000</b>	includes 100% package plant replacement
Maintenance materials cost factor	2.0%	2.0%	2.0%	
<b>Total annual maintenance materials cost:</b>	<b>\$96,000</b>	<b>\$96,000</b>	<b>\$46,000</b>	

2 of 3

**Sludge disposal**

Daily dewatering flow:	517	gpd	
Daily dewatered sludge mass	0.54	wet tons/d	
West HI sanitary landfill tipping fee	\$116.00	per wet ton	
Onsite disposal roll off dumpster size	5.00	cu yds	
Dumpster rental fee	\$300.00	per week	
Annual dumpster rental fee	\$15,600.00		
Disposal frequency	7.00	days	Requires weekly disposal (once every 7 days)
Diesel price (dollar per gallon)	\$6.22	per gallon	
Employee labor cost per hour	\$48.08	per hour	based on 100K annual salary
Distance Pahala to Landfill (roundtrip)	189.4	mi	per google maps
Distance Pahala to Naalehu (roundtrip)	24.8	mi	per google maps
Dump truck fuel economy	5.00	mpg	

**Annual sludge disposal cost (truck to landfill) alternative**

Annual fuel cost	\$12,300
Annual landfill tipping fee	\$22,900
Annual Dumpster rental fee	\$15,600
<b>Total annual sludge disposal cost:</b>	<b>\$51,000</b>

**Annual sludge disposal cost (No dewatering - truck sludge to Naalehu) alternative**

Storage capacity of dump truck	2000	gal
Weekly volume of sludge	3,619	gal
Required trips to Naalehu per week	2	count
Required trips to Naalehu per year	104	count
Distance traveled per year	2,600	mi

Annual sludge disposal fuel cost	\$3,300
No dewatering polymer	-\$1,500
<b>Total annual sludge disposal cost:</b>	<b>\$1,800</b>

For informational purposes only

**New collection system maintenance (common across all alternatives)**

Gravity collection sewer mainline	2.5	mi
Gravity mainline maintenance cost	\$16,000	
<b>Total annual mainline maintenance cost:</b>	<b>\$40,000</b>	

**Reuse existing collection system maintenance**

Gravity mainline maintenance multiplier	3
<b>Total annual mainline maintenance cost:</b>	<b>\$120,000</b>

3 of 3

DANDY DE  
COMMISSIONER



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

ELIZABETH A. CHAN, M.D.  
DIRECTOR OF HEALTH

WV 705 Final CL PARKS WWTP  
TERRELL ISLAND

January 26, 2022

## Appendix B: DOH Variance

Mr. Craig Lekven  
Director  
Brown and Caldwell  
2261 Aupuni Street, Suite 201  
Maui, Hawaii 96793

Dear Mr. Lekven:

Subject: **Variance Application No. WW 705 Docket No. 21-VWV-69 ID 690**  
Final Decision Regarding Wastewater System for  
County of Hawaii, Pahala Wastewater Treatment Plant  
Pahala, Hawaii 96777 TMK (3) 9-6-002: 018

The Department of Health (Department) has granted your request for the subject variance per the enclosed Decision and Order dated January 26, 2022 for five (5) years. We are also enclosing the Department's Findings of Fact and Conclusions of Law.

If there are any questions relating to the variance, please contact Ms. Sina Pruder, Chief of the Wastewater Branch at our direct toll-free number (808) 974-4000 ext. 64294.

Sincerely,

for  
**JOANNA L. SETO, P.E., CHIEF**  
Environmental Management Division

LMS/SP:lk

Enclosures: Final Decision Documents

c  
Agent: Mr. Craig Lekven, via email & email: [cl Lekven@brownandcald.com](mailto:cl Lekven@brownandcald.com)  
Applicant: Mr. Ramzi Mansour, via email: [ramzi@hawaii-county.gov](mailto:ramzi@hawaii-county.gov)  
Clean Water Branch (AW) via email  
Safe Drinking Water Branch (DL, NU) via email  
Wastewater Branch (TL) (AC) Staff Engineer, via email  
County of Hawaii, Department of Water Supply, via email: [dl@hawaii-county.gov](mailto:dl@hawaii-county.gov)  
Hilo District Health Office, via email: [ERIC.HODGES@COH.HAWAII.GOV](mailto:ERIC.HODGES@COH.HAWAII.GOV)  
Ms. Sina Pruder, via email: [SINA@DOH.HAWAII.GOV](mailto:SINA@DOH.HAWAII.GOV)  
Mr. Richard J. Oka, via email: [RJO@DOH.HAWAII.GOV](mailto:RJO@DOH.HAWAII.GOV)

STATE OF HAWAII  
DEPARTMENT OF HEALTH

In the Matter of the Variance Application WW 705 ) Docket No. 21-VWW-69  
For Individual Wastewater System ) ID 690  
County of Hawaii ) )  
Pahala Wastewater Treatment Plant ) )  
Pahala, Hawaii 96777 ) )  
TMK (3) 9-6-002: 018 ) )

DECISION AND ORDER

Pursuant to Hawaii Revised Statutes (HRS), Chapter 342D and Hawaii Administrative Rules (HAR), Chapter 62 of Title 11, "Wastewater Systems," and based upon the application and staff review, the variance request from the provisions of HAR section 11-62-24(b) is hereby granted for five (5) years with the following conditions:

1. As a minimum, the proposed Pahala Wastewater Treatment Plant (WWTP) shall be designed using an average dry weather flow of 95,000 gallons per day.
2. Plans for the proposed Pahala WWTP shall be designed in accordance with applicable requirements of Chapter 11-62, HAR and be submitted to the Wastewater Branch for review and approval. In addition, the WWTP shall be approved in writing before it may be used.
3. There is no automatic renewal. Should the applicant wish to renew this variance application, the applicant must submit an Application for Variance for renewal, 180 days prior to expiration date.

DATED: Pearl City, Hawaii, January 26, 2022

*Joanna L. Seto*  
for JOANNA L. SETO, P.E., CHIEF  
Environmental Management Division

STATE OF HAWAII  
DEPARTMENT OF HEALTH

In the Matter of the Variance Application WW 705 ) Docket No. 21-VWW-69  
For Individual Wastewater System ) ID 690  
County of Hawaii ) )  
Pahala Wastewater Treatment Plant ) )  
Pahala, Hawaii 96777 ) )  
TMK (3) 9-6-002: 018 ) )

FINDINGS OF FACT AND CONCLUSIONS OF LAW

Department of Health (Department) staff reviewed an application from Mr. Ramzi Mansour, Director of the County of Hawaii, Department of Environmental Management has applied for a variance for the maximum of five (5) years from section 11-62-24(b) of Hawaii Administrative Rules (HAR), Chapter 62 of Title 11, "Wastewater Systems."

A public notice of the application was printed in the December 1, 2021 issue of the *Hawaii Tribune Herald* newspaper. Four (4) agency comments and twenty-nine (29) public comments pertaining to the application were received during the 30 days following the publication of the public notice.

Findings of Fact

Mr. Craig Lekven, Director of Brown and Caldwell is the authorized agent to act for the applicant. The variance request is to use a reduced design flow capacity for the proposed Pahala Wastewater Treatment Plant (WWTP) located in Pahala, Hawaii 96777 and TMK (3) 9-6-002: 018.

Additional statements and information for this project have been provided in the variance application. Please contact the Wastewater Branch at (808) 586-4294 for a copy of the Application for Variance and all comments received during the 30 days public notice period.

The following agencies submitted the following comments:

1. The Clean Water Branch submitted that they will defer to the Wastewater Branch's final decision. Please call Mr. Alec Wong, Branch Chief of the Clean Water Branch at (808) 586-4309, if you have any questions or comments.
2. The Safe Drinking Water Branch submitted that they will defer to the Wastewater Branch's final decision. Please call Mr. Norris Uehara, Supervisor of the Safe Drinking Water Branch's Underground Injection Control Program at (808) 586-4258, if you have any questions or comments.
3. The Wastewater Branch submitted the following comments:
  - A. As a minimum, the proposed Pahala WWTP shall be designed using an average dry weather flow of 95,000 gallons per day.
  - B. Plans for the proposed Pahala WWTP shall be designed in accordance with applicable requirements of Chapter 11-62, HAR and be submitted to the Wastewater Branch for review and approval. In addition, the WWTP shall be approved in writing before it may be used.

C. Upon agreement of the conditions stated above, we recommend the granting of this variance.

4. The Hawaii Department of Land and Natural Resources submitted comments pertaining to this variance application. Should you wish to review them, please contact the Wastewater Branch at (808) 586-4294 or email [doh.wwwb@doh.hawaii.gov](mailto:doh.wwwb@doh.hawaii.gov) for a copy.

Conclusions of Law

Hawaii Revised Statutes Section 342D-7(c), states that in part, no variance shall be granted by the Department unless the application and supporting information clearly show that:

1. The continuation of the function or operation involved in the discharge of waste occurring or proposed to occur by the granting of this variance is in the public interest as defined in section 342D-6;
2. The discharge occurring or proposed to occur does not substantially endanger human health or safety; and
3. Compliance with the rules or standards from which the variance is sought would produce serious hardship without equal or greater benefits to the public.


Based upon the foregoing findings of fact, it is concluded that the above requirements have been met.

Comment and Recommendation

Based upon the foregoing findings of fact and conclusions of law, it is my recommendation that the variance request be granted for five (5) years with the following conditions:

1. As a minimum, the proposed Pahala WWTP shall be designed using an average dry weather flow of 95,000 gallons per day.
2. Plans for the proposed Pahala WWTP shall be designed in accordance with applicable requirements of Chapter 11-62, HAR and be submitted to the Wastewater Branch for review and approval. In addition, the WWTP shall be approved in writing before it may be used.
3. There is no automatic renewal. Should the applicant wish to renew this variance application, the applicant must submit an Application for Variance for renewal, 180 days prior to expiration date.

DATED: Pearl City, Hawaii, January 26, 2022

  
for JOANNA L. SETO, P.E., CHIEF  
Environmental Management Division

The foregoing findings of fact and conclusions of law are hereby adopted.

Pahala WWTP Alternative Solutions  
 Non-Economic Evaluation February 2023

Category	Category Weight	Criteria	Criteria Weight	Raw Scores			Weighted Scores		
				Alt #1 RAS	Alt #2 MBR	Alt #3 RGF	Alt #1 RAS	Alt #2 MBR	Alt #3 RGF
Level of Service	25%	Effluent quality	30%	3	5	3	0.90	1.50	0.90
		Potential for capacity expansion	20%	5	5	2	1.00	1.00	0.40
		Water recycling feasibility	30%	3	5	2	0.90	1.50	0.60
		Public perception / community concerns	20%	3	5	3	0.60	1.00	0.60
Regulatory	25%	Monitoring complexity	25%	4	3	5	1.00	0.75	1.25
		Treatment adjustment potential	25%	5	5	3	1.25	1.25	0.75
		Safety regulations complexity	25%	4	4	4	1.00	1.00	1.00
		Environmental concerns	25%	4	5	3	1.00	1.25	0.75
O&M Factors	25%	Footprint	30%	5	5	2	1.50	1.50	0.60
		Safe work environment	25%	4	3	4	1.00	0.75	1.00
		Maintenance complexity	25%	4	3	4	1.00	0.75	1.00
		Operations complexity	20%	4	3	5	0.80	0.60	1.00
Island Factors	25%	Mainland delivery dependence	25%	3	3	4	0.75	0.75	1.00
		Mainland servicing dependence	25%	3	3	4	0.75	0.75	1.00
		Power dependence	25%	3	3	5	0.75	0.75	1.25
		Chemical dependence	25%	4	3	4	1.00	0.75	1.00
<b>Overall Score:</b>							<b>3.80</b>	<b>3.96</b>	<b>3.53</b>

\*\*\*Note: 5 = high/desirable, 1 = low/not-desirable

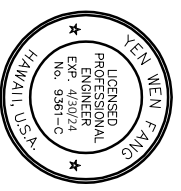
**PART B: IWS Approach**

# PART B

## Pahala Individual Wastewater System Preliminary Engineering Report

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Prepared for  
Brown and Caldwell  
&  
County of Hawaii, Department of Environmental Management  
March 2023



THIS WORK (PART B) WAS PREPARED BY ME OR UNDER MY SUPERVISION

*Yen Wen Fang*  
Yen Wen Fang

April 30, 2024  
Expiration Date of the License



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## 1 Section 1 Preliminary Considerations 1.1 Operational Considerations

An effective Individual Wastewater System (IWS) management strategy is crucial to ensuring distributed treatment systems are maintained and operated in a way that ensures they are functioning properly and effectively treating wastewater. This strategy may include but is not limited to:

- **Monitoring:** Regular inspections of system components, such as septic tanks and drain fields, ensure they are functioning properly and identify and address any issues that may arise.
- **Maintenance:** Proper maintenance of the system is also crucial, including regular pumping of septic tanks, cleaning and maintenance of the distribution systems, and proper maintenance of the treatment components. Regular maintenance can help prevent issues such as clogs and backups, which can lead to costly repairs and potential health hazards.
- **Regulatory Compliance:** Necessary permits and licenses are obtained for the system, and required inspection and reporting schedules are met with the local regulator.
- **Community Education:** Information and training on proper usage and maintenance of the systems are provided to homeowners, and any concerns or questions that may arise are addressed.

In Hawaii, centralized wastewater treatment plants and cluster systems are regulated and inspected by the Department of Health (DOH) Wastewater Branch (Hawaii's Administrative Rules 11-62). State-licensed WWTP operators are required for oversight to ensure that systems are inspected, operated, and maintained as required. A similar regulatory requirement does not exist for IWS in Hawaii. The State DOH Wastewater Branch is responsible for regulating IWS while operation and maintenance are currently the responsibility of the individual homeowner. If IWS were selected to serve Pāhala Community, maintenance responsibilities could be distributed in a number of ways. In a 2003 resource, the EPA outlined five management models that can be used for the operation and maintenance of IWS (Figure 1.1).

When selecting an appropriate management model for a network of IWS, it is important to take into account the regulatory and cultural framework within which the IWS are situated. As it stands in Hawaii, IWS are currently managed using a combination of management Models 1 and 2 (DOH, 2016):

- **Model 1: Homeowner Awareness.** The DOH allows septic systems to be managed under this model. Homeowners own and operate their own IWS and are responsible for keeping



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- the system in good working order.
- Model 2: Maintenance Contracts.** The DOH requires that Aerobic Treatment Units (ATUs) are managed using this model. Homeowners are required to have an active service contract with a certified operator or factory certified representative, and a copy of that active service contract must be submitted annually to the DOH (DOH, 2016). Elevated regulation around the operation of ATUs is a reflection of their increased mechanical complexity and associated maintenance demands.

Figure 1.1: The five management models for IWS maintenance (EPA, 2003)

The Five Management Models				
Model 1	Model 2	Model 3	Model 4	Model 5
<b>Homeowner Awareness:</b>	<b>Maintenance Contracts:</b>	<b>Operating Permits:</b>	<b>Responsible Management Entity (R/IME) Operation and Maintenance:</b>	<b>RME Ownership:</b>
specifies appropriate program elements and activities where treatment systems are owned and operated by individual property owners in areas of low environmental sensitivity. This program is adequate where treatment technologies are limited to conventional systems that require little owner attention. To help ensure that timely maintenance is performed, the regulatory authority mails maintenance reminders to owners at appropriate intervals.	specifies program elements and activities where more complex designs are employed to enhance the capacity of conventional systems to accept and treat wastewater. Because of treatment complexity, contracts with qualified technicians are needed to ensure proper and timely maintenance.	specifies program elements and activities where performance of treatment systems is critical to protect public health and water quality. Limited-term operating permits are issued to the owner and are renewable for another term if the owner demonstrates that the system is in compliance with the terms and conditions of the permit. Performance-based designs may be incorporated into programs with management controls at this level.	specifies program elements and activities where frequent and highly reliable operation and maintenance of decentralized systems is required to ensure water resource protection in sensitive environments. Under this model, the operating permit is issued to an RME instead of the property owner to provide the needed assurance that the appropriate maintenance is performed.	specifies that program elements and activities for treatment systems are owned, operated, and maintained by the RME, which removes the property owner from responsibility for the system. This program is analogous to central sewerage and provides the greatest assurance of system performance in the most sensitive of environments.

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The AOC stipulates that the County of Hawai'i must administer a more active management strategy than is typical in Hawai'i, either a Model 2 (Maintenance Contract) or Model 3 (Operating Permit) management strategy for a network of IWS at Pahala. These models reflect varying degrees of responsibility to the County and homeowner (Table 1.1). Four potential variations of these models are outlined here for implementation on this project:

- Management Model 2A: Maintenance Contract with County In-House Staff**  
The County employs and trains an in-house IWS management team; purchases and maintains its own pumping/hauling equipment; and administers the management program. The homeowner pays a monthly sewer fee that covers a portion of the costs.
  - Management Model 2B: Maintenance Contract with Third-Party Service**  
The County administers the management program, keeps an operations and maintenance (O&M) schedule, and contracts out O&M activities to a third-party service provider. The homeowner pays a monthly sewer fee that covers a portion of the costs. Administration costs for this program can be mitigated with the use of an online asset management service.
  - Management Model 3A: Operating Permits with O&M by Users**  
The County issues an operating permit to the homeowner. Keeps an O&M schedule; and sends out maintenance reminders to homeowners. The homeowner is responsible for contracting a third-party service provider to conduct maintenance. An online asset management service with a portal for approved maintenance professionals to log service events is strongly recommended for the County to track homeowner compliance and levy fines, as needed.
  - Management Model 3B: Operating Permits with O&M Voucher by County**  
The County issues an operating permit to the homeowner. Keeps an O&M schedule; and sends out maintenance reminders with service vouchers to homeowners. The homeowner pays a sewer fee and is responsible for contracting a third-party service provider to conduct annual maintenance using the voucher. An online asset management service with a portal for approved maintenance professionals to log service events is strongly recommended for the County to track homeowner compliance and levy fines, as needed.
- These management strategies presented here are required by the AOC but are also unique to Hawai'i and will present a number of barriers for implementation at the legislative, regulatory, and public levels. The Pahala Community and Hawai'i's stakeholders at large are accustomed to Management Model 1, which is the standard practice across the State of Hawai'i.

Table 1.1: County and homeowner responsibilities under variations of the EPA management models 2 and 3

Management Model	Brief Description of Management Model	County's Responsibility	Homeowner / User's Responsibility	Pros	Cons
2A	Maintenance Contract w/ County in-house staff	<ul style="list-style-type: none"> <li>Funds design and construction of IWS</li> <li>Purchase equipment &amp; train IWS operator</li> <li>O&amp;M of IWS including trouble calls</li> <li>Keeping record of O&amp;M log</li> <li>Send out notices and reminders to homeowners</li> <li>Submit IWS inspection reports and variance renewals to State DOH</li> </ul>	<ul style="list-style-type: none"> <li>Report IWS problem to County</li> <li>Cooperates and allows County staff to enter private property and provide maintenance of IWS</li> <li>Maintain clearance to IWS for easy access</li> </ul>	<ol style="list-style-type: none"> <li>Best control on O&amp;M schedule</li> <li>Ensure best IWS performance</li> </ol>	<ol style="list-style-type: none"> <li>Highest cost</li> <li>May not receive cooperation from some homeowners/users</li> <li>Homeowner may have more trouble calls</li> <li>Potential dispute between homeowner &amp; County on plumbing repair cost &amp; IWS repair cost</li> </ol>
2B	Maintenance Contract w/ 3rd Party Service	<ul style="list-style-type: none"> <li>Funds design and construction of IWS</li> <li>Select/prequalify certain 3rd party service provider (Pumper)</li> <li>Issue PO to Pumper &amp; plumber for annual inspection and trouble calls</li> <li>Keeping record of O&amp;M log</li> <li>Send out notices and reminders to homeowners</li> <li>Submit IWS inspection reports and variance renewals to State DOH</li> </ul>	<ul style="list-style-type: none"> <li>Report IWS problem to County</li> <li>Cooperates and allows service providers to enter private property and provide maintenance of IWS</li> <li>Maintain clearance to IWS for easy access</li> </ul>	<ol style="list-style-type: none"> <li>Better control on O&amp;M schedule</li> <li>Ensure better IWS performance</li> <li>Less County staff to train</li> <li>No pumping/hauling equipment to purchase &amp; maintain</li> </ol>	<ol style="list-style-type: none"> <li>Higher cost</li> <li>May not receive cooperation from some homeowners/users</li> <li>Homeowner may have more trouble calls</li> <li>Potential dispute between homeowner &amp; County on plumbing repair cost &amp; IWS repair cost</li> </ol>
3A	Operating Permits w/ O&M by Users	<ul style="list-style-type: none"> <li>Funds design and construction of IWS</li> <li>Keeping record of O&amp;M log</li> <li>Send out notices and reminders to homeowners</li> <li>Enforce rules and regulations</li> <li>Issues permit to homeowner to use, operate &amp; maintain the IWS</li> </ul>	<ul style="list-style-type: none"> <li>Contracts with preferred pumper / plumber to maintain the IWS</li> <li>Pay for the O&amp;M service</li> <li>Submit O&amp;M record to County</li> <li>Submit IWS inspection reports and variance renewals to State DOH</li> </ul>	<ol style="list-style-type: none"> <li>Least cost to County</li> <li>No O&amp;M staff or equipment</li> <li>No trouble calls</li> </ol>	<ol style="list-style-type: none"> <li>Least control for IWS compliance &amp; performance</li> <li>Conflict with non-compliant homeowners</li> <li>Highest cost to homeowner</li> </ol>
3B	Operating Permits w/ O&M Voucher by County	<ul style="list-style-type: none"> <li>Funds design and construction of IWS</li> <li>Keeping record of O&amp;M log</li> <li>Send out notices and reminders to homeowners</li> <li>Enforce rules and regulations</li> <li>Pre-select qualifying service providers</li> <li>Issue vouchers to homeowners for annual inspections and pumping</li> <li>Issues permit to homeowner to use, operate &amp; maintain the IWS</li> </ul>	<ul style="list-style-type: none"> <li>Contracts with preferred pre-qualified pumper / plumber to maintain the IWS</li> <li>Pay for the annual O&amp;M service with voucher</li> <li>Submit O&amp;M record to County by pumper</li> <li>Submit IWS inspection reports and variance renewals to State DOH</li> </ul>	<ol style="list-style-type: none"> <li>Reasonable control on O&amp;M</li> <li>Reasonable IWS performance</li> <li>Less County staff to train</li> <li>No pumping/hauling equipment to purchase &amp; maintain</li> <li>Trouble calls to be paid for by homeowner</li> </ol>	<ol style="list-style-type: none"> <li>High cost to County</li> <li>Less control of all IWS</li> </ol>

systems such as traffic rated tanks or aerobic treatment significantly affect overall installed cost. For disposal, seepage pits are significantly lower cost than absorption fields when it is possible to convert an existing cesspool. Site specific conditions will control which options are required. For traditional residential IWS installations subject to State procurement regulations, capital costs per household are typically in the range of \$30,000-\$100,000 (Table 1.2).

Table 1.2: Installation cost estimates for a standard septic tank installed in conjunction with an absorption bed (left) and seepage pit (right). Figures are based on a 3-bedroom house and a percolation rate no slower than 5 min/inch.

	Standard Absorption Bed		Seepage Pit	
	Low (non-traffic)	High (Traffic Rated)	Low (non-traffic)	High (Traffic Rated)
Septic Tank	3,000.00	7,000.00	3,000.00	7,000.00
D-Box	750.00	2,000.00	-	-
Sewer pipe	250.00	250.00	250.00	250.00
Leach field-pipe/chamber	500.00	3,000.00	-	-
Leach field-gravel	1,000.00	500.00	-	-
Cone. Ring	-	-	3,000.00	3,000.00
Cone. Cover	-	-	2,500.00	4,000.00
Soil replacement	1,500.00	1,500.00	-	-
Inspection ports	500.00	500.00	-	-
Misc. material	2,000.00	2,000.00	2,000.00	2,000.00
<b>Material Total</b>	<b>\$ 9,500.00</b>	<b>\$ 16,750.00</b>	<b>\$ 10,750.00</b>	<b>\$ 16,250.00</b>
Labor / Equipment	7,500.00	15,000.00	7,500.00	15,000.00
Remoteness	5,000.00	5,000.00	5,000.00	5,000.00
Trucking for spoils	3,000.00	3,000.00	3,000.00	3,000.00
Tight working space	3,000.00	10,000.00	3,000.00	10,000.00
Relocate/reinstall/repair	5,000.00	50,000.00	5,000.00	50,000.00
<b>TOTAL</b>	<b>\$ 33,000.00</b>	<b>\$ 99,750.00</b>	<b>\$ 34,250.00</b>	<b>\$ 99,250.00</b>

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- Operations and Maintenance cost:** Operations and maintenance cost also play a big role in overall cost of IWS. Annual maintenance costs for a traditional septic system can typically run up to \$400/year. Additional operations costs for aerobic treatment units are estimated to be \$18,000/year to cover the electricity bill and contract operator cost.

Annual maintenance costs to the County and homeowner vary depending on the management strategy. Here it is estimated that bringing maintenance in-house is the most affordable option (Table 1.3). However, the use of an efficient asset management tool could bring down cost redundancy in the following strategies. Annual costs over a 20-year service lifetime are further expounded in Appendix C.

*Table 1.3: The costs associated with four IWS management models, assuming septic systems with leach fields (Appendix A).*

Management Model	Average Annual Cost to County		Average Annual Cost to Homeowner		Net Annual Cost to County	Total Annual Dollars Spent
	Third-Party Service Provider	In-House	Third-Party Service Provider	County Sewer Bill		
2A: Maintenance Contract w/ County in-house staff	-	(\$956)	-	\$600 <sup>1</sup>	(\$356)	(\$956)
2B: Maintenance Contract w/ 3rd Party Service	(\$783)	(\$572)	-	\$600 <sup>1</sup>	(\$175)	(\$1,355)
3A: Operating Permits w/ O&M by Users	-	(\$572)	(\$733)	-	(\$572)	(\$1,305)
3B: Operating Permits w/ O&M Voucher by County	(\$533)	(\$572)	-	\$600 <sup>1</sup>	(\$505)	(\$1,105)

### 1.3 Environmental Considerations

Properly designed and operated IWS are an effective means of wastewater disposal at a fraction of the cost compared to a centralized treatment facility. Conversely, poorly designed and maintained IWS are failing at rates between 25-70% nationally (Mohamed, 2009). Approximately 168,000 viral and 34,000 bacterial illnesses each year in the US can be traced to failing septic tanks (Ibid). Septic tanks are also the second most common contributor to groundwater pollution and a contributing source in one-third of all harvest-limited ocean growing areas (EPA, 2003). Consequently, care must

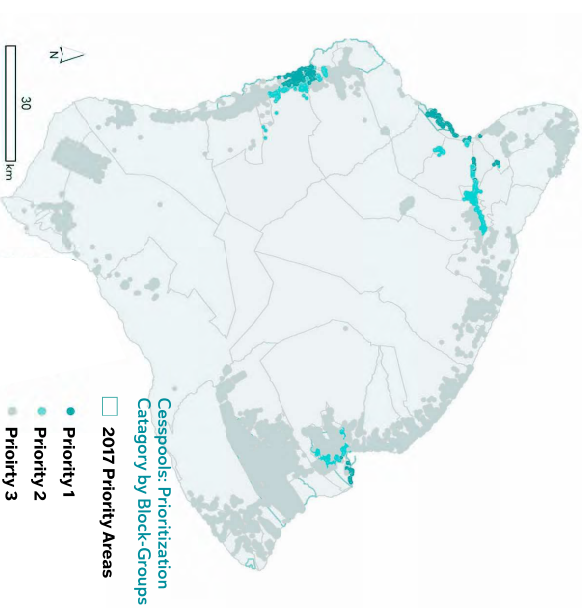
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be taken in both the technical design and management strategy of IWS.

The DOH Wastewater Branch has assigned priority levels to each of the 88,000 cesspools across the state of Hawaii (DOH, 2017). These priority levels ranged from Priority 1: Significant Risk of Human Health Impacts, Drinking Water Impacts, or Draining to Sensitive Waters to Priority 4: Impacts Not Identified. Priority 1 and 2 areas would be required to upgrade sooner and to higher levels of treatment.

On Hawaii's Island, the Hilo Bay, Kona, Pukō, and Kapoho were identified as priority 3 areas while Kea'au was identified as priority 2. Pahala meanwhile fell under priority 4, the lowest of those available, as an area for which health and environmental risks had not been assessed or appeared low. Subsequently, a more comprehensive 2021 study that explored Hawaii's cesspool prioritization, factoring in a total of 15 risk factors, reached a similar conclusion (Mezzacapo & Shuler, 2021).

*Figure 1.2: Prioritization of Hawaii's Island cesspools based on 15 site specific risk factors (Mezzacapo, 2022)*



### 1.4 Constructability

IWS are designed to treat and dispose of wastewater generated by individual homes. The design of these systems must take into account a variety of technical considerations to ensure the system functions as intended and protects public health and the environment:

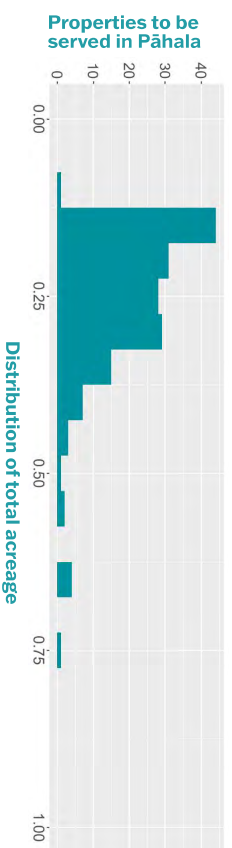
- **System Size:** The size of the system, including the number of bedrooms or the flow rate, can significantly affect the design of an IWS, particularly in space-constrained communities like Pāhala.
- **Site Conditions:** The soil type, slope, drainage patterns, and accessibility of the site can affect the design and cost of the system. For example, a site with poor soil conditions may require more expensive treatment methods or additional site preparation.
- **Location:** Factors such as labor and materials costs will increase due to the remoteness of the community and distance from major population and commercial centers.
- **Influent Characteristics:** Pollutant types and concentrations can vary significantly from property to property. Wastewater produced from a single-family household is quite different from that of a restaurant, for example.
- **Level of Treatment:** The desired level of treatment can also affect the design. If regulations require a higher level of treatment than a conventional septic system can provide, advanced treatment systems are required.

The following section outlines the impact of these considerations on the constructability of a system of IWS to serve the Pāhala community.

#### 1.4.1 Available Space Per Property

Lots to be served in the community vary in size from 0.12 to 67 acres with a median size of 0.24 acres (Figure 1.3). Per Hawai'i Administrative Rules, HAR 11-62-31.1 (2)(A), 10,000 ft<sup>2</sup> (0.23 acres) of usable land must be available for each IWS. Of the 170 properties to be served in this project, 81 have less than 10,000 ft<sup>2</sup> of total area. Space available for IWS installation on these properties is further limited by the presence of both permitted and unpermitted structures.

Figure 1.3: Distribution of total acreage (x-axis) for properties to be served in Pāhala under this project.



The actual location of treatment and disposal infrastructure is limited by setback requirements. DOH-required setbacks are presented below (Table 1.4). From a system design perspective, it is recommended that systems should also be a minimum of 20 feet from any cut-face slopes present on a site to avoid surfacing of treated effluent. This is a particular construction to heavily sloped sites.

Table 1.4: DOH required setbacks for wastewater systems per HAR 11-62.

Features	Treatment Unit (ft)	Seepage Pit (ft)	Soil Absorption System (ft)
Structure Wall Line	5	5	5
Property Line	5	9	5
Surface Water Body	50	50	50
Large Trees	5	10	10
Municipal Water Supply Well	1000	1000	1000

#### 1.4.2 Site Slopes

Slopes vary from site to site but the project as a whole has roughly a 10% grade (Appendix D). This is likely to affect the constructability of absorption beds as a method of wastewater disposal. Per HAR

1 11-62-34, absorption beds shall not be installed on land with a slope gradient greater than 8%, while absorption trenches are permitted on a slope of up to 12%.

### 1.4.3 Traffic Area

It is generally not good practice to install an IWS under a trafficked or otherwise concreted area. The presence of concrete or traffic compresses the soil in distribution systems and affects the accessibility of the system for maintenance. However, it is sometimes unavoidable on particularly spatially-constrained properties. In this event, a system may be installed underneath a driveway or patio provided the system is designed to that end and traffic rated treatment components are used. These may include products such as concrete septic tanks and/or H-20 traffic related chambered disposal beds.

### 1.4.4 Site Geology

The US Geology Survey was consulted for site soils information (Appendix E). The site is principally composed of Nā'ālehu medial silty clay loam and Puueo-Nā'ālehu complex. The surface of both compositions features silty loam, but the Puueo-Nā'ālehu complex gives way to lithic bedrock at a depth of approximately 20-40 inches.

This data was reinforced by the boring logs from a 2012 Ka'ū Gymnasium Foundation Investigation by Hirata & Associates and a 2021 Geotechnical Data Report by Yogi Kwong Engineers that found fresh to moderately weathered basalt extending to a depth of 15-25 feet.

From Hirata & Associates (Appendix F):

*“The surface soil consisted of brown clayey silt derived from volcanic ash. Although the clayey silt/volcanic ash encountered in our borings appeared to be in a firm to medium stiff condition, laboratory testing indicated high compressibility characteristics. Underlying the surface volcanic ash at depths ranging from about 6 inches to 4.5 feet was gray, slightly to moderately weathered basalt. The basalt was in a medium hard to hard condition and extended to the maximum depths drilled (24.5 ft). A cavity was encountered within the basalt stratum in a boring at depths of about 11 feet, extending down to 14 feet”*

From Yogi Kwong Engineers (Appendix G):

*Basalt lava flows were encountered underlying the Fill or Tephra Deposits at an initial depth ranging from approximately 1.0 to 5.5 feet bgs through the explored depths of approximately 15.0 to 25.1 feet bgs. The encountered basalt lava flows ranged from fresh to slightly*

1 *weathered, medium hard to hard, intensely to occasionally fractured, and moderately vesicular to scoriaceous.*

The underlying basalt found at the site will significantly increase the size and installation cost of IWS. Further, it will be important to exercise caution during excavation due to the potential to encounter underground cavities and lava tubes.

### 1.4.5 Percolation Test Results

IWS sizing is based on the percolation rate of the receiving soil. Percolation rates were estimated for the Pāhala community by two methods (Table 1.5):

- Preliminary percolation tests were conducted to a depth of 2-4 feet at four sites distributed across the project (Appendix H). A tightly bonded gray basalt and volcanic ash soil layer was encountered in three of the four tests limiting the depth of the test.
- 2012 records of percolation testing at the local Ka'ū Gymnasium were consulted (Appendix D). Similarly, gray basalt was encountered at a depth of 1-4 feet, however holes were drilled to a depth of five feet.

Table 1.5: Percolation test results

Measure	2022 EPI Pāhala LLC Replacement PER (min/in)	2012 Hirata & Associates Ka'ū Gymnasium Foundation Investigation (min/in)
Test 1	10 @ 4 ft	8.5 @ 5 ft
Test 2	10 @ 2 ft	18.5 @ 5 ft
Test 3	4 @ 2.5 ft	23 @ 5 ft
Test 4	10 @ 3 ft	16.5 @ 5 ft
Test 5	-	8.4 @ 5 ft

IWS traditionally take the form of a seepage pit or absorption field. Absorption fields disperse treated wastewater over a larger area using a buried network of gravity fed perforated pipes. Seepage pits, on the other hand, are deep holes, extending downward to achieve increased absorption area instead of horizontally. Absorption bed and seepage pit sizing for a typical three-bedroom home varies significantly with the percolation rate found on each property (Table 1.6).

Table 1.6: Percolation test results

Percolation Rate (min/in)	4	12	20
Infiltration Area Required (ft <sup>2</sup> )	345	525	630
Possible Absorption Field Length (ft) (W = 15 ft)	23	35	42
Possible Seepage Pit Dimension (Diameter = 6 ft)	12	19	22
Septic Tank Area Required (ft <sup>2</sup> )	60	60	60
Total Footprint with Absorption Field (ft <sup>2</sup> )	480	660	765
Total Footprint with Seepage Pit (ft <sup>2</sup> )	120	120	120

### 1.4.6 Proximity to Bodies of Water

An assessment for proximity to bodies of water found that all 170 of the properties in the Pāhala community exceed all required minimum DOH setbacks, avoiding any limitations to IWS installations (Table 1.7).

Table 1.7: Proximity to bodies of water for properties in Pāhala with an existing cesspool from the Hawai'i Risk Prioritization Tool (Mezzacapo & Shuler, 2021).

Measure	Min	Med	Max	DOH Setback
Distance to Surface Water (ft)	400	1145	2073	50
Distance to Groundwater (ft)	715	882	964	3
Distance to Municipal Well (ft)	1155	2952	4536	1000

### 1.4.7 Accessibility

The installation of an IWS can be a relatively invasive process requiring large equipment like excavators and cranes. Accommodating this equipment often requires the destruction of fencing, existing landscaping, and in some cases small structures. Building footprints as well as overhanging soffits must be considered in the design stage when approximating access path widths and selecting

appropriate treatment system designs. Access should be considered for installation as well as future maintenance activities. Opportunities to resolve access issues include:

- **IWS Placement:** Front-yard installations are recommended for homes without sufficient path widths to accommodate equipment access into the backyard.
- **Lightweight or Cast-in-Place Technologies:** The use of a crane can be avoided by specifying cast-in-place concrete septic tanks instead of precast varieties for particularly inaccessible locations. Alternatively, plastic and fiberglass offer lightweight alternatives for simplified installation.
- **Alternate Access Routes:** A property backyard may be accessed from a neighbors property by temporarily removing a fence.

### 1.4.8 Landowner Engagement

The County of Hawai'i has held meetings in both Pāhala and Nāʻālehu in order to engage directly with community members about the status of the cesspool closure projects. Most recently, with the approval of the revised AOC, the County reinforced its commitment to the community and actively sought their engagement and support of the project. For example, all meetings follow important cultural protocols and are co-led by residents who are respected and speak on behalf of the community. Moreover, all meetings actively seek input from the community and provide updates on the project via PowerPoint presentations that provide a clear overview of new developments in the project. The following timeline provides an overview of important meetings and milestones that occurred in the past year:

- In March 2022, a community meeting was held in Pāhala to gauge potential for community support. The EPA acknowledged revisions are needed to the 2017 AOC and reopens negotiations with the County.
- In June 2022, the County signed the Proposed Revised AOC. DEM engages consultants.
- In July 2022, the EPA signed the Revised AOC and circulated a draft for public comment. DEM begins work on feasibility studies, public presentation, and the project website.
- On August 12, 2022, the website was launched.
- August 22, 2022 is the effective date of the final Revised AOC.
- On October 6, the first public meeting to discuss the final Revised AOC was convened.
- In February 2023, a meeting was held in Pāhala to share the progress of the County's most recent semi-annual report to the EPA. An update of the Feasibility Evaluation Report and the Preliminary Engineering Report are also shared via PowerPoint

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presentation.

- The County recommends to the community by mailing notices to community members who have signed in. Notices are also posted to several local newspapers, the County webpage and the two community centers in Pāhala and Nāʻālehu.

Community buy-in is seen as especially important because the successful completion of this project necessitates that homeowners cooperate in the design and permitting process, the preparation of a simple floor plan, and of course during the construction process for access permission. On the surface, this project is a win for homeowners to be included in the project and the community. Their household cesspool or sewer connection will be upgraded to comply with the cesspool replacement mandate with government funding, a deal that most homeowners in Hawai'i are not being offered. However, there are a number of sacrifices that homeowners will face:

- New Operations and Maintenance Costs:** Homeowners in Pāhala Community, currently connected to functioning individual cesspools, don't currently pay annual operation or maintenance costs. Homeowners connected to the LCC are currently paying a reduced sewer fee representing about 50% of the standard sewer rate (Hawai'i County, 2023). This project will either introduce a full-rate monthly sewer fee or a biannual bill for private maintenance of their new system. It is quite likely that some homeowners don't see a need to upgrade from the current system. However, initial opposition to the project has largely been addressed through the County's engagement efforts.
- Property Destruction:** Many homeowners are protective of their property. Permission is not trivial for a project that poses a risk to their landscaping, fences, and buildings. Homeowner satisfaction with the project will be closely linked with the speed and care with which their properties are upgraded and restored to pre-construction conditions or better.

1.4.9 Availability of Resources and Contractors

As an island state, Hawai'i faces unique challenges when it comes to the availability of IWS. The entire IWS market in Hawai'i grew from 1192 units per year in 2018 to 1414 units per year in 2021. Based on permits issued, sourcing the 170 treatment units required for this project will require an increase in statewide treatment unit supply and workforce size by 14% (DOH, 2022). This will require advanced planning to overcome this logistic hurdle.

Locally-based septic manufacturers include Jensen Precast on O'ahu and Chemtainer on Hawai'i Island. At present, Jensen produces approximately 40 concrete septic tanks per year. With that said, the company has stated that they have the capacity to build one septic tank per day to keep

1

up with the needs of the project. The bottleneck to their current production rate has been cited as a shortage of inspectors, contractors, and engineers in the local market. Chemtainer manufactures polyethylene septic systems on Hawai'i Island but was unwilling to share their annual production rates. Mainland treatment system manufacturers like Orenco and Infiltrator have significantly higher production rates but will also face increased shipping costs in transporting the units to Hawai'i.

In either scenario, it will be important to work with manufacturers from early in the design stage to reduce barriers and meet deadlines, and even then, it is possible that multiple suppliers will be required.

## Section 2 Project Timeline

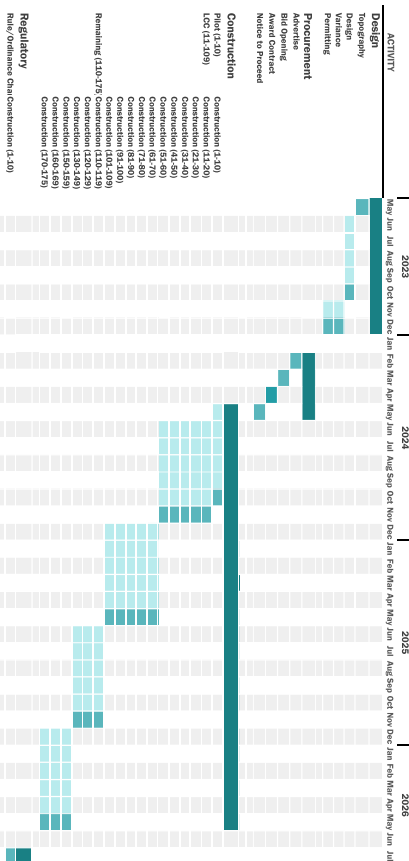
### 2.1 Project Schedule

Phasing for this project should reflect deadlines as well as workforce and product availability.

The AOC requires that the LCC be decommissioned and the 109 connected properties upgraded by the end of 2026, though the preliminary timeline projects completion by 2025. A 10-site pilot consisting of LCC connected properties is expected to be permitted and constructed by the end of 2023. Lessons learned will be integrated into the design and permitting of the next phase of 99 LCC connected properties, which will be completed before the end of 2024. Finally, the properties currently connected to individual cesspools should be permitted and constructed towards the end of 2024 and into 2025.

For a single contractor, cesspools the IWS can be installed at a rate of one site per week on simple sites per week on simple sites, and one site every two weeks where soil conditions and accessibility are less favorable. In order to increase the pace of the project, multiple contractors will be awarded construction contracts in 10-lot bundles that may be completed simultaneously (Table 2.1).

Table 2.1: Pahala LCC Replacement Schedule



### 2.2 Typical IWS Permitting and Construction process

The permitting and construction process for IWS is largely standardized in the deliverables and timelines. First, the engineer prepares and submits a design package for DOH approval, which once received initiates the construction process. Once constructed, the engineer inspects the finished treatment system and files a final inspection report with the DOH. If everything is in order, the DOH returns an Approval for Use letter.

The Pahala LCC Replacement project will deviate from the standard process in three principal ways:

- **Properties to be Permitted in Bulk:** The DOH has expressed the capacity to receive packages in groups of 10 or more properties. This will serve to expedite DOH review process.
- **Variance Requests:** Due to preliminary data on percolation rates and property sizing, it's expected that DOH variances to setback constraints will be required to accommodate absorption fields. Where space is still overly constrained, DOH variances will be required to allow for seepage pit installation. The procedure to receive a variance requires the rejection of the original design package and a subsequent variance application and review. This additional step usually adds approximately two months to the permitting process following design package review but the DOH has expressed willingness to allow the request for variance to be included with the initial design package.
- **Optional Design:** The geological conditions present at a given site will not be known until construction on that site commences. These conditions will have a significant impact on the disposal system design. To accommodate this uncertainty in the design and facilitate permitting, an optional design package shall be submitted to the DOH to allow for a field determination according to the actual percolation rates and soil composition encountered.

The timeline and deliverables for this procedure is outlined on the following page (Table 2.2).



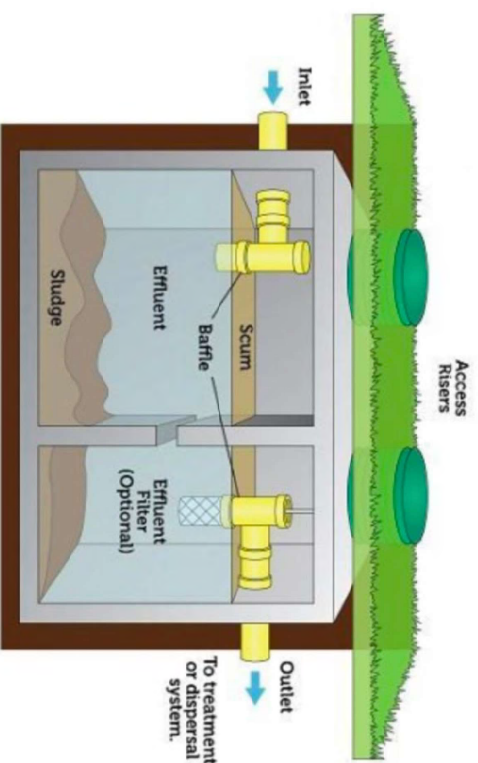
Table 2.2: Hawaii Permitting and Construction Process

Step	Timeline	Party	Deliverables
Design Package + Variance Application Preparation	4-6 months	Engineer	<ul style="list-style-type: none"> <li>• Site Evaluation/Percolation Test Result</li> <li>• IWS Calculation</li> <li>• Parcel map</li> <li>• Plot Plan</li> <li>• Simple Building Floor Plan for number of bedroom determination</li> <li>• IWS Layout</li> <li>• IWS Profile</li> <li>• IWS Details</li> <li>• Owner Certification form</li> <li>• \$100 IWS Application Fee</li> </ul>
Design Package Review	2-4 weeks	DOH	Letter of Approval
Variance Application Review	2 months	DOH	Letter of Approval for Construction
Construction	1-2 weeks/property	Contractor	Completed IWS
Inspection	1 day/property	Engineer	<ul style="list-style-type: none"> <li>• Final Inspection Report (FIR)</li> <li>• As-Builts</li> </ul>
FIR Review	1 month	DOH	Approval for Use

### Section 3 Treatment Technologies 3.1 Septic Tanks

Septic tanks are the most common conversion treatment technology in Hawaii. IWS contractors are familiar with the installation process and they operate without the need for electricity. A septic tank is an underground chamber made of concrete, fiberglass, or plastic, used for treating and disposing of household wastewater. The tank is filled with a mixture of wastewater and anaerobic bacteria, which break down the waste and separate it into three layers: a top layer of scum, a middle layer of liquid effluent, and a bottom layer of sludge (Figure 3.1). The liquid effluent flows out of the tank and into a means of disposal, where it is further treated and dispersed into the soil. The sludge and scum remain in the tank, and must be periodically pumped out by a professional septic service approximately once every two years, depending on usage.

Figure 3.1: Side-view of a typical two-chambered septic tank (Carollo, 2021).



Residential septic systems on their own remove about half of the organics in the wastewater stream and none of the nitrogen. The overall level of treatment is thought to be much higher when well-maintained and operating with a fully functional absorption bed (Table 3.1).

Table 3.1: Typical septic system performance in Hawaii<sup>1</sup> (Carollo, 2021).

Contaminant	Typical Raw Residential Wastewater <sup>1</sup>	Typical Septic Tank Effluent Quality <sup>2</sup>	Typical Effluent Quality Following Soil Absorption System <sup>2</sup>
Total Nitrogen, mg N/L <sup>4</sup>	14-40	39-82	~1
TSS (mg/L)	100-400	49-161	~4
BOD (mg/L)	100-400	132-217	<30
Fecal Coliform, MPN/100ml <sup>3</sup>	~10 <sup>6</sup>	1-10 <sup>5</sup>	~13

<sup>1</sup> From Table 2.1 (Water Resources Center (WTRC) University of Hawaii-Manoa, 2008).

<sup>2</sup> From Table 4.1 in the Onsite Wastewater Treatment Survey and Assessment Study (WTRC, 2008).

<sup>3</sup> MPN/100mL = most probably number per 100 milliliters.

There are several septic tank providers commonly used in Hawaii<sup>1</sup> offering tanks of a variety of price points and materials. Septic tanks can be made from concrete, plastic, and fiberglass (Figure 3.2), each of which having its own set of pros and cons (Table 3.2). Where a septic tank is located beneath a vehicular traffic area, a traffic-rated concrete septic tank can be used or a structural concrete slab designed for H-20 loading spanning a non-traffic tank may be used.

Figure 3.2: Common septic tank materials and shapes in Hawaii<sup>1</sup> (Carollo, 2021).

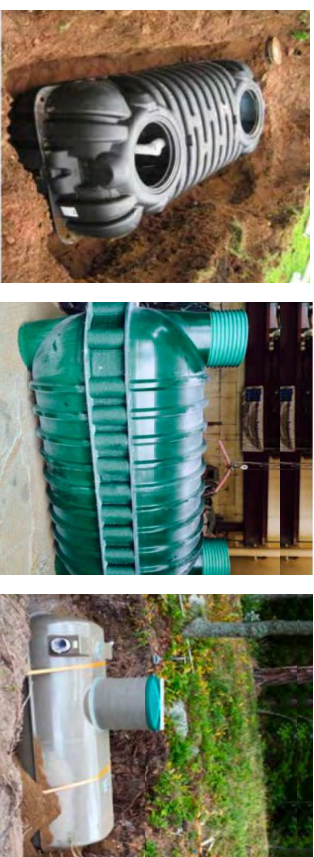


Rectangular, Concrete Tank

Oval, Concrete Tank

Cylindrical, Concrete Tank

3



Rectangular, Plastic Tank

Fiberglass, Oval Tank

Steel, Horizontal, Cylindrical Tank

Table 3.2: Advantages and Disadvantages of Septic Tank Materials (Carollo, 2021).

Septic Tank Material	Advantages	Disadvantages
<b>Concrete</b>	<ul style="list-style-type: none"> <li>Durable</li> <li>Less susceptible to collapse and floatation</li> <li>May be cast-in-place for custom shape</li> </ul>	<ul style="list-style-type: none"> <li>Precast tanks can be more expensive than plastic or FRP due to shipping and installation costs</li> <li>Typically requires use of a crane for installation</li> <li>Concrete may corrode over time due to acidic sewer gases</li> </ul>
<b>Plastic (polyethylene)</b>	<ul style="list-style-type: none"> <li>Less expensive than precast concrete tanks (lower shipping and installation costs)</li> <li>Variety of manufacturers and sizes for desired footprint</li> <li>Plastics are typically resistant to corrosion</li> <li>May not require a crane for installation</li> </ul>	<ul style="list-style-type: none"> <li>Plastic tanks may deform depending upon quality of the plastic and potential structural weaknesses of the material</li> <li>If not installed properly, plastic tanks can float if flooded</li> </ul>
<b>Fiberglass-reinforced polyester (FRP)</b>	<ul style="list-style-type: none"> <li>Less expensive than precast concrete tanks (lower shipping and installation costs)</li> <li>Variety of manufacturers and sizes for desired footprint</li> <li>Fiberglass is typically resistant to corrosion</li> <li>May not require a crane for installation</li> <li>More rigid and sturdy than plastic tanks</li> </ul>	<ul style="list-style-type: none"> <li>Less structurally strong than concrete tanks</li> <li>If not installed properly, fiberglass tanks can float if flooded</li> </ul>

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Ultimately, the choice of septic tank material will depend on availability, budget, and site constraints (Table 3.3). At a minimum, septic tanks in Hawai'i must comply with International Association of Plumbing and Mechanical Officials (IAPMO) material and property standards for septic tanks. Further, sizing and installation criteria are regulated by HAR 11-62-33. The minimum septic tank capacity is 1,000 gallons for a household of 4 bedrooms or less and 1250 gallons minimum for households of 5 bedrooms. Septic tanks serving households greater than 5 bedrooms will require a variance from the DOH.

Table 3.3: Common single family home septic tank products in Hawai'i.

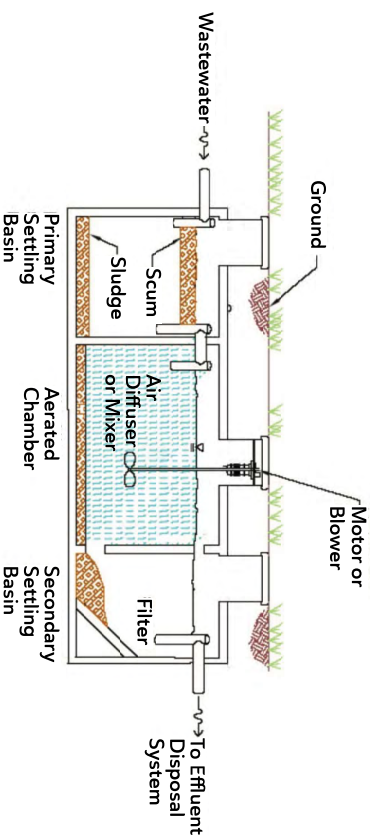
Product	Material	Traffic Rated	Capacity (Gal)	Length (in)	Width (in)	Height (in)	Weight (lbs)	Local List Price
Chem-tainer	HDPE	No	1250	96	58	62	400	\$3,189
Infiltrator (via Ferguson)	PP	No	1287	127	62.2	54.7	320	\$2,863
Orenco (via Custom Concrete & Septic)	DCPD	No	1500	168	72	64.5	620	\$6,850
Jensen Precast	Concrete	Yes	1250	138	70	57	16,700	\$6,850

### 3.2 Aerobic Treatment Units

An ATU is a type of wastewater treatment system that utilizes oxygen and microorganisms to break down and treat household sewage. ATUs come in many proprietary shapes and sizes but at a minimum, systems typically include an aeration tank, where the wastewater is blended with air or oxygen while suspended microorganisms are able to grow and thrive and a settlement tank, where solids and other debris are allowed to settle out of the water (Figure 3.3).

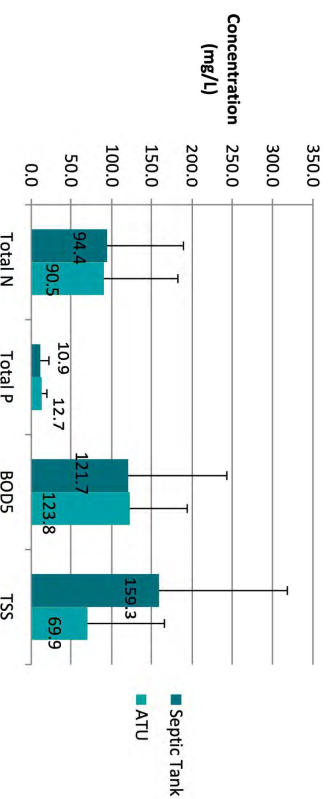
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Figure 3.3: Side-view of typical aerobic treatment unit (Carollo, 2021)



The added complexity of the ATU system is responsible for higher treatment organic and nutrient removal rates that make ATUs optimal for operation upstream of sensitive receiving environments. Conversely, the added mechanical and electrical componentry leads to more frequent system downtime. Without an effective maintenance strategy, the performance of ATUs in Hawai'i has been proven to be similar to septic tanks (Figure 3.4). ATUs are less affordable than septic tanks, as they have a higher up-front cost and a much higher O&M cost due to the requirement of contracting a certified wastewater treatment operator by the DOH. The ATU also expect a shorter service lifetime than septic systems due to its mechanical components (Babcock, 2019).

Figure 3.4: Effluent quality of septic systems vs. ATUs in Hawai'i (Babcock, 2012)



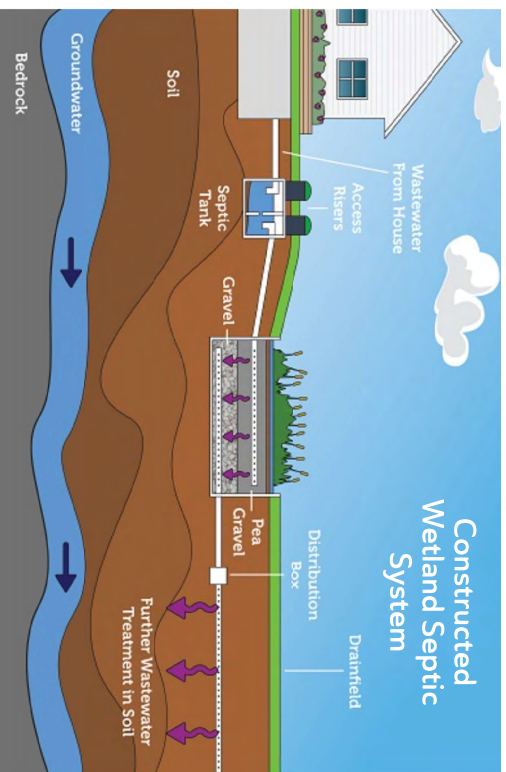
### 3.3 Passive Biofilters or Constructed Wetlands

A passive biofilter is a type of IWS that uses natural processes to treat and purify wastewater following a septic tank. It typically consists of a filter bed filled with a mixture of gravel, sand, and organic matter (such as wood chips or coconut fiber) that provides a habitat for microorganisms. These microorganisms break down the pollutants in the wastewater as it flows by gravity through the filter bed. The treated wastewater is then collected and can be safely discharged into the environment or reused for irrigation. Passive biofilters do not require electricity or mechanical parts, making them low-maintenance and cost-effective.

Constructed Wetlands are very similar to passive biofilters except they are planted with native flora (Figure 3.5). These systems achieve high levels of nitrogen removal prior to disposal and often have a positive aesthetic impact on the site. However, they may require more space. The vegetation must also be regularly harvested to promote continued nitrogen removal and prevent clogging of the system.

Both of these systems are considered secondary treatment works which the DOH requires to be operated and maintained by a certified wastewater treatment operator. Aside from the higher initial installation cost, the O&M cost can be up to 40 times that of the traditional IWS.

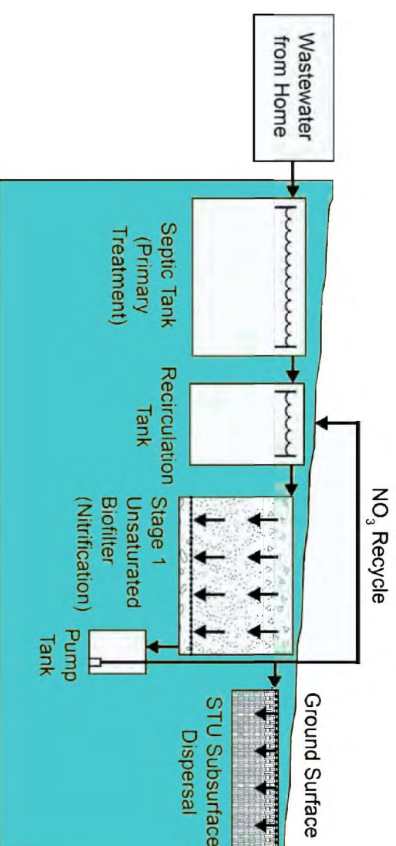
Figure 3.5: Side-view of a typical constructed wetland following a septic tank (EPA, 2023)



### 3.4 Recirculating Biofilter

Recirculating biofilters are very similar to passive biofilters except the water is recirculated through the biofilter multiple times (Figure 3.6). On the first pass through the biofilter, ammonia is converted to Nitrate through nitrification. Returning this nitrified wastewater to the anoxic recirculation tank provides favorable conditions for denitrification, converting nitrate to inert nitrogen gas for total nitrogen (TN) removal. Expected TN removal rates vary from 50-70% before discharge. This improved treatment comes at the cost of increased installation cost, maintenance requirements, and electricity demand.

Figure 3.6: Side-view of a typical recirculating biofilter following a septic tank (Babcock, 2019)



In response to a request for a provisional design request made to several large-scale treatment product manufacturers, E-Z Treat provided an estimate and provisional design for their recirculating synthetic media filter units to serve the Pahala Community. The unit adds an additional \$7,500 to \$8,500 per household of material cost to a traditional septic system and improves effluent to meet stringent NSF 350 wastewater reuse standards. This solution is presented Appendix 1. Maintenance demands are cited as an annual visual inspection of the system as there are no chemicals to add, filters to clean, or aerators to replace. However, similar to many ATUs, there's limited precedent for the systems installation and performance in the State of Hawaii".

### 3.5 Composting Toilets

**3** A composting toilet is a type of toilet that uses a combination of heat and aerobic microbial action to break down human waste into a nutrient-rich compost. Composting toilets typically come in three varieties:

- **Individual Composting Toilets:** These wasteless toilets combine human waste with bulking material such as sawdust, leaves, or peat moss in a single chamber (Figure 3.7). The waste dries and composts in-situ until the container fills and is emptied into an outdoor composting pile to complete the composting process. Some composting toilets also use electrical or mechanical systems, such as an exhaust fan, to aid in the breakdown of waste and limit odors. These toilets do not require water or a connection to a sewer system, making them an eco-friendly alternative to traditional flush toilets.

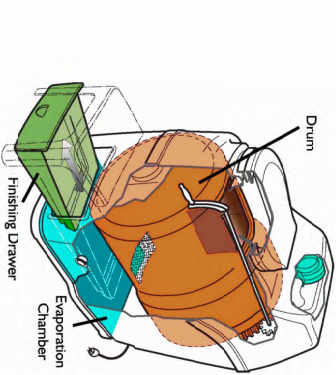


Figure 3.7: Component view of a typical individual composting toilet (Sun-Mar, 2023)

- **Urine Diverting Toilets:** Urine diverting toilets typically have two chambers: one for urine and one for solid waste (Figure 4.8). The urine is typically stored and used as a fertilizer, while the solid waste is broken down into compost.

Figure 3.8: Top view of a typical urine separating toilet (Separett, 2023)



- **Central Composting Units:** These composters are installed outside the home and work in conjunction with pint-flush toilets. Toilet blackwater (along with a scoop of wood chips) flows through a 4" gravity sewer to the composter where its introduced to a horizontal drum that collects the solids and allows liquids to drain into the base of the enclosure (Figure 4.9). The drum must be rotated in the forward direction once every two days to fluff the retained solids and rotated in the reverse direction once every two months to drop the retained solids into an aging drawer where the composting process is completed. The outputs are a drawer of composted manure and the drained liquid. A single central composting unit can serve an entire home and solid wastes and any odors are kept entirely outdoors.

Figure 3.9: Top view of a central composting unit (Sun-Mar, 2023)



### 3.6 Incineration Toilets

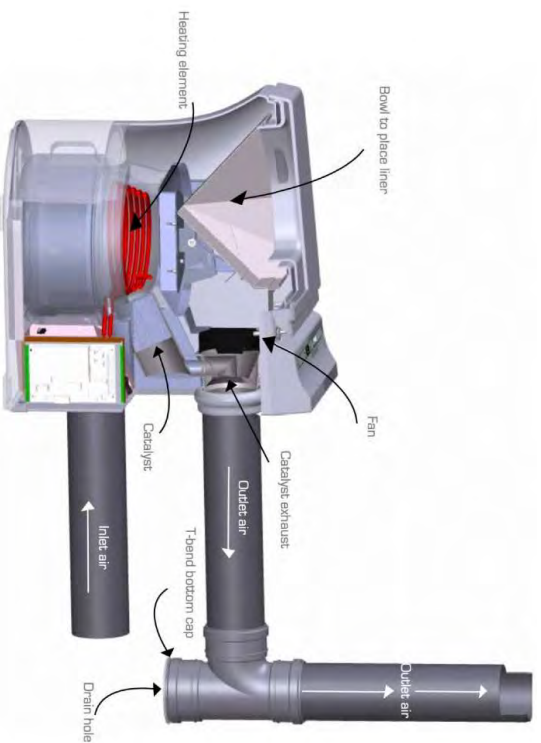
An incineration toilet, also known as a thermal toilet, is a type of toilet that uses heat to turn human waste into ash (Figure 3.10). The waste is placed into a combustion chamber where it is heated to high temperatures, typically around 800-1000 degrees Fahrenheit, by a gas or electric burner. This process kills any harmful bacteria and viruses and reduces the volume of waste by up to 90%. The ash that is left can be safely disposed of in a landfill or used as a fertilizer. Incineration toilets do not

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require any water, making them suitable for remote locations or areas with limited water resources. They also produce very little smell and have no need for a septic system or connection to a sewer. However, they do require electricity or gas to operate, and can be relatively expensive to purchase and maintain. Further, they do not comprise a complete treatment solution. While the remaining household gray water can be disposed of with minimal treatment, a septic tank or other treatment unit is still required to treat kitchen blackwater, eliminating the economic advantage.

No matter the variety, composting toilets and incineration toilet technologies are significantly cheaper than septic tanks and other IWS. Unfortunately, they do not comprise a complete treatment solution. While the remaining household gray water can be disposed of with minimal treatment, a septic tank or other treatment unit is still required to treat kitchen blackwater, eliminating the economic advantage.

Figure 3.10: Side view of a typical incinerating toilet (Cinderella, 2023)



## 4

## Section 4 Disposal Technologies

### 4.1 Absorption beds

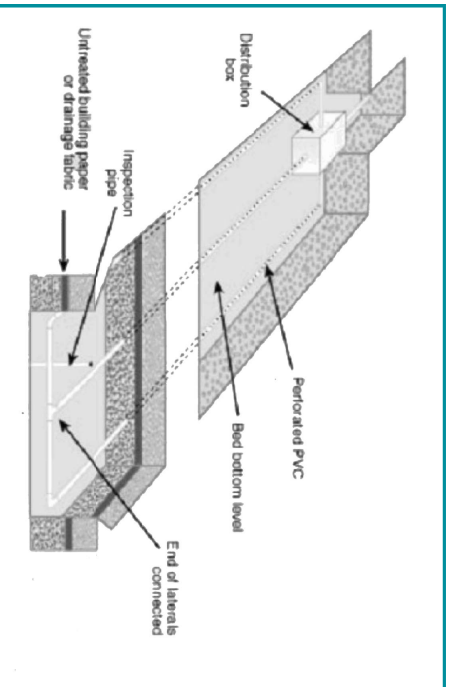
Absorption beds are the most common form of IWS installed in Hawai'i today. They consist of a network of perforated pipes, each a maximum of 100 feet long and laid in trenches 1.5-3 feet below the finished grade 4-6 feet apart (Figure 4.1). Each line is laid level to allow the gravity dispersal of treated effluent through the length of the pipe before it filters out and percolates down into the soil. A minimum of 6 inches of gravel is provided below each pipe. If the percolation rate is faster than one minute per inch, a depth of 3-foot soil replacement shall be installed to underlay the entire absorption bed. Soil replacement shall be washed #4 sand or cinder-soil mix with a percolation rate not faster than one minute per inch.

These systems are easy to maintain when following an effective treatment system and microorganisms in the soil offer an added degree of treatment to the effluent as it filters through the upper oxic layers of the soil matrix. Absorption beds however have a significant space requirement with current Hawaiian regulations requiring a minimum of 350 sq ft for a 4-bedroom home. This space requirement increases with decreasing hydraulic conductivity of the soil as discussed in Section 4. Additionally, absorption beds can only be installed on a grade of less than 8%.

While conventional perforated pipe adsorption beds are not traffic rated, companies such as Infiltrator offer a chambered dispersion product with an H-20 load rating that can also reduce the absorption bed space requirement by 17%.

**Usage Case:** Used on typical lots without spatial, groundwater level, grade, or percolation rate constraints.

Figure 4.1: Typical absorption field installed following a septic tank (Babcock, 2019)



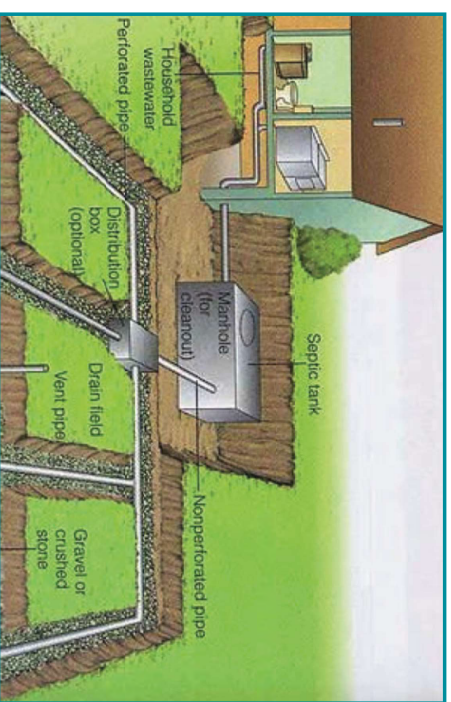
#### 4.2 Absorption trench

An absorption trench is a type of subsurface wastewater disposal system that utilizes a trench filled with gravel or other porous material to filter and distribute household wastewater into the ground (Figure 4.2). Wastewater is distributed into the trench through a network of pipes, typically made of PVC or other durable materials. The gravel in the trench acts as a natural filter, allowing the water to slowly seep into the surrounding soil while also removing impurities with adsorbed beneficial bacteria. The trench may be lined with a layer of filter fabric to prevent the gravel from becoming clogged with soil or other debris.

The percolation area of the system is calculated as the combined bottom area of the trenches. Individual trenches must be between 18 and 36 inches, with trenches more than 6 feet apart and suitable for installation on slopes up to 12%.

**Usage Case:** Used on steeper lots with grades of 8-12%.

Figure 4.2: Typical absorption trench system installed following a septic tank (Carollo, 2021).



#### 4.3 Combined Treatment and Disposal System

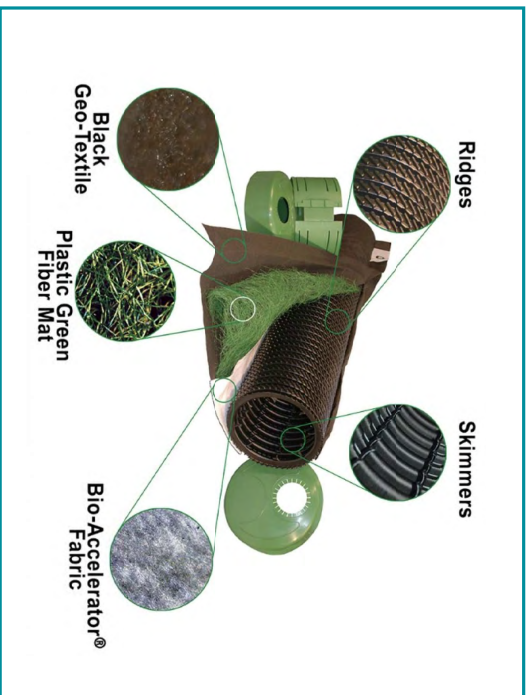
Combined Treatment and Disposal Systems (CTDS) combine chambered absorption beds with geotextile fabric, and porous media to perform treatment and disposal in a single operation.

One example of these systems consists of special 10 ft long by 12" diameter pipes embedded in a specific type of sand. The pipes contain ridges, perforations with skimmers, geotextile fabric, green plastic fiber mat, and fabric to support biofilm development (Figure 4.3). These components facilitate the distribution of water and development of a biofilm along the length of the pipes. Without using any electricity or replacement media, CTDS following a traditional septic tank can offer BOD, TSS, and ammonia removal on par with aerobic treatment units.

Unfortunately, there is little precedent for the use of CTDS in Hawai'i to quantify their performance, lifespan, and design requirements for the State of Hawai'i. Furthermore, this type of system is considered a secondary treatment system which requires a DOH certified operator to perform O&M.

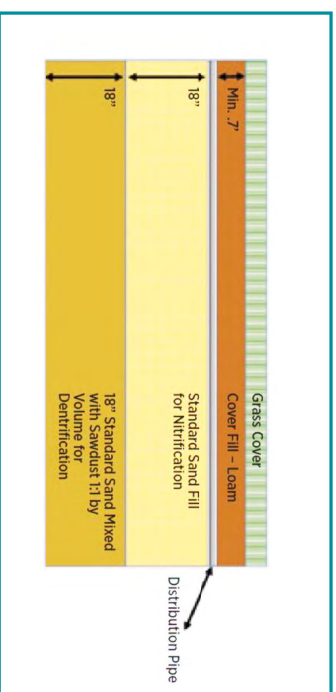
**Usage Case:** Used on lots with strict effluent quality requirements.

Figure 4.3: An example of a proprietary fixed-film CTDS (Infiltrator, 2023).



An alternative CTDS involves a “layer cake” filtration system of 18 inches of sand and 18 inches of a sand and sawdust mixture (Figure 4.4). Aerobic processes take place in the oxic sand layer while an anoxic environment is created in the sawdust layer. This sequence of oxic and anoxic stages promotes TN removal rates from 50-90%.

Figure 4.4: An example of a non-proprietary “layer cake” CTDS (Babcock, 2019).



#### 4.4 Seepage pit

Seepage pits are a vertical means of achieving the percolation area requirements for a disposal system. These systems typically consist of a 15-30-foot-deep pit lined with stacked precast perforated concrete rings or CMUs, to an internal diameter of 6-8 ft. Seepage pits are both less area intensive and less expensive than absorption beds, if converted from an existing cesspool (Table 9.1). A seepage pit must include a cover which extends at least 12 inches beyond the seepage pit excavation or over a provided concrete lining. An access hatch must be provided in the concrete cover to allow inspection and maintenance of the pit. The seepage pit may be designed to be traffic rated by providing the sufficient strength required in the design of the concrete lining and cover. The effective area of the seepage pit is equal to the vertical wall area corresponding to the effective depth of the pit. Slow percolation rates translate to a larger required absorption area and deeper pit (Appendix H).

While seepage pits are an approved means of disposal in Hawai'i, they are often only permitted when it can be demonstrated that an alternative means of disposal was not possible. i.e., insufficient land area, steep terrain (>12%) or very slow percolation rates (<60 min/inch). Where slow percolation rates present, seepage pits will need to be dug through the basalt rock layer to reach more porous soils or a variance will be required from HAR 11-62-34 d(1)b:



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Seepage pits shall not be constructed in soils having a percolation rate slower than ten minutes per inch (weighted average) or where rapid percolation through such soils may result in contamination of water-bearing formations or surface water.

**Usage Case:** Used on highly spatially constrained, slope constrained, or geologically constrained lots where sufficient percolation rates can be achieved.

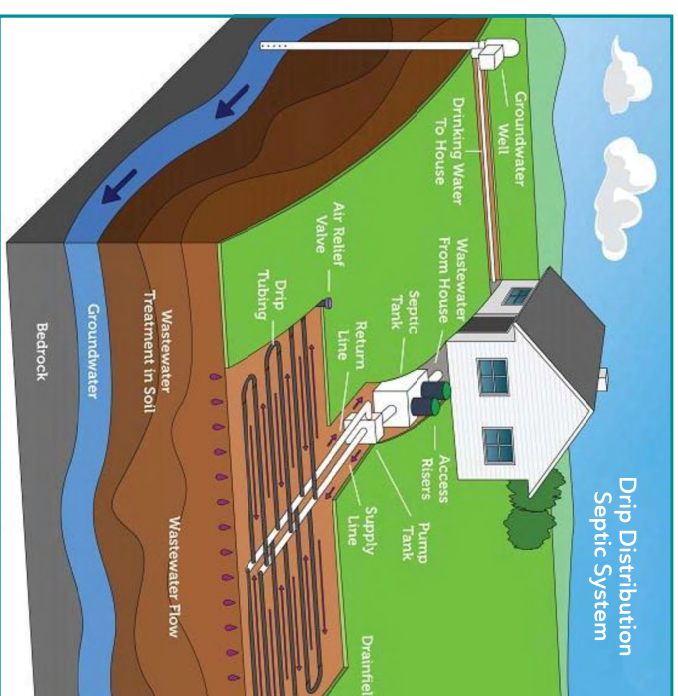
#### 4.5 Subsurface drip irrigation

Subsurface drip irrigation is an extremely water efficient means of wastewater disposal, slowly delivering effluent into the shallow subsurface and biologically active root zone of plants, promoting efficient uptake of nutrients by the microbes and plants in the soil medium (Figure 4.5). Installation of subsurface systems often requires less disruption to the absorption area though in Hawaii, they traditionally cost more. Regular maintenance is required to ensure the continued operation of the irrigation pump and manage biofouling in the distribution lines and the dripper clogs it causes. Disinfection is required following aerobic treatment as an added measure against biofouling and clogging of the distribution lines.

**Usage Case:** Used on lots that prioritize wastewater reuse, are served by an ATU, and have a robust maintenance strategy.

4

Figure 4.5: Typical subsurface drip irrigation installed following a septic tank (EPA, 2023)



#### 4.6 Greywater system

Greywater systems are systems that collect and reuse wastewater from sources such as sinks, showers, and laundry machines. The collected water is then treated and can be used for irrigation or other non-potable uses such as toilet flushing. The use of separated gray water systems can help reduce the load on wastewater treatment units and conserve water through reuse.

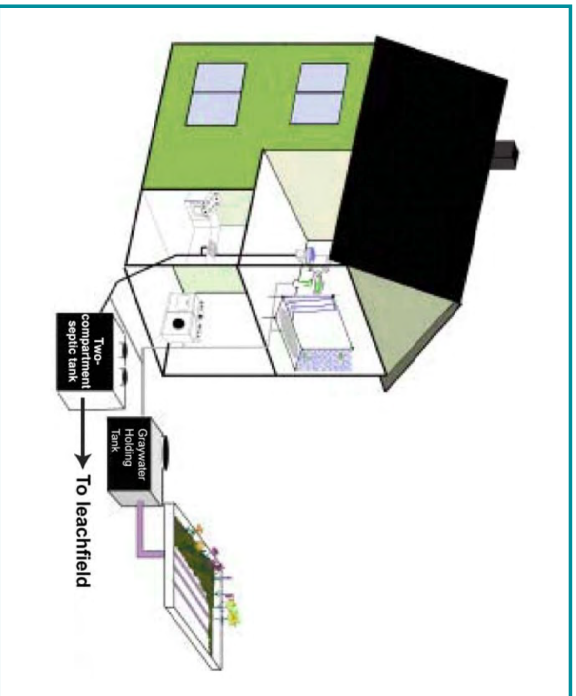
In Hawaii, the use of greywater systems is regulated by the State Department of Health, which sets guidelines for the treatment and reuse of greywater. Gray water systems can vary in complexity and cost. Simple systems, such as diverting water from a clothes washer to a garden, can be relatively

## 4

inexpensive and easy to install (Figure 4.6). More complex systems may include treatment methods such as sand filtration, ultraviolet disinfection, or reverse osmosis. Overall, these systems are typically expensive to install and maintain as they are installed in addition to a traditional wastewater treatment system that's still required to treat household black water.

**Usage Case:** Used on lots with source separated plumbing that prioritize wastewater reuse.

Figure 4.6: Typical greywater reuse system installed in parallel with a septic tank (DOH, 2009)



## 5

## Section 5 System Design

### 5.1 IWS Selection

In 2019, Dr. Roger Babcock and the team at the Water Resources Research Center (WRRC) put together a report investigating the viability of cesspool upgrade options for 12,000 homes in upcountry Maui. In total, 38 options were evaluated, half of which used exclusively IWS methodologies, while the other half considered partial or full sewerage of the community. The most applicable are presented in the table below (Table 5.1). The lifetime net present value assessments were made over a 60-year period using a discount rate reflective of public sector investment (2.8%).

These treatment systems comprise a toolbox from which engineers can select site appropriate systems for individual property conditions. When making a selection, engineers should consider existing regulations, environmental concerns, site constraints, economics, and performance. Overall, each household IWS will cost \$30,000-\$100,000 to install and roughly \$1,000 per year to operate and maintain.

Based on the compiled data, this report points to the installation of traditional septic tanks with standard absorption beds. Where space and grading constraints prevent the installation of an absorption bed, the existing cesspool shall be repurposed as a seepage pit for disposal. This solution was selected for three reasons:

- Passive Operation:** The traditional septic IWS offers a passive operation with minimal O&M cost. While the ATUs offer the promise of improved performance, in practice in Hawaii<sup>1</sup>, the added mechanical and electrical complexity and the operator requirement results in higher than average O&M costs or facing the risk of falling into similar treatment performance comparable to septic tanks.
- Adaptive to Small Lots:** The option of disposing to seepage pits allow septic systems to be installed particularly on spatially and geographically constrained lots.
- Familiarity:** Hawaii's engineers, regulators, contractors, and septic pumpers are familiar with septic tanks, absorption beds, and seepage pits. The ATU and CTDS, on the other hand, are less known. Furthermore, the lack of certified wastewater operators throughout the State will result in higher cost and reduced performance for ATU and CTDS options.

**5** Table 5.1: An abridged selection of IWS options from cesspool replacement analysis of upcountry Maui community (Babcock, 2019)

Treatment	Disposal	Estimated Nitrogen Reduction	NPV Cost Per Property	O&M Burden	Usage Case			
					Effluent Criteria	Slope	Perc Rate (mm/m)	Area
Septic	Seepage Pit	10%	Low	Low	Low	>12%	<10	Low
	Absorption Field	47%	Low	Low	Low	<8%	<60	High
	Absorption Trench	47%	Low	Low	Low	<12%	<60	High
	Constructed Wetland	53%	Med	Med	Med	<8%	<60	High
	"Layer Cake" CTDS	55%	Med	Low	Med	<8%	<60	High
	Fixed-Film CTDS	78%	Low	Low	Low	<12%	<60	Med
Septic + Reclaiming Biofilter	Seepage Pit	47%	High	Med	Med	>12%	<10	Low
	Drip Irrigation	69%	Very High	Med	Strict			High
ATU	Absorption Field	84%	Low	Med	Strict	<8%	<60	High
	Absorption System	53%	Very High	High	Med	<8%	<60	High
ATU + Disinfection	Constructed Wetland	58%	Very High	High	Strict	<8%	<60	High
	Seepage Pit	50%	Very High	High	Med	>12%	<10	Low
	Drip Irrigation	71%	Very High	High	Strict			High

**R**

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A

## Appendix A - LCC Closure Properties



# Appendix B - Additional Households

Parcel ID (Close)	Additional Property(ies)	Owner	Address	Land Area (Acres)	# of Buildings	# of Bedrooms	Est. Value (\$)	Septic Tank	Abandonment Field	Yield (lb/In)	Remarks	Link
9-2-015-001		Ray & Myra Leitch	96-1329 Hubbard St	0.3177	1	3						
9-2-015-011		Robert Donato	96-1339 Hubbard St	0.3444	1	3						
9-2-015-016		Raymond Emilio	96-1339 Hubbard St	0.2986	1	3						
9-2-015-069		Brian Alvarado	96-1315 Irma St	0.2746	1	3						
9-2-015-010		Walter Smith	96-1301 Hubbard St	0.2855	1	3						
9-2-015-067		Louisa & Harold Prude	96-1338 Hubbard St	0.2928	1	3						
9-2-015-066		Carmita Herrera	96-1314 Hubbard St	0.241	1	3						
9-2-015-064		Jose Alvarez	96-1326 Hubbard St	0.241	1	3						
9-2-015-063		Rafael Melendez	96-1322 Hubbard St	0.241	1	3						
9-2-015-061		Guillermo	96-1324 Hubbard St	0.241	1	3						
9-2-015-060		Brinda Trivedi	96-1310 Hubbard St	0.215	1	3						
9-2-015-059		Luison Morales	96-1298 Hubbard St	0.2372	1	3						
9-2-015-031		Albert Delina	96-1298 Hubbard St	0.2609	1	3						
9-2-015-030		Carmita Melendez	96-1302 Irma St	0.271	1	3						
9-2-015-012		Amie Espinoza	96-1298 Hubbard St	0.2348	1	3						
9-2-015-011		Chris Kibber	96-1271 Hubbard St	0.238	1	3						
9-2-015-013		Patricia Pal	96-1259 Hubbard St	0.1833	1	3						
9-2-015-014		Rosa Navarro	96-1255 Hubbard St	0.1531	1	1						
9-2-015-002		Samir Moreno	96-1242 Hubbard St	0.1462	1	0						
9-2-015-005		Joyce Bhanu	96-1248 Hubbard St	0.277	1	3						
9-2-015-004		Jane Moore	96-1244 Hubbard St	0.255	1	3						
9-2-015-002		Madito Yamvo	96-1230 Hubbard St	0.227	1	3						
9-2-015-012		Humberto Lopez LLC	96-1231 Hubbard St	1.029	1							
9-2-009-044		Ernesto Olson	96-1231 Main St	0.4927	1							
9-2-015-011		Ernesto Olson	96-1208 Main St	0.2403	1	4						
9-2-003-016		Paul Campbell	185-2077 Main St	6.419	2							
9-2-015-023		Rodriguez	96-3189 Hubbard St	0.3437	1	3						
9-2-015-024		Rodriguez	96-3171 Hubbard St	0.301	1	3						
9-2-015-025		Brian Albert	96-3178 Hubbard St	0.4979	1	3						
9-2-015-026		Brian Beyer	96-3175 Hubbard St	0.316	1	3						
9-2-015-027		Brian Beyer	96-3172 Hubbard St	0.316	1	3						
9-2-015-028		Ernesto Olson	96-3173 Hubbard St	0.3003	1	3						
9-2-017-001		Corina Sotelo	96-3177 Hubbard St	0.3751	1	4						
9-2-017-002		Centro de Salud	96-3253 Hubbard St	0.3472	1							
9-2-018-001		Edgar Soto	96-1174 Irma St	0.3054	1	3						
9-2-018-002		Adriana Martinez	96-3109 Hubbard St	0.2762	1	3						
9-2-018-004		Martina Lunin	96-3101 Irma St	0.297	1	4						
9-2-018-008		Maria Maria Dominguez	96-3093 Hubbard St	0.2271	1	3						
9-2-020-015		Baldemar Lee	96-3087 Hubbard St	0.2316	1	3						
9-2-020-016		Joseph Miller	96-3101 Hubbard St	0.2428	1	3						
9-2-020-029		Ernesto Medina	96-3106 Hubbard St	0.246	2							
9-2-020-046		Rosemaria Prieta	96-3117 Hubbard Street	0.294	1	3						
9-2-020-017		Clara Navarro	96-3105 Hubbard St	0.288	1	3						
9-2-020-033		Katherine Goleman	96-3120 Hubbard St	0.2355	1	1						
9-2-020-032		Leider Medina	96-3144 Hubbard St	0.2072	1	3						
9-2-020-003		Leider Jaime Martin	96-3137 Hubbard St	0.2492	1	3						
9-2-003-008		State of Hawaii	96-3120 Hubbard St	26.276								

**IWS Management Model 2A County In-House Maintenance Cost**

Year	Tasks	County O&M Staff Cost Capital Cost/Household
0	IWS Installation	
0	Pumping & Hauling equipment	\$ 250,000.00
0	Personnel Training	\$ 1,470.59
0	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 294.12
1	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
2	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
3	Septic sludge pumping & disposal by County staff	\$ 1,250.00
4	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
5	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
6	Septic sludge pumping & disposal by County staff	\$ 1,250.00
7	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
8	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
9	Septic sludge pumping & disposal by County staff	\$ 1,250.00
10	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
11	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
12	Septic sludge pumping & disposal by County staff	\$ 1,250.00
13	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
14	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
15	Septic sludge pumping & disposal by County staff	\$ 1,250.00
16	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
17	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
18	Septic sludge pumping & disposal by County staff	\$ 1,250.00
19	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
20	Absorption bed replacement	\$ 30,000.00
20	Pumping & Hauling equipment Replacement	\$ 1,470.59
21	Annual Inspection by & Trouble Calls by County staff - one IWS Operator /Plumber	\$ 822.00
	Average Annual Maintenance Cost	\$ 956.44

**Appendix C - Cost Calculations**

**IWS Management Model 2B Outsource Maintenance Cost**

Year	Tasks	County Admin	
		Outsource O&M Cost	Staff
0	IWS Installation		
1	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
2	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
3	Septic sludge pumping & disposal	\$ 1,250.00	\$ 572.00
4	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
5	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
6	Septic sludge pumping & disposal	\$ 1,250.00	\$ 572.00
7	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
8	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
9	Septic sludge pumping & disposal	\$ 1,250.00	\$ 572.00
10	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
11	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
12	Septic sludge pumping & disposal	\$ 1,250.00	\$ 572.00
13	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
14	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
15	Septic sludge pumping & disposal	\$ 1,250.00	\$ 572.00
16	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
17	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
18	Septic sludge pumping & disposal	\$ 1,250.00	\$ 572.00
19	IWS annual inspection & Trouble Calls	\$ 550.00	\$ 572.00
20	Absorption bed replacement	\$ 30,000.00	\$ 572.00
21	IWS annual inspection (repeat as Year 1)	\$ 550.00	\$ 572.00
	Average Annual Maintenance Cost	\$ 783.33	\$ 572.00

County WWWD Admin Personnel Cost for Record Keeping and administering  
 Based on \$100000/175 = \$572  
 Trouble calls, emergency repairs per IWS per year \$ 250.00

**IWS Management Model 3A Operating Permit User O&M Cost**

Year	Tasks	County Admin Cost	
		O&M Cost to Homeowner/User	Capital Cost
0	IWS Installation		
1	IWS annual inspection & Trouble calls	\$ 500.00	\$ 572.00
2	IWS annual inspection	\$ 500.00	\$ 572.00
3	Septic sludge pumping & disposal	\$ 1,200.00	\$ 572.00
4	IWS annual inspection	\$ 500.00	\$ 572.00
5	IWS annual inspection	\$ 500.00	\$ 572.00
6	Septic sludge pumping & disposal	\$ 1,200.00	\$ 572.00
7	IWS annual inspection	\$ 500.00	\$ 572.00
8	IWS annual inspection	\$ 500.00	\$ 572.00
9	Septic sludge pumping & disposal	\$ 1,200.00	\$ 572.00
10	IWS annual inspection	\$ 500.00	\$ 572.00
11	IWS annual inspection	\$ 500.00	\$ 572.00
12	Septic sludge pumping & disposal	\$ 1,200.00	\$ 572.00
13	IWS annual inspection	\$ 500.00	\$ 572.00
14	IWS annual inspection	\$ 500.00	\$ 572.00
15	Septic sludge pumping & disposal	\$ 1,200.00	\$ 572.00
16	IWS annual inspection	\$ 500.00	\$ 572.00
17	IWS annual inspection	\$ 500.00	\$ 572.00
18	Septic sludge pumping & disposal	\$ 1,200.00	\$ 572.00
19	IWS annual inspection	\$ 500.00	\$ 300.00
20	Absorption bed replacement	\$ -	\$ 30,000.00
21	IWS annual inspection (repeat as Year 1)	\$ 500.00	\$ 572.00
	Annual Average Cost	\$ 733.33	\$ 572.00

O&M Cost to Homeowner / User includes trouble calls  
 County admin staff to provide recording keeping, regulation and enforcing  
 Based on \$300 + \$200 = \$500  
 Based on \$100000/175



**IWS Management Model 3B County Voucher O&M Cost**

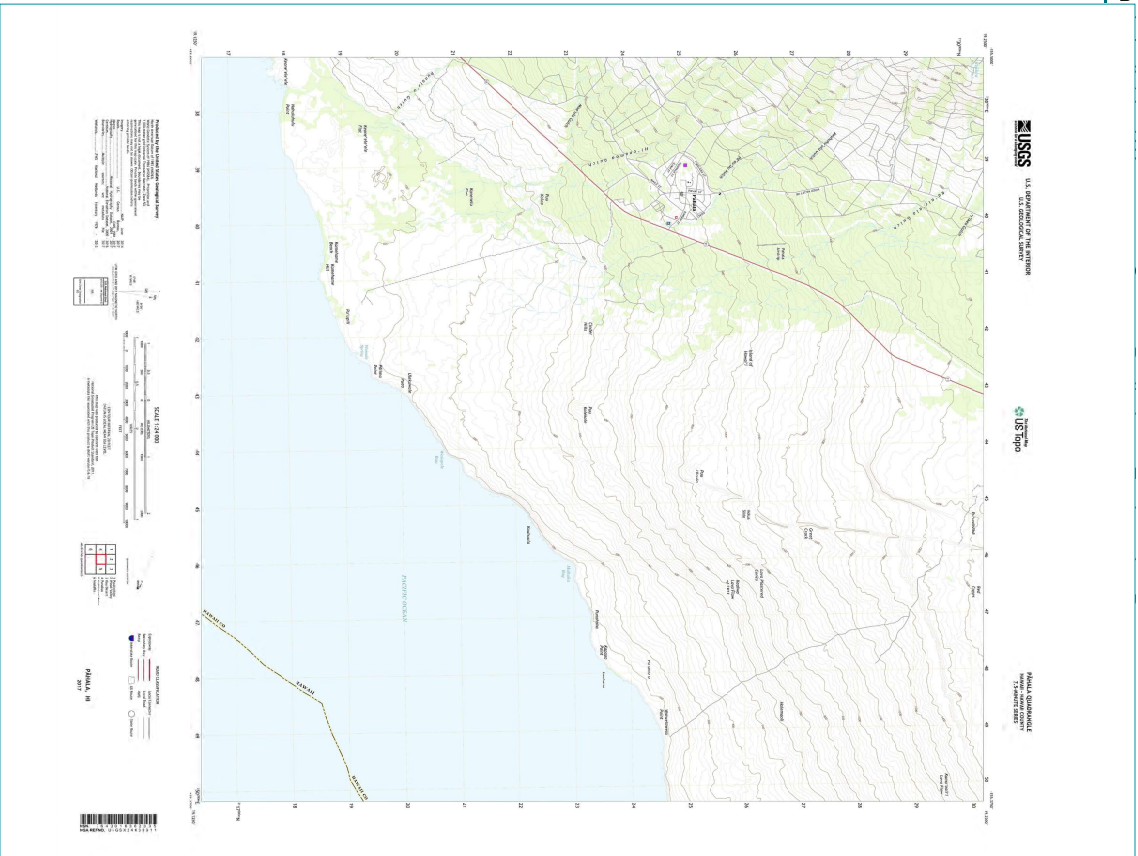
Year	Tasks	Trouble call Cost to Homeowner/User	County Voucher Cost (present value) Capital Cost
0	IWS installation		
1	IWS annual inspection & Trouble calls	600.00	872.00
2	IWS annual inspection	600.00	872.00
3	Septic sludge pumping & disposal	600.00	1,572.00
4	IWS annual inspection	600.00	872.00
5	IWS annual inspection	600.00	872.00
6	Septic sludge pumping & disposal	600.00	1,572.00
7	IWS annual inspection	600.00	872.00
8	IWS annual inspection	600.00	872.00
9	Septic sludge pumping & disposal	600.00	1,572.00
10	IWS annual inspection	600.00	872.00
11	IWS annual inspection	600.00	872.00
12	Septic sludge pumping & disposal	600.00	1,572.00
13	IWS annual inspection	600.00	872.00
14	IWS annual inspection	600.00	872.00
15	Septic sludge pumping & disposal	600.00	1,572.00
16	IWS annual inspection	600.00	872.00
17	IWS annual inspection	600.00	872.00
18	Septic sludge pumping & disposal	600.00	1,572.00
19	IWS annual inspection	600.00	872.00
20	Absorption bed replacement	-	30,000.00
21	IWS annual inspection (repeat as Year 1)	600.00	872.00
	Annual Average Cost	\$ 600.00	\$ 1,105.33

County voucher cost: \$572 + \$300  
Based on \$100000/175

**D**

**Appendix D - Topography**

D



E

## Appendix E - USGS Soil Survey



A-14

Soil Map—Island of Hawaii Area, Hawaii

### MAP LEGEND

	Area of Interest (AOI)		Spot Area
	Soil		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features

### Special Point Features

	Blowout		Borrow Pit
	Clay Spot		Closed Depression
	Gravel Pit		Gravelly Spot
	Lava Flow		Marsh or swamp
	Mine or Quarry		Miscellaneous Water
	Perennial Water		Rock Outcrop
	Saline Spot		Sand Spot
	Seaweed Enclosed Spot		Shrubland
	Slope or Slip		Spot Spot

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale. Elaboration of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: [Web.Marcator](http://Web.Marcator) (EPSG:3857)  
 Coordinate System: Web Mercator (EPSG:3857)  
 Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts area. The Web Mercator projection is not a true equal-area or equal-area conic projection; should be used if more accurate calculations of distance or area are required.  
 This product is generated from the USDA/NRCS certified data as of the version date(s) listed below.  
 Soil Survey Area: Island of Hawaii Area, Hawaii  
 Survey Area Data: Version 15, Aug 30, 2022  
 Soil map units are listed (as space allows) for map scales 1:50,000 or larger.  
 Date(s) aerial images were photographed: Jan 3, 2019—Jun 28, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Natural Resources Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

1/18/2023  
Page 2 of 3

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## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
517	Akapai hydrous silty clay loam, 10 to 20 percent slopes	0.5	0.1%
521	Naalehu medial silt/ clay loam, 3 to 10 percent slopes	163.8	18.0%
522	Naalehu medial silt/ clay loam, 10 to 20 percent slopes	178.1	19.6%
562	Akahi-Akapai complex, 10 to 20 percent slopes	0.0	0.0%
567	Puuwaalehu complex, 3 to 10 percent slopes	567.2	62.4%
<b>Totals for Area of Interest</b>		<b>909.5</b>	<b>100.0%</b>

## Island of Hawaii Area, Hawaii

## 521—Naalehu medial silt/ clay loam, 3 to 10 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2K1ng

*Elevation:* 0 to 1,200 feet

*Mean annual precipitation:* 30 to 60 inches

*Mean annual air temperature:* 70 to 75 degrees F

*Frost-free period:* 365 days

*Farm/land classification:* Prime farmland if irrigated

**Map Unit Composition**

Naalehu and similar soils: 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Naalehu****Setting**

*Landform:* Ash fields on pahoehoe lava flows

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear, convex

*Parent material:* Basic volcanic ash over pahoehoe lava

**Typical profile**

Ap1 - 0 to 11 inches: medial silt loam

Ap2 - 11 to 17 inches: medial silt loam

Bw1 - 17 to 26 inches: hydrous silty clay loam

Bw2 - 26 to 37 inches: hydrous silty clay loam

2Bwb - 37 to 44 inches: hydrous silty clay loam

3Bwb - 44 to 59 inches: hydrous silty clay loam

**Properties and qualities**

*Slope:* 3 to 10 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 mm)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water supply:* 0 to 60 inches: High (about 11.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 3e

E

*Hydrologic Soil Group:* B  
*Ecological site:* F161BYS01H - Kona Weather Ustic Forest  
*Hydric soil rating:* No

### Data Source Information

Soil Survey Area: Island of Hawaii Area, Hawaii  
Survey Area Data: Version 15, Aug 30, 2022

E

### Island of Hawaii Area, Hawaii

#### 567—Puueo-Naalehu complex, 3 to 10 percent slopes

##### Map Unit Setting

*National map unit symbol:* 2kjm  
*Elevation:* 0 to 1,200 feet  
*Mean annual precipitation:* 35 to 47 inches  
*Mean annual air temperature:* 70 to 75 degrees F  
*Frost-free period:* 365 days  
*Farm/land classification:* Not prime farmland

##### Map Unit Composition

*Puueo and similar soils:* 65 percent  
*Naalehu and similar soils:* 35 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

##### Description of Puueo

###### Setting

*Landform:* Ash fields on aa lava flows  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear, convex  
*Parent material:* Basic volcanic ash over aa lava

###### Typical profile

*2C1/A1 - 0 to 7 inches:* extremely cobbly medial silt loam  
*2C2/A2 - 7 to 18 inches:* extremely cobbly medial silt loam  
*2C3 - 18 to 30 inches:* cobbles  
*2R - 30 to 40 inches:* bedrock

###### Properties and qualities

*Slope:* 3 to 10 percent  
*Surface area covered with cobbles, stones or boulders:* 0.0 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately low (0.00 to 0.06 in/h)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply:* 0 to 60 inches; Low (about 3.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 6s  
*Land capability classification (nonirrigated):* 6s

**E**

*Hydrologic Soil Group:* A  
*Ecological site:* F161BY501H1 - Kona Weather Ustic Forest  
*Hydric soil rating:* No

**Description of Naalehu**

**Setting**

*Landform:* Ash fields on pahoehoe lava flows  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear, convex  
*Parent material:* Basic volcanic ash over pahoehoe lava

**Typical profile**

*Ap1 - 0 to 11 inches:* medial silt loam  
*Ap2 - 11 to 17 inches:* medial silt loam  
*Bw1 - 17 to 28 inches:* hydrous silty clay loam  
*Bw2 - 28 to 37 inches:* hydrous silty clay loam  
*2Bwb - 37 to 44 inches:* hydrous silty clay loam  
*3Bwb - 44 to 59 inches:* hydrous silty clay loam

**Properties and qualities**

*Slope:* 3 to 10 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/h)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply:* 0 to 60 inches. High (about 11.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3e  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* F161BY501H1 - Kona Weather Ustic Forest  
*Hydric soil rating:* No

**Data Source Information**

Soil Survey Area: Island of Hawaii Area, Hawaii  
Survey Area Data: Version 15, Aug 30, 2022

**F**

Appendix F - Kai'u Gym Geotech Report

F

April 9, 2012  
W.O. 12-5268

Mr. Chad McDonald  
Mitsunaga & Associates, Inc.  
747 Amanoa Street, Suite 216  
Honolulu, Hawaii 96814

Dear Mr. McDonald:

Our report, "Foundation Investigation, Ka'u Gymnasium, Pahala, Ka'u, Hawaii, TMR: 9-6-05: 08 and 39," dated April 9, 2012, our Work Order 12-5268 is enclosed. This investigation was conducted in general conformance with the scope of services presented in our proposal dated November 9, 2011.

The surface soil consisted of brown clayey silt derived from volcanic ash. Although the clayey silt/volcanic ash encountered in our borings appeared to be in a firm to medium stiff condition, laboratory testing indicated high compressibility characteristics. Underlying the surface volcanic ash at depths ranging from about 6 inches to 4.5 feet was gray, slight to moderately weathered basalt. The basalt was in a medium hard to hard condition and extended to the maximum depths drilled. A cavity was encountered within the basalt stratum in a boring at depths of about 11 feet, extending down to 14 feet.

Conventional spread footings founded on the medium hard to hard basalt are recommended for support of the proposed structures. An allowable bearing value of 6,000 pounds per square foot may be used for foundation design. Due to the potential lava tubes, cavities, and voids in the basalt stratum, we recommend that a probing and grouting program be implemented during construction of the foundations. In addition, the surface clayey silt/volcanic ash at the building areas should be completely removed and, if required, replaced with imported non-expansive, granular structural fill.

Additional geotechnical recommendations are presented in this report. We appreciate this opportunity to be of service. Should you have any questions concerning this report, please feel free to call on us.

Very truly yours,

HIRATA & ASSOCIATES, INC.

  
Paul S. Morimoto  
President

PSM:CCT



G

## Appendix G - YKE Geotechnical Data Report

G

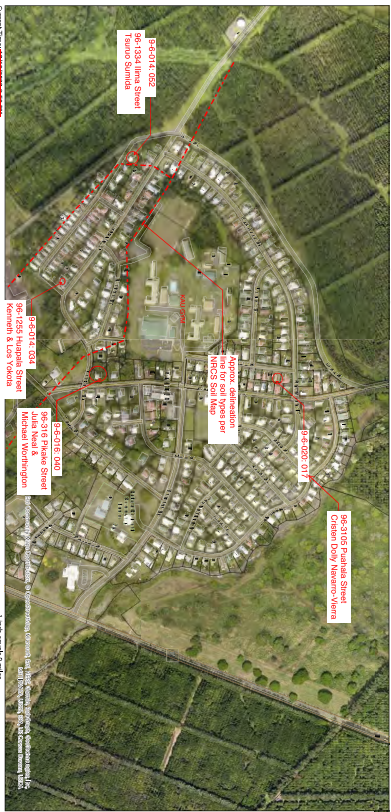


H

## Appendix H - Percolation Test Results



**Pahala - Percolation Test Sampling**



4 lots are selected for the initial percolation sampling sites. These sites were selected based on their representing soil type and relative elevations. It is not critical to be on the exact lot selected.

Disclaimer: Data provided and measured by the Small Claims Wastewater Division are subject to change as any time. The County of Hawaii does not guarantee the positional or thematic accuracy of the GIS data.



DEPARTMENT OF HEALTH - WASTEWATER BRANCH  
INDIVIDUAL WASTEWATER SYSTEM (IWS) - SITE EVALUATION / PERCOLATION TEST

Date / Time: 11/21/22 8:00am Test Performed by: Austin Ah Hee / Cees Ramlaynon  
 Owner: Christen Dolly Navarro-Vieira TRAC ( 3 ) 9 - 6 - 020 : 017  
 Elevation: 976 feet  
 Depth to Groundwater Table: N/A feet below grade  
 Depth to Bedrock (if observed): N/A feet below grade  
 Diameter of Hole: 12 inches  
 Depth to Hole Bottom: 4 feet below grade  
 Depth, inches below grade \_\_\_\_\_  
 \_\_\_\_\_ Dense brown clay (Soil Profile (color, texture, odor))  
 \_\_\_\_\_ Light brown clay

PERCOLATION READINGS:  
 Time 12 inches of water to seep away: 45 minutes  
 Time 12 inches of water to seep away: 53 minutes

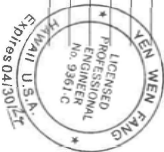
Check one:  
 Percolation tests in sandy soils, recorded time intervals and water drops at least every 10 minutes for at least 1 hour.  
 Percolation tests in non-sandy soils, pre-soaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour of time for the first 6 inches to seep away in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

Time Interval	Drop in inches	Time Interval	Drop in inches
10	1.5		
10	1.5		
10	1		
10	1		
10	1		

Percolation Rate (time/final water level drop): 10 minutes/inches

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exist between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

Engineer's Signature/Stamp \_\_\_\_\_ Date 11/28/22



DEPARTMENT OF HEALTH - WASTEWATER BRANCH  
INDIVIDUAL WASTEWATER SYSTEM (IWS) - SITE EVALUATION / PERCOLATION TEST

Date / Time: 11/21/22 1:00pm Test performed by: Austin Ah Hee / Cres Ramthayan  
Owner: Tsunoo Sumida TRK: ( 3 ) 9 - 6 - 014 : 052

Elevation: 965 feet  
Depth to Groundwater Table: N/A feet below grade  
Depth to Bedrock (if observed): N/A feet below grade  
Diameter of Hole: 12 inches  
Depth to Hole Bottom: 2 feet below grade

0-6 Depth: inches below grade  
Soil Profile (color, texture, other): Grey natural ash  
Very dense brown clay

Rock is encountered at 24" depth and cannot dig deeper. Digging is done using crowbar and shovel. 4 holes were dug at different locations in the property with similar result, encountering rock at 24" depth

PERCOLATION READINGS:  
Time 12 inches of water to seep away: 75 minutes  
Time 12 inches of water to seep away: 75 minutes

Check one:  
 Percolation tests in sandy soils, recorded time intervals and water drops at least every 10 minutes for at least 1 hour.

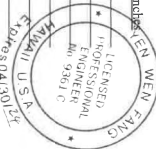
Percolation tests in non-sandy soils, pre-soaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour of time for the first 6 inches to seep away in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

Time Interval	Drop in Inches	Time Interval	Drop in Inches
10	1		
10	1		
10	1		
10	1		
10	1		

Percolation Rate (time/final water level drop): 10 minutes/inches

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exist between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

Engineer's Signature/Stamp:  Date: 11/28/22



DEPARTMENT OF HEALTH - WASTEWATER BRANCH  
INDIVIDUAL WASTEWATER SYSTEM (IWS) - SITE EVALUATION / PERCOLATION TEST

Date / Time: 11/22/22 8:00am Test performed by: Austin Ah Hee  
Owner: Julia Neal and Michael Worthington TRK: ( 3 ) 9 - 6 - 016 : 040

Elevation: 886 feet  
Depth to Groundwater Table: N/A feet below grade  
Depth to Bedrock (if observed): N/A feet below grade  
Diameter of Hole: 12 inches  
Depth to Hole Bottom: 2.5 feet below grade

0-24 Depth: inches below grade  
Soil Profile (color, texture, other): Loose grey clay  
Dense brown clay

Note: Large impermeable rock encountered at depth of 30".  
Hole could not be dug deeper. Hole was dug with hand shovel and large crowbar.

PERCOLATION READINGS:  
Time 12 inches of water to seep away: 37 minutes  
Time 12 inches of water to seep away: 38 minutes

Check one:  
 Percolation tests in sandy soils, recorded time intervals and water drops at least every 10 minutes for at least 1 hour.

Percolation tests in non-sandy soils, pre-soaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour of time for the first 6 inches to seep away in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

Time Interval	Drop in Inches	Time Interval	Drop in Inches
10	3		
10	3		
10	3		
10	3		
10	2.5		

Percolation Rate (time/final water level drop): 4 minutes/inches

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exist between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

Engineer's Signature/Stamp:  Date: 11/28/22



DEPARTMENT OF HEALTH - WASTEWATER BRANCH  
 INDIVIDUAL WASTEWATER SYSTEM (IWS) - SITE EVALUATION / PERCOLATION TEST

Date / Time: 11/22/22 1:00 pm Test Performed by: Austin Ah Hee

Owner: Kenneth and Lois Yokola T/M/R: ( 3 ) 9 . 6 . 014 : 034

Elevation: 880 feet  
 Depth to Groundwater Table: N/A feet below grade  
 Depth to Bedrock (if observed): N/A feet below grade  
 Diameter of Hole: 12 inches  
 Depth to Hole Bottom: 3 feet below grade

Depth, inches below grade: 0-36  
 Soil Profile (color, texture, etc.): Very dense brown clay

Note: Large impermeable rock encountered at a depth of 36". Test hole could not be dug any deeper. Hole was dug with a hand shovel and large crowbar.

PERCOLATION READINGS:  
 Time 12 inches of water to seep away: 75 minutes

Time 12 inches of water to seep away: 75 minutes

Check one:

Percolation tests in sandy soils, recorded time intervals and water drops at least every 10 minutes for at least 1 hour.

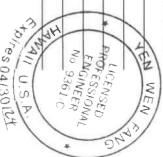
Percolation tests in non-sandy soils, pre-soaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour of time for the first 6 inches to seep away; in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

Time Interval	Drop in Inches	Time Interval	Drop in Inches
10	1.5		
10	1.5		
10	1.5		
10	1		
10	1		
10	1		

Percolation Rate (time/final water level drop): 10 minutes/inches

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems," and the results were acceptable. I also attest that three feet of suitable soil exists between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

Engineer's Signature/Stamp:  Date: 11/28/22



I

Appendix I - EZ Treat Recirculating Biofilter



PO Box 176  
Haymarket, Virginia 20168

March 25, 2023

To: James Roberts, Owner, The Wai Home

From: Joelle Wirth, RS, E-Z Treat Incorporated

Re: Pahala Large Capacity Cesspool (LCC) Replacement Project  
EPA Grant XP-96942401

The following attachments are our proposals for the Pahala Large Capacity Cesspool Replacement Project:

The first proposal was to address the Large Capacity Cesspool Replacement. E-Z Treat has looked at the proposals and decided that the 190,000 gpd system is too large for us to consider. We typically handle flows up to 100,000 gpd effectively and competitively but greater than 100,000 gpd the other options identified would be more cost effective.

I have included a flow diagram and a budget for a large system that can accommodate up to 53,300 gallons per day to give you an idea of the footprint and the associated cost for the equipment.

In addition, we have put together several configurations of our system for use with single family residences. E-Z Treat is NSF 40, 245 and 350 Certified. The configurations and a brief description follow:

**1. D141** this model can accommodate flows up to 600 gpd. It requires a septic tank that is in front of a recirculation tank with EZ Treat Pod set to the side. The discharge could be gravity to a rehabilitated cesspool per Hawaii DOH standards or a drain field.

Budget: \$7450 includes freight

2 1000-gallon tanks \$3500

**2. D122** this model can accommodate flows up to 600 gpd. It requires a combination septic tank recirculation tank with the E-Z Treat Pod set to the side and a pump discharging tank with EZ Treat Pod set to the side. The discharge could be gravity to a rehabilitated cesspool per Hawaii DOH standards or a drain field.

Budget: \$7450 includes freight

1 1500-gallon tank \$2500

**3. D118** this model can accommodate flows up to 600 gpd. It requires a septic tank followed by a field dosing tank with EZ Treat Pod set to the side. The discharge is pressurized and could be directed towards a rehabilitated cesspool or a designated drain field.

Budget: \$8472 includes freight

1 1000-gallon septic tank and 1 1500 gallon recirc/field dosing tank \$4500

**4. D149** this model can accommodate flows up to 600 gpd. It requires a septic tank that is in front of a recirculation tank with EZ Treat Pod set to the side. The discharge could be gravity to a rehabilitated cesspool per Hawaii DOH standards or a drain field. If pressurized a combination recirculation-pump tank could be utilized to discharge to a drain field.

Budget: \$8472.00 includes freight

Tanks two 1000-gallon tanks \$3500

Total per household 11,972.00

The configurations are attached for your review.



PO Box 176  
Haymarket, Virginia 20168

### **EZ Treat Technology**

EZ Treat treatment technology is designed to solve septic problems on most difficult sites by cleaning wastewater to very high levels before discharge to a leach field.

E-Z Treat is a recirculating synthetic media filter. E-Z Treat is an affordable, high performing media filter. The media never needs to be replaced in comparison to other media such as peat, coco peat, foam or textile. The system is easy to install and has very low maintenance. E-Z Treat is one of the two black water onsite systems that tested and listed for NSF 350 through NSF. It is the 1<sup>st</sup> and only biological and non-chemical system approved for water reuse. NSF 350 allows for the reuse of treated effluent to be used inside residences and commercial facilities. Being able to produce a treated effluent that can now be used for expanded non potable activities such as toilet, flushing car washing, unlimited irrigation uses allows us the ability to rethink the water budget and be able to save and use water more efficiently.

### **Treatment Process**

Septic tank treated effluent flows to the E-Z Treat Re-circulating Synthetic Filter where it receives passive biochemical treatment through and active bio-film matrix. The styrene media is very uniform providing ample surface area for biological growth. The styrene media contains many voids to accommodate optimum air and liquid flow.

The re-circulation chamber contains a float bypass valve and re-circulation pump. The bypass connects to the 4" return line from the E-Z Treat Pod. The by-pass valve allows the effluent to be continually re-circulated through the styrene media. Treated effluent exits the bypass valve and flows into a gravity drain field, rehabilitated cesspool, or into a pump chamber for dosing to LPB, drip irrigation or other pressurized and non-pressurized drain fields. Effluent is suitable for reuse. UV disinfection may be required.

### **Leach Field Reductions**

In various states, EZ Treat has successfully requested and received approval for a reduction in the square footage of required leach field necessary to effectively dispose of EZ Treat-treated effluent. Approvals for reduction are based on empirical studies showing the correlation between acceptable loading rates and various soil types under a range of effluent quality, and the ability of time dosing to increase the infiltrative capacity of soils.

Leach fields are designed with water loading rates to fit a variety of soil types considering the daily flow volume, depth to limiting factor, and strength of the effluent. When pretreatment produces a highly treated water, such as of the quality that EZ Treat can achieve, numerous studies have demonstrated that there is virtually no biological mat formation and effluent loading rates can approach natural soil infiltration rates.

### **Residential Systems**

EZ Treat's residential systems are available in a variety of sizes. Beginning with the residential models that treats up to three bedrooms and includes models that treat up to 6 bedrooms with one pod. Multiple pods may be used in series to acquire the desired flows. Residential systems also require a septic tank sized to existing state regulations.

### **Commercial & Engineered Systems**

Commercial EZ Treat models include Models up to 5000 gpd per module. Commercial systems use the same treatment technology as the residential units and are set adjacent to reinforced concrete tanks sized according to flow volume and loading strength. EZ Treat has commercial systems installed and operating in schools, apartment buildings, restaurants, inns, retail stores, business parks, subdivisions, multiple-family housing units, breweries and more.

### **Maintenance**

EZ Treat is designed to be operationally simple, the system is manufactured of non-corrodible materials and hardware, PVC piping, high-density polyethylene and fiberglass or precast concrete tanks, and industrial hardened electronics. All pumps have been selected to be of the highest quality and longest service life possible. There are no chemicals to add, filters to clean, or aerators to replace. As such, annual maintenance entails a review of the system, visual inspection of the treatment center and internal parts, a check of the effluent clarity to assure the system is operating at maximum efficiency, and a visual check of the disposal area.

### **Experience**

EZ Treat has installed systems serving thousands of facilities. These include systems with flows ranging from 200-gpd to 100,000-gpd. In 23 years of being in the business, we have not had to replace the media in our filters. We pride ourselves for our reputation for consistent high-level treatment, innovation, versatility, and customer-friendly solutions to wastewater problems, with highly dependable operation and service.



DWG NO. 018

SHEET 1 OF 1

E-Z TREAT SYSTEM  
SINGLE MODEL 800 PFD  
TWO TANK SIMPLEX  
DESIGN  
SEW. TREAT. AND PUMP TANKS

PROJECT: [REDACTED]

ADDRESS: [REDACTED]

DATE: [REDACTED]

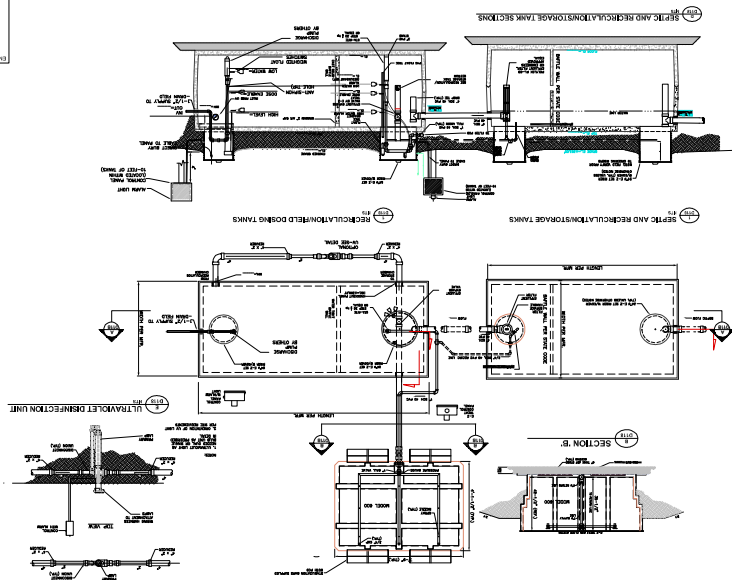
BY: [REDACTED]

CHECKED: [REDACTED]

GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE IBC AND ALL APPLICABLE CODES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL HEALTH DEPARTMENT AND OTHER AGENCIES.
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL HEALTH DEPARTMENT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.
6. ALL CONSTRUCTION SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.
7. THE CONTRACTOR SHALL MAINTAIN A NEAT AND SAFE WORK SITE AT ALL TIMES.
8. ALL WASTE MATERIALS SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORK DAY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL ADJACENT PROPERTIES AND THE ENVIRONMENT.
10. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE IBC AND ALL APPLICABLE CODES.

NOT TO SCALE



A-38

DWG NO. 019

SHEET 1 OF 1

E-Z TREAT SYSTEM  
SINGLE MODEL 800 PFD  
TWO TANK 2 PUMP  
COMBINATION

PROJECT: [REDACTED]

ADDRESS: [REDACTED]

DATE: [REDACTED]

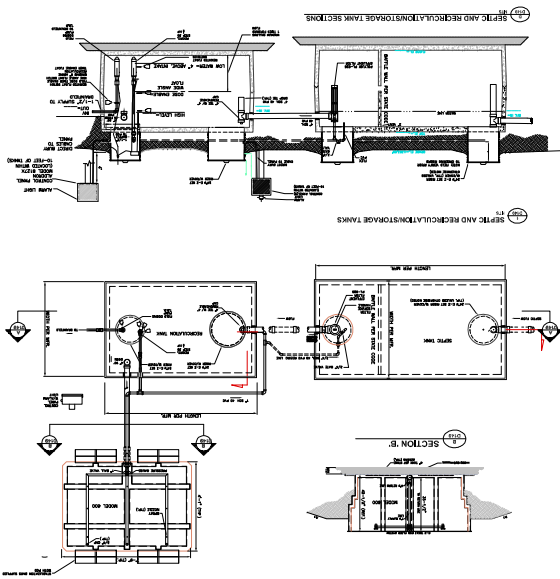
BY: [REDACTED]

CHECKED: [REDACTED]

GENERAL NOTES:

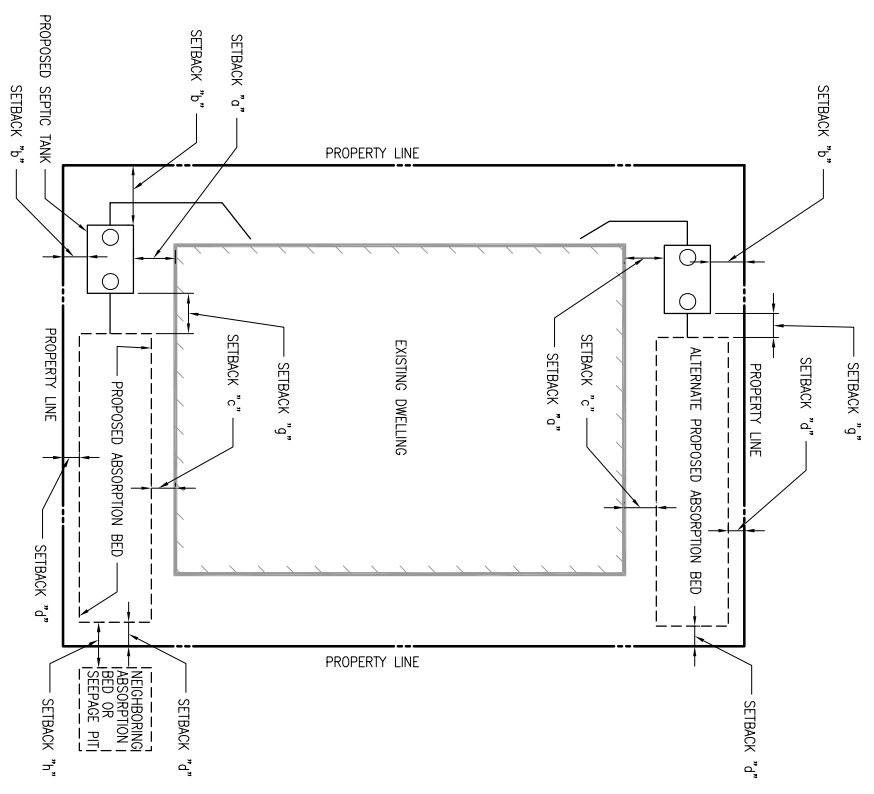
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6. ALL CONSTRUCTION SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.
7. THE CONTRACTOR SHALL MAINTAIN A NEAT AND SAFE WORK SITE AT ALL TIMES.
8. ALL WASTE MATERIALS SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORK DAY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL ADJACENT PROPERTIES AND THE ENVIRONMENT.
10. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE IBC AND ALL APPLICABLE CODES.

NOT TO SCALE



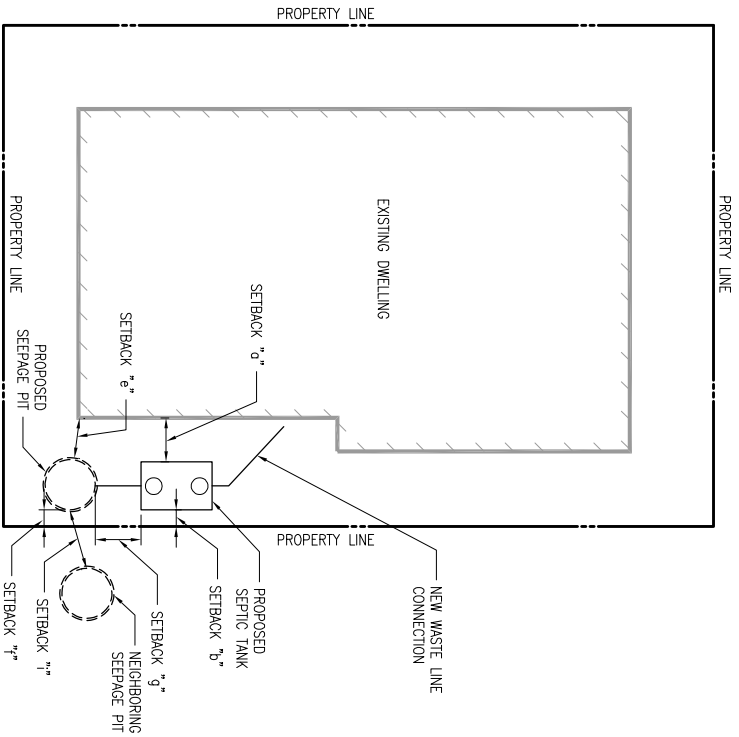
A-39

Appendix J - Typical IWS Layout



**TYPICAL IWS LAYOUT W/ ABSORPTION BED**  
 See Schedule A for Required Setback Dimensions and Variance Request





**TYPICAL IWS LAYOUT W/ SEEPAGE PIT**  
 See Schedule A for Required Setback Dimensions and Variance Request

**SCHEDULE A**

SETPACK TYPE	DESCRIPTION/MIN. PER DOH, TABLE II (SEE NOTE 1)	VARIANCE REQUEST (SEE NOTE 1)
"a"	DIST. BTW BLDG & SEPTIC TANK / 5' MIN.	2' < "a" < 5'
"b"	DIST. BTW PROPERTY LINE & SEPTIC TANK / 5' MIN.	1' < "b" < 5'
"c"	DIST. BTW BLDG & ABSORPTION BED / 5' MIN.	2' < "c" < 5'
"d"	DIST. BTW PROPERTY LINE & ABSORPTION BED / 5' MIN.	0 < "d" < 5'
"e"	DIST. BTW BLDG & SEEPAGE PIT / 5' MIN.	2' < "e" < 5'
"f"	DIST. BTW PROPERTY LINE & SEEPAGE PIT / 9' MIN.	1' < "f" < 5'
"g"	DIST. BTW SEPTIC TANK & ABSORPTION BED / 5' MIN.	2' < "g" < 5'
"h"	DIST. BTW NEIGHBORING ABSORPTION BEDS / 5' MIN.	1' < "h" < 5'
"i"	DIST. BTW NEIGHBORING SEEPAGE PITS / 12' MIN.	6' < "i" < 12'

**ABSORPTION BED & SEEPAGE PIT SIZING**

# OF BEDROOMS SEPTIC TANK SIZE	NON-TRAFFIC RATED ABSORPTION BED SIZE (SEE NOTE 3)	TRAFFIC RATED ABSORPTION BED SIZE (SEE NOTE 3)	SEEPAGE PIT SIZE (SEE NOTE 4)
3 1000 GAL.	10' X 24' 12' X 20' 15' X 16'	9' X 24' 12' X 18' 15' X 16'	6'6" X 12' DEEP
4 1000 OR 1250 GAL.	10' X 32' 12' X 27' 15' X 22'	9' X 30' 12' X 24' 15' X 18'	6'6" X 15' DEEP 8'6" X 12' DEEP
5 1250 GAL.	10' X 40' 12' X 34' 15' X 27'	9' X 40' 12' X 28' 15' X 24'	8'6" X 14' DEEP
6 1250 GAL. PER DWS (SEE NOTE 2)	10' X 48' 12' X 40' 15' X 32'	9' X 48' 12' X 36' 15' X 28'	8'6" X 17' DEEP
7 1250 GAL. PER DWS (SEE NOTE 2)	10' X 56' 12' X 47' 15' X 38'	9' X 52' 12' X 40' 15' X 32'	8'6" X 20' DEEP

**NOTES:**

- The request is for Variance from Section 11-62-22 Spacing of Individual Wastewater Systems, Table II in Appendix D and Section 11-62-31.(1)(i)(O) where states that one IWS cannot serve more than 5 bedrooms.
- For dwellings with more than 5 bedrooms, we request a Variance to base the IWS design on the DWS water consumption record rather than based on number of bedrooms.
- Absorption Bed for standard perforated pipe with gravel bed installation (non-traffic rated), a percolation rate of 2 min./inch is assumed. For gravel-less installation (Infiltrator Chambers) or traffic rated chambers, 17% reduction is taken for the required area of absorption bed.
- For sizing of seepage pit, a percolation rate of 1 min./inch is assumed because the soil condition is likely to be granular or rocky type at that depth.

# **Appendix B**

Archeological Literature Review Report

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**Archaeological Literature Review Report for the  
Pāhala Large Capacity Cesspool Closure Project,  
Hionamoā, Pālima, and Pā‘au‘au 1 and 2 Ahupua‘a,  
Ka‘ū District, Hawai‘i Island  
Multiple Parcels and County Roadways in  
TMKs: (3) 9-6-002, 005, 014, 015,  
016, 017, 018, 020, and 021**

**Prepared for  
County of Hawai‘i Department of Environmental Management,  
Wastewater Division**

**Prepared by  
Sarah Wilkinson, B.A.,  
and  
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.  
Kailua, Hawai‘i  
(Job Code: HIONAMOA 5)**

**November 2023**

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<b>Reference</b>	Archaeological Literature Review Report for the Pāhala Large Capacity Cesspool Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2 Ahupua'a, Ka'i District, Hawai'i Island, Multiple Parcels and County Roadways in TMKs: (3) 9-6-002, 005, 014, 015, 016, 017, 018, 020, and 021 (Wilkinson and Hamnatt 2023)
<b>Date</b>	November 2023
<b>Project Number(s)</b>	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: HONAMO.A 5
<b>Investigation Permit Number</b>	CSH completed this study under archaeological fieldwork permit number 23-30, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-13-282.
<b>Agencies</b>	Hawai'i State Department of Health (DOH); SHPD; County of Hawai'i Department of Environmental Management (DEM)
<b>Land Jurisdiction</b>	State of Hawai'i/County of Hawai'i/Private
<b>Project Proponent</b>	County of Hawai'i DEM Ranzi Mansour, Director 345 Kukuanaoa Street, Suite 41 Hilo, HI 96720 Attention: Mark Grant, Project Coordinator Email: cohdem@hawaiicounty.gov
<b>Project Funding</b>	County of Hawai'i
<b>Project Location</b>	The project is located in the town of Pāhala, approximately 5 km (3.3 miles) back from the coast in the Ka'i District, Hawai'i Island. The project area crosses portions of Honamoa, Pāhala, and Pā'au'au 1 and 2 Ahupua'a. It is depicted on a portion of the 1995 Pāhala U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), two tax map plats (Figure 2 and Figure 3), and a 2020-2021 aerial photograph (Figure 4).
<b>Project Description</b>	The project area includes approximately 200 discrete tax parcels (in whole or in part) and portions of multiple County of Hawai'i (County) roadways in Pāhala. The proposed treatment plant is located adjacent to the Maille Street and Hawai'i Belt Road (Route 11) intersection within a portion of TMK: (3) 9-6-002:018. The two large-capacity cesspools (LCCs) slated for closure are located at TMKs: (3) 9-6-002:016 por. (LCC 1) and 9-6-016:041 por. (LCC 2). A full list of TMK parcels within the project area is provided in Appendix A.
	Effective 22 August 2022, the United States Environmental Protection Agency (EPA) and the County voluntarily entered into a revised Administrative Order on Consent (AOC) to close two LCCs in Pāhala. The County currently owns, controls, maintains, and operates the two LCCs in Pāhala, in violation of the Federal Safe Drinking Water Act (SDWA) which requires owners and operators of LCCs to close them on or before 5 April 2005. In Pāhala, the County DEM has identified

	four wastewater treatment project options that facilitate closure of the LCCs: <ol style="list-style-type: none"> <li>1. Wastewater treatment plant and effluent disposal area within a 14.9-acre site, including a package plant and new collection system.</li> <li>2. Wastewater treatment plant and effluent disposal area within a 14.9-acre site, including a package plant utilizing the existing collection system.</li> <li>3. Individual Wastewater System (IWS) with maintenance contract.</li> <li>4. Individual Wastewater System (IWS) with operating permit model.</li> </ol> <p>It is anticipated that the project will be undertaken solely with the utilization of County funds. No funds will be provided by the EPA. The County may pursue the use of funds from the State of Hawai'i Department of Health (DOH) Clean Water State Revolving Fund (CWSRF) program, but that has not been confirmed at this time. Use of CWSRF funds will require compliance with Federal Crosscutter requirements, including but not limited to Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act. The IWS system improvements will not require Section 7 and Section 106 concurrences, as the IWS improvements associated with the proposed action are classified as non-point source pursuant to Section 212 of the Federal Water Pollution Control Act.</p> <p>Alternatives 1 and 2 involve a package wastewater treatment plant located within portion of TMK: (3) 9-6-002:018. The package plant would be within the 14.9-acre portion of this parcel previously surveyed by CSH (Bautista et al 2020). The Pāhala WWTP and effluent disposal area and package plant would be the same area as the prior proposed WWTP. The package plant would occupy about 4.0 acres and the remaining 10+ acres of the previously surveyed area will remain in macadamia nut orchard which will be irrigated using the treated effluent discharge (Figure 5).</p> <p>According to a March 2023 preliminary engineering report (PER) prepared by Engineering Partners, Alternatives 3 and 4 include an IWS program in lieu of development of a package treatment plant. The IWS alternatives involve construction of 174 IWS on privately owned properties in the community. A total of 109 IWS will need to be constructed and installed to close the two LCCs. The PER describes the installation of IWS with a septic tank and absorption bed/field for disposal of effluent that would generally require an area of between 480 to 765 square feet (sq ft), depending on the percolation rate of the soil. Figure 6 shows a typical IWS layout plan for an absorption bed.</p>
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	<p>The PEIR also showed an alternative IWS with septic tank and seepage pit would require an area of about 120 sq ft. Figure 7 shows a typical IWS layout plan for a seepage pit.</p> <p>The revised AOC further stipulates that the County must administer a more active management strategy than is typical in Hawai'i, either a Model 2 (Maintenance Contract) or Model 3 (Operating Permit) management strategy for a network of IWS at Pāhala. These models reflect varying degrees of responsibility for the County and homeowner.</p>
<p><b>Project Area Geographic Extent</b></p>	<p>92.06 acres (37.26 hectares)</p>
<p><b>Document Purpose and Historic Preservation Regulatory Context</b></p>	<p>This investigation was designed—through detailed historical, cultural, and archaeological background research—to determine the likelihood that historic properties may be affected by the project and based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project's planning and support the project's historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276.</p> <p>This information also supports the County DEM's consultation with the SHPD regarding the project's necessary historic preservation review steps pursuant to HAR §13-275.</p> <p>CSH conducted an archaeological inventory survey (AIS) for a prior iteration of the project (Pāhala Wastewater Treatment Plant and Sewer System project) in 2018–2019 (Bautista et al. 2020). The AIS addressed a project area and federal area of potential effect (APE) comprising the majority of the current project area. The AIS was accepted by the SHPD in a letter dated 20 February 2020 (Log No.: 2019.00550, Doc. No.: 2002SCH08, Appendix B). In this letter the SHPD concurred with the DEM's project effect determination of no historic properties affected and stipulation of archaeological monitoring for identification purposes. An archaeological monitoring plan (Wilkinson and Hammett 2020) was prepared and accepted by SHPD in a letter dated 4 November 2020 (Log No.: 2020.01018, Doc. No.: 2011SN01, Appendix B). CSH conducted some monitoring for a geotechnical survey of the proposed collection system and plant site in January and February 2021, and then CSH was notified the project had been put on hold.</p> <p>As noted in the project description above, in 2022 the EPA and the County voluntarily entered into the revised AOC for closure of the five LCCs in Pāhala and Nā'ālehu. The County has proposed several new project alternatives for the Pāhala LCC closures, including alternatives that differ significantly from the project addressed in the</p>

<p><b>Natural Environment</b></p>	<p>Bautista et al. (2020) AIS. Therefore, the project area has been expanded to include the numerous (170+) private properties that would be subject to IWS development under proposed Alternatives 3 and 4. Many of these private properties are lots connected to the existing C. Brewer collection system utilizing LCCs 1 and 2; these properties were considered part of the prior federal APE, but were not included within the AIS project area nor surveyed during that study (Figure 8). A number of additional parcels categorized as newly accessible have also been incorporated into the current project area; these include lots located along the eastern side of Plakae Street and portions of Huapala Street, Hinano Street, 'Ilima Street, and Maile Street (see Figure 4).</p> <p>The project area is situated approximately 5 km (3.3 miles) back from the coast on the southeastern slope of Mauna Loa volcano, at an elevation of 170–305 m (590–1,000 ft) above mean sea level (amsl). The Pāhala Town vicinity receives an annual average rainfall of 52 inches (Grambelluca et al. 2013), which today supports commercial agricultural crops like coffee and macadamia nuts and historically supported sugarcane. The Ka'i'i Forest Reserve is located approximately 2.5 miles upslope. Gulches carrying flood waters from the forest reserve <i>mukai</i> (seaward, downslope) bracket the town; no natural waterways are present within the project area. Vegetation within the potential package treatment plant area consists of a macadamia (<i>Macadamia integrifolia</i>) orchard with Norfolk Island pines (<i>Fraxcaria heterophylla</i>) used for windbreaks. The terrain in this area is gently sloped to the southwest. The sewer line easement extends through the orchard and areas of grasses and weeds. Landscaped residential yards line the sides of the County roadways in Pāhala Town. The terrain along the roadways ranges from level to sloped.</p> <p>The unique geology of its upper slopes, lined with a string of large <i>pu'u</i> (hills, cinder cones) has protected broad portions of windward Mauna Loa from relatively recent lava flows. The region is known for its arable soils formed in volcanic ash, commonly referred to as "Pāhala Ash." According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Saito et al. (1973), the project area's soils consist of soils from the Waiala and Naalehu series (Figure 9). The northern half of the project area is Waiala silt loam, 0 to 10% slopes (WAC), with two small areas along the edges overlapping Waiala silt loam, 10 to 20% slopes (WAD). The southeastern portion of the project area is Waiala very rocky silt loam, 10 to 20% slopes (WKD). The remaining central and southern portions of the project area are</p>
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	<p>Naalehu silty clay loam 0%-10% slopes (NaC) and Naalehu silty clay loam 10%-20% slopes (NaD) (see Figure 9).</p> <p>Waiaha soils are described as</p> <p>shallow, well-drained silt loams that formed in volcanic ash. These soils are nearly level to moderately steep and most areas are extremely stony. [...] The natural vegetation consists of Klawe, koa haole, natal redtop, lantana, guineagrass, and bermudagrass [...]</p> <p>Waiaha soils are used for pasture. [Sato et al. 1973:52]</p> <p>The WAC type which is predominate in the project area has a non-stony surface layer and "receives more rain during the winter than the extremely stony soil"; it is also used for orchards (Sato et al. 1973:53).</p> <p>Naalehu soils are described as</p> <p>well-drained silty clay loams that formed in volcanic ash. These soils are nearly level to steep [...]. The natural vegetation consists of Christmas berry, bermudagrass, guava, and kaimi cover [...]. Naalehu soils are used mostly for sugarcane. Small areas are used for pasture. [Sato et al. 1973:40]</p>
<p><b>Built Environment</b></p>	<p>The entire project area has been altered by agricultural, commercial, and residential development. The location of the potential package treatment plant area is currently an active macadamia nut orchard operated by Royal Hawaiian Orchards. This portion of the project area is on the southern outskirts of Pāhala Town, bound to the west by Maile Street, to the south by the Hawai'i Belt Road or Māmalaha Highway (State Inventory of Historic Places [SIHP] # 50-10-47-30187), to the north by additional macadamia orchard, and to the east by an unimproved jeep road separating the orchard from the Royal Hawaiian processing facilities. This road is bound to the east by a concrete flume extending <i>muka-maka</i> (from mountains to sea), located outside the project area. An unnamed paved roadway forms the approximate northern boundary of the proposed plant area; this road provides access to and from the Royal Hawaiian Orchards processing facility via Maile Street. Just inside the western boundary of the parcel parallel to Maile Street is another unimproved road, used to access the orchard. An earthen ditch is situated between this road and Maile Street, designed to channel run-off downslope. The orchard itself is bisected by a large, linear dozer push pile containing a row of trees forming additional windbreaks; unimproved access roads run along both sides of this push pile.</p> <p>The new sewer collection system proposed under Alternative 1 extends for the most part along existing paved County roadways</p>

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	<p>including Maile Street, Pīkake Street, 'Īlima Street, Huapala Street, Hīmano Street, Kāmānā Street, and Pāhala Street (see Figure 4). These roadways extend through predominantly residential areas of Pāhala Town. The portion of Maile Street in which the sewer line would be placed is located between the Pīkake Street/Old Camp Mill Road intersection and the Lower Moa'a Road fork. Remnants of the sugar mill and associated plantation structures are present on either side of Maile Street. Some of these structures are within the current project area.</p> <p>Three sewer line easements are proposed under Alternative 1 for portions of the sewer line not within County roadways. One of these easements would extend along the southernmost segment of Pīkake Street, which crosses privately owned TMK: (3) 9-6-005-044. This sewer line easement would also be within the existing paved roadway.</p> <p>Another easement extends from the eastern section of 'Īlima Street through the old Pāhala Sugar Mill maintenance yard at TMK: (3) 9-6-005-056. The maintenance yard property has been completely altered with the development of the sugar plantation and town. The property has been graded and contains structures, driveways, parking areas, and a portion of a roadway used to access Ka'ala Hiki Road/Pāhala Cane Haul Road. The easement extends between and around the existing historic structures on this parcel, including at least two large buildings situated within the current project area that remain in active use. This easement exits the property at Maile Street, where the line then extends southeast into TMK: (3) 9-6-002-018. The sewer line runs through the macadamia nut orchard where it would connect to the proposed package plant.</p> <p>The project involves the closure of the two existing LCCs (LCC 1 and LCC 2). LCC 1 is located in TMK: (3) 9-6-002-016 south of Maile Street, at the terminus of a sewer easement maintained by the County. The portion of the parcel containing LCC 1 and its associated easement is fallow cane land. LCC 2 and its tie-ins to existing sewer lines are located behind a private residence at TMK: (3) 9-6-016-041. This residential property comprises a main dwelling, outbuildings, driveway, and landscaped yard.</p> <p>The sewer collection and transmission lines overlap with the known boundaries of the "Pāhala Historic District." In the 1970s a historic district comprising the Pāhala Town area was identified by SHPD as a potential historic property and was designated SHP # 50-10-69-07362. CSH has been unable to obtain any documents (such as a NRP nomination form or state inventory form) describing this district and its contributing elements.</p>
<p><b>Background Research Methods</b></p>	<p>Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library</p>

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	<p>of the University of Hawai'i, the Hawai'i State Archives, the Hawaiian Mission Children's Society Library and Archives, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH Library were also consulted. In addition, Māhele records were examined from the Waihana 'Aina database (Waihana 'Aina 2023).</p> <p>This research provided the environmental, cultural, historic, and archaeological background for the project area.</p>
<p><b>Background</b></p> <p><b>Research Summary</b></p>	<p><u>Traditional Background</u></p> <p>Ka'u is a large district known for its dynamic natural environment and fierce people. The district of Ka'u is the southernmost and largest district of Hawai'i Island. The current project area is situated within the boundaries of the traditional land divisions or <i>chihpu'u</i> of Honamoa, Pāhala, and Pā'au'au 1 and 2. According to Handy and Handy (1972:564, 558), the upland portions of these land divisions in the vicinity of Pāhala were fine, arable lands that would have been used for scattered homesteads with cultivated fields and groves.</p> <p>In the pre-Contact period, inter-district competition resulted in the shifting dominance of the <i>alii</i> (chiefly class) of Ka'u with the rulers of Puna and Kohala. The chief Kalamani'opu'u ruled Ka'u during the eighteenth century just before the first European visitors began to record their early impressions of the land and its people.</p> <p><u>Early Historic Period</u></p> <p>Lt. James King of Captain Cook's expedition in 1779 recorded his impressions of this portion of the rocky Ka'u coast as "a prospect of the most horrid and dreary kind" (King 1784:104). Regardless of his first impression, the rich fishing grounds on the coast and the inland plantations provided Hawaiians with an abundance of resources, which supported a substantial population. Later visitors including Archibald Menzies (1920), a surgeon and naturalist on the 1794 voyage of Captain George Vancouver, and the Rev. William Ellis (1963), who traveled through Ka'u in 1823, encountered productive and populous villages along the coast and at inland places such as Wa'ohinu, west of the project area. Handy and Handy (1972:595-596) the village of Nā'ālehu as a similar pre-Contact habitation center. A prior archaeological study (McDermott et al. 1993) has documented evidence of a coastal pre-Contact village at Palima Point well <i>maka'i</i> of the current project area.</p> <p>The early post-Contact period was marked by a significant decline in the population of Ka'u, brought about by factors such as introduced</p>

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	<p>disease, outmigration to new commercial centers, and natural disasters (McDermott et al. 1993:23-24).</p> <p><u>The Māhele and the Kuleana Act</u></p> <p>In the mid-nineteenth century, the Kingdom of Hawai'i initiated a program of massive land reform known as the Māhele (land division of 1848) and Kuleana (land division, right, privilege, property) Act. Mid- to late nineteenth century Land Commission Award (LCA) records provide insight into former land use within the project area. According to Soehren (2019), Honamoa, Pāhala, and Pā'au'au were not named in the Māhele Book. However, a 1914 map (Figure 10) shows 1,950 acres in Honamoa awarded to the <i>alii</i> William Pitt Leleiohoku as LCA 9971:12.</p> <p>Waihana 'Aina (2023) indicates Moses Keawe claimed five <i>ʻāpana</i> (lots) in the vicinity of the project area as part of LCA 7312. Two of the five lots were awarded LCA 7312:1 comprised 1.5 acres located in Pā'au'au 2, approximately 1.5 km north of the project area along the "Kau-Volcano Road" (present Ka'ala'iki Road). LCA 7312:2 comprised 11.7 acres in Honamoa, located approximately 350 m northwest of the project area along the "CaneHaul Road"/Ka'ala'iki Road. Both of the awarded <i>ʻāpana</i> were house lots. The three <i>ʻāpana</i> not awarded comprised taro fields.</p> <p>LCA 10248 to Mahi was also awarded in Pā'au'au 2. This award comprised 13 acres straddling the "Kau-Volcano Road"/Ka'ala'iki Road adjacent to LCA 7312:1, approximately 1.5 m north of the project area. Unfortunately, the testimony for this award does not provide information about land use. No <i>halema</i> are indicated within Pā'au'au 1 or Pāhala.</p> <p>Waihana 'Aina (2023) lists four land grants in Pāhala-Pā'au'au: Land Grant 01370 to Nahala, 02446 to Kamalo (overlapped by the project area), 02655 to Nahala, and 02727 to F.S. Lyman. In addition to these, Pā'au'au also contained Land Grant 03533 made to the trustees of the Bernice Pauahi Bishop Estate; this grant is also overlapped by the project area. Soehren (2019) notes that Grant 03533, which also included lands at Kāunakakai on Mōlōkai and Honouliuli and Ka'akaukūkau on O'āhu, was made "in exchange for qitcāināin deed to certain lands in Hilo." Grants 01370 and 02655 are located <i>mauika</i> (inland) of the "Kau-Volcano Road"/Ka'ala'iki Road. Grants 02446, 02727, and 03533 are depicted on the 1914 map (see Figure 10) in relation to the project area. Figure 10 also indicates a fifth grant in upland Pāhala: Land Grant 01374 to Keawe. This grant, comprising two separate <i>ʻāpana</i>, is listed on Waihana 'Aina (2023) as located in Kopu-Maouia a short distance east of Pāhala. Figure 10 indicates the</p>
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<p>portion of Land Grant 01374 north of the project area is . Apana 2. No Land Grants are indicated within Hionamoa.</p>	<p><b>Mid-to-Late 1800s</b></p> <p>The middle to late nineteenth century was characterized by the development of commercial endeavors in Ka'ū, including the export of agricultural products and livestock and cattle ranching. Commercial production of wheat was attempted but failed [Kuykendall 1966:150]. During the 1860s <i>pulu</i> (a soft, floppy, yellow wool on the base of tree-fern leaf stalks [<i>Cibotium</i> spp.] used for stuffing mattresses and pillows) constituted the major export crop from Ka'ū, but the industry had a negative impact on the native peoples it employed (Shipman 1860:4).</p> <p>Life in Ka'ū during the 1860s was further disrupted and devastated by the forces of nature. A sequence of major earthquakes and eruptions of Mauna Loa beginning in March 1868 resulted in many deaths and losses of property and livestock (National Park Service 2023). An earthquake in early April precipitated a tidal wave that destroyed coastal villages, dislodged a cliff side at Kapapala blanketing the land below and burying a village, and opened the Great Crack at Kīlauea (located approximately 2.5 miles east of Pāhala), emptying the crater's lava lake into Punalu'u and Keaunou in Ka'ū. A subsequent lava flow, this time in western Ka'ū, buried all of Wai'āhukini Valley west of the great cliff or <i>pali</i>.</p> <p>In 1870 Alexander Hutchinson established the Naalehu Sugar Company and built a mill at Nā'ālehu just east of Wai'ōhū (Dorrance and Morgan 2000:108), kicking off the era of sugar cultivation within Ka'ū. During the mid-1870s Waiōhū Plantation was established by John Nott and Company. This operation was bought out in 1877 by Alexander Hutchinson who at the same time founded Hīlea Plantation. By the end of the 1870s, sugar mills were operating at Nā'ālehu, Hīlea, and Honu'apo. Though Hutchinson died in 1879, his name survived in the Hutchinson Sugar Company which during the remainder of the nineteenth century continued to expand and consolidate existing plantation operations in Ka'ū (Dorrance and Morgan 2000:109).</p> <p>Another plantation operation, the Hawaiian Agricultural Company, was established in Pāhala in 1876 by a consortium of Honolulu businessmen (Dorrance and Morgan 2000:110). An 1877 map of the Hawaiian Agricultural Company sugarcane lands (Figure 11) shows the Pāhala Mill located within the southern-central portion of the project area. The western portions of the project area including the proposed plant site are indicated to overlap lands already planned in cane, while the eastern portions of the project area overlap presumably</p>
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<p>unplanted areas labeled as "Good, Stony land." No roads or trails are depicted. An 1886 map (Figure 12) also depicts the location of the mill at the "Pāhala Plantation," as well as the Hutchinson Sugar Company mills at Hīlea, Honu'apo, and Nā'ālehu to the southwest and the associated wharves at Honu'apo and Punalu'u. Dorrance and Morgan (2000:110) note that Pāhala's "steam driven mill was the most modern and largest in the islands." Figure 12 curiously depicts the project area overlapping land divisions called "Nakumu" and "Makaka;" no information about these place names was found, though Ellis (1963:146) does mention a hamlet by the name of "Makakaka" located in the uplands between Punalu'u and Ka'ala'ala. Figure 12 also illustrates three travel routes extending through the Pāhala vicinity: two routes extend from Nā'ālehu northeast, one along the coast and one <i>manuka</i>, joining and continuing northeast above Pāhala Mill. Another route is shown extending northeast from Nimo'e/Punalu'u through Pāhala, parallel and <i>makai</i> of the Nā'ālehu route.</p> <p>By the end of the nineteenth century the Hawaiian Agricultural Company controlled almost 10,000 acres of cane land and constituted the largest plantation in the Hawaiian Islands. The extensive agricultural endeavors taking place in Ka'ū at this time were also altering the social landscape. Beginning the late 1800s Chinese laborers were brought in, followed by Japanese, Portuguese, and other ethnic laborers; Filipinos began arriving during the first decade of the twentieth century (Dorrance and Morgan 2000:127-129). Ethnic workers' camps were built surrounding the mill at Pāhala. As the town around the mill developed, a school was established at Pāhala in 1881.</p> <p><b>Twentieth Century</b></p> <p>A 1906 map (Figure 13) depicts the location of a school approximately 0.5 miles north of the current Ka'ū High and Pāhala Elementary School (KHPEs) campus location, and a post office in the vicinity of the project area. Figure 13 also illustrates the approximated boundaries of sugar plantation lands (in red) in relation to the forest lands <i>manuka</i> (in blue) and grazing lands east associated with Kapapala Ranch. The continued development of roadways in the vicinity of Pāhala Town is also depicted, with the addition of <i>manuka-makai</i> and lateral routes between the mills at Honu'apo and Pāhala (see Figure 13). The portions of these roadways in closest proximity to Pāhala are shown in more detail on the 1914 map (see Figure 10); the uppermost road shown is labeled "Kau-Volcano Road." The lower roadway extending through Pāhala plantation is not named.</p> <p>The 1914 map (see Figure 10) includes some additional details about the Pāhala vicinity. A trail is depicted with a dashed line, crossing the northern portion of the project area and continuing off the map to the east and west. It is unlikely that any portion of this trail remains within</p>	
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<p>the town vicinity, which has been completely altered by agricultural and residential development. Furthermore, a meandering "Plantation Railroad" is shown, extending southwest roughly parallel to the unnamed roadway and then curving back to the east where it stops abruptly. Presumably this limited railroad was used to carry cut cane to the mill from some of the nearby fields. More remarkable upon the physical landscape at this time must have been the systems of flumes for transporting cane from fields to mills; this was the main method of transporting cane at the time.</p> <p>Railway development continued, with the establishment of lines running from Nā'alehu and Hīlea to Honu'apo and from Punalu'u to Pāhala. A 1929 map of Hawaiian Agricultural Company cane fields (Figure 14) depicts the route of the rail line extending from the mill across through the narrow central portion of the project area and to the west; also shown are the major roadways of the time merging along the present Maile Street corridor. The 1930 USGS topographic map (Figure 15) shows the Pāhala area in better detail, including the narrow-gauge rail line running to Pāhala parallel to the coastal road from Punalu'u. The expansion of the town is evident on this map, which includes additional rows of structures along roadways and around the mill, as well as the locations of the school (still north of the present campus), a church, a pipeline, and a large stone wall to the southeast of the town. The route of the major roadway crossing through Pāhala Town, labeled "Volcano Road," utilizes a new eastward extension, with the portion of the older alignment that extended north from the town now labeled "Wood Valley Road."</p> <p>The flumes and railroads in Ka'i'i were abandoned by the 1940s with the advent of trucking for harvesting and transportation of cane. In the 1940s the Belt Road or Māmalaha Highway (Route 11) was constructed through Ka'i'i, running just <i>naka'i</i> of Pāhala Town. A 1967 USGS map (Figure 16) shows this new route and the continued development of the town. By this time the school had moved southwest into the heart of the town, and a landing strip had been constructed to the northeast. All of the older road alignments are still depicted, but not as major roadways, with the exception of Route 15 looping off the Belt Road along present Maile Street and Kamani Street. During this latter half of the twentieth century the residential side-streets within Pāhala were also improved with paving and installation of the culvert at the Hualapa and 'Ilima streets intersection.</p> <p>The 1940s Belt Road alignment appears on a portion of an undated Olson Trust map (Figure 17) reprinted in Cleghorn (2016:13). Hand-drawn annotations indicate some land uses in the area dating to the 1960s and 1970s. This map indicates the WWT/P site and adjacent areas were under pasture; the easement extending to Maile Street also</p>
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LR for the Pāhala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'i'i, Hawaii; 11

TMA's: multiple

<p>crosses through a rectangular area labeled "Cane Area Planted Aug. 1966" and a fence line "Plotted Oct. 1961." Also significant are the locations of a "Cesspool" (LCC 1), and a concrete flume and lava tube located east of the proposed WWT/P site. This map appears to depict a portion of the former narrow-gauge railroad following a "1.8% grade west of the easement extending south from Maile Street; this illustration may indicate disturbance to or dismantling of the former railroad route by the mid-twentieth century in the area crossed by the easement. The Olson Trust drawing also depicts numerous structures along Maile Street, many of which are no longer present.</p> <p>A 1977 aerial photo (Figure 18) indicates further expansion of the town to the east amidst large agricultural plots. Note that the proposed WWT/P plant site portion of the project area is not cultivated in sugarcane at this time; instead, these former cane fields were being readied for planting of the macadamia orchard that is now fully matured.</p> <p>The Hawaii Agricultural Company operated until 1972 when it merged with the Hutchinson Sugar Company to form the Kau Sugar Company, which was renamed the Kau Agribusiness Company in 1986 (Dorrance and Morgan 2000:112). Following the demise of the sugar industry in other parts of the island, Kau Agribusiness Company ceased its sugar operations in 1996 (Dorrance and Morgan 2000:112).</p> <p><b>Contemporary Land Use</b></p> <p>Pāhala continues to serve a small rural population supported by predominately agricultural and livestock economies. The town is also used as a stop-over for tourists visiting Punalu'u Beach located 5 miles southwest and/or travelling between Hilo and Kailua-Kona.</p> <p>Nine previous archaeological studies have been conducted in the vicinity of the current project area in Pāhala. These previous archaeological studies are shown Figure 19 and summarized in Table 1.</p> <p>In 1981, Hamilton Ahlo undertook an archaeological reconnaissance for the U.S. Army Corps of Engineers Pā'au'au Stream Flood Control project, located east of the current project area along the Pā'au'au 2 and 'Ihokoloa Ahupua'a boundary (Ahlo 1981; see Figure 19). The study examined an approximately 1.2-km (4,000-ft) section of Pā'au'au Stream just <i>naka'i</i> of the Hawaii'i Belt Road (Route 11) and the adjacent embankments. Extensive prior disturbance was noted along both sides of the stream; no archaeological features were documented, and no further work was recommended.</p> <p>In 2001, Haun and Associates conducted an archaeological assessment (no finds AIS) for an emergency replacement of the Pā'au'au Bridge, situated east of the current project area along the Hawaii'i Belt Road in</p>
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LR for the Pāhala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'i'i, Hawaii; 12

TMA's: multiple

<p>Pā'au au 2 and 'Ihiokoioa (Haun 2001); see Figure 19). The 5.256-acre project area included the bridge over Pā'au au Gulch, the approaches on either side of the bridge along the highway, and adjacent areas to the east. Significant prior disturbance from agricultural and road development and a major flooding event were noted. No archaeological features were documented, and no further work was recommended.</p>	<p>In 2004, Haun and Associates conducted an AIS on 255.7 acres in Palima and Pā'au au Ahupua'a, northwest of the current project area (Haun and Henry 2004; see Figure 19). The study confirmed extensive prior disturbance from modern and historic agricultural activity dating back to the latter half of the nineteenth century. One newly recorded historic property was documented: SHP # -24119, a 105-m-long section of a historic irrigation flume associated with the former sugar plantation (Figure 20). No traditional sites were identified, and no further work was recommended.</p>
<p>In 2006, T. S. Dye &amp; Colleagues, Archaeologists, Inc. conducted an archaeological assessment of a proposed cellular site within a 1,600-sq-ft portion of TMK: (3) 9-6-005:018, northwest of the current project area in Pālima and Pā'au au 1 Ahupua'a (Jourdan and Dye 2006; see Figure 19). Prior disturbance associated with commercial agriculture was noted. No archaeological features were observed.</p>	<p>As part of a state-wide Department of Education (DOE) wastewater systems improvement project, CSH undertook a literature review and field inspection (LRFI) for two Ka'i District schools, including KHPEs located between the northern portions of the project area (Hammat and Shideler 2006; see Figure 19). The LRFI included background research for the Pāhala area including LCA data and previous archaeological studies in the vicinity and noted that the school is listed on the Hawai'i Register of Historic Places (HRHP) under the thematic group "Public Schools on the Island of Hawai'i" (SHP # 50-10-69-07522; see Figure 20). Hammat and Shideler (2006:27) recommended on-site archaeological monitoring for the project.</p>
<p>In 2009 CSH monitored the DOE wastewater systems improvements project at KHPEs (Wilkinson et al 2010; see Figure 19). The project involved the installation of a new leach field, eight septic tanks, and associated sewer lines. While no subsurface cultural deposits were located during excavation, a lava tube system was breached and assigned a site number (SIHP # 50-10-69-27570) despite an absence of cultural modifications to the breached portion of the tube system. The location of SIHP # -27570 is shown on Figure 20.</p>	

LR for the Pāhala LCC Closure Project, Honamoa, Palima, and Pā'au au 1 and 2, Ka'i, Hawai'i  
 TMKs: multiple  
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<p>In 2012, Scientific Consultant Services, Inc. conducted an AIS for a proposed gymnasium and disaster relief shelter within a 4.5-acre portion of the KHPEs campus, adjacent to but outside the northeastern portion of the current project area (Escott 2013; see Figure 19). The SIHP # -27570 lava tube system was also explored and mapped. A burial site was found within the tube and designated SIHP # 50-10-69-29501 (see Figure 20). This burial is located away from the limits of the current project area. Escott (2013) describes the lava tube system as follows:</p>	<p>The lava tube system containing Site 27570 and Site 29501 has three main branches converging near the tube system opening under a modern storm drain grate [Figure 21]. The southern branch does not contain archaeological sites. Sites 27570 and 29501 are located in the northern and western branches of the tube system, respectively.</p> <p>The western branch includes two tubes that are situated parallel to each other and are connected at two points. The western branch of the tube system is closed off by collapse at its western terminus. Site 29501 is located in the northern tube of the western branch, roughly 35.0 meters in from the storm grate opening [Figure 22].</p> <p>The northern branch of the tube system is accessed through an opening in the floor of the western tube system. The floor of the northern branch is approximately 3.0 meters below the floor of the western branch tube [Figure 23]. [Escott 2013:17]</p> <p>Full descriptions of SIHP #s -27570 and -29501 adapted from Escott (2013) are provided in Appendix C. SIHP # -27570 contains three non-burial features; based on the extent of the tube shown in Figure 21, Feature 3 may be situated within a portion of the tube underlying TMK: (3) 9-6-020:003 which is within the current project area. Feature 3 is described as a low rock alignment located at the northeast terminus of the northern branch of the lava tube. No other archaeological features were located within the 4.5-acre project area. Escott (2013:36) noted SIHP # -29501 would "be preserved in accordance with a Hawai'i Island Burial Council-approved Burial Treatment Plan," and recommended archaeological monitoring of any future ground disturbing work "near the northern and western branches of the tube system."</p> <p>In 2016 Pacific Legacy conducted an archaeological field inspection of TMK: (3) 9-6-002:018, addressing an earlier and larger version of the WWTTP project (Cleghorn 2016; see Figure 19). Extensive</p>
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LR for the Pāhala LCC Closure Project, Honamoa, Palima, and Pā'au au 1 and 2, Ka'i, Hawai'i  
 TMKs: multiple  
 14

<p><b>Potential for Project Effect on Historic Properties</b></p>	<p>disturbance associated with the development of the macadamia nut orchard was noted. Surface artifacts were encountered within a portion of the macadamia nut orchard that is no longer within the project area limits (see Figure 20). These artifacts included a single traditional hammerstone and fragmental historic glass and ceramics. The report also discussed a lava tube known to exist between the vicinity of the present Royal Hawaiian Orchards processing plant and KHPES; an opening to the tube on the processing plant property was filled in sometime in the past to prevent access. Pacific Legacy recommended discussion with SHPD regarding project historic preservation requirements, noting that an AIS would likely be required. It was also recommended that the vicinity of the lava tube entrance known to exist near the processing plant be excluded from the project area (Cleghorn 2016:7).</p> <p>Most recently, CSH undertook an AIS for the prior Pāhala Wastewater Treatment Plant and Sewer System project (Bautista et al. 2020; see Figure 19). The 2020 AIS project area comprised a 11.9-hectare (29.4-acre) portion of the current project area extent, and included the proposed plant site, pipeline easements located mostly along existing roadways, and the locations of the two LCCs slated for closure. Two newly documented historic properties were identified through background research: SHHP #s 50-10-69-31088 is the historic Wood Valley Road/Coastal Road corridor, and SHHP # 50-10-69-31089 is the historic Volcano Road corridor (Figure 24). Full site descriptions adapted from Bautista et al. (2020) are provided in Appendix C. Both sites were assessed as significant under Criterion d for yielding important information for research on former rights-of-way in Pāhala history. Constructed elements of the portions of these road alignments within the project area were determined to have been thoroughly impacted by the development of modern roadways, becoming Maile Street and Pkake Street in Pāhala Town within the original corridors. Due to the impacts and changes to these roads in Pāhala over time, the AIS determined these historic properties only retain integrity of location. They were assessed as significant under Criterion d per HAR §13-275-6 for the information they have yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries. No further work was recommended. Other historic buildings associated with the former sugar plantation were noted nearby but outside the AIS project area.</p> <p>Two historic properties were previously located within the project area during the Bautista et al. (2020) AIS: SHHP # -31088 (historic Wood Valley Road/Coastal Road corridor) and SHHP # -31089 (historic Volcano Road corridor). These sites were determined to retain</p>
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	<p>integrity of location only and recommended for no further work (Bautista et al. 2002:iv-v).</p> <p>The project area may overlap the northeastern terminus of the northern branch of lava tube system SHHP # -27570, previously documented by Wilkinson et al. (2010) and Escott (2013). While the previously documented extent of this lava tube system is generally understood to lie beneath the Kaʻi High and Pāhala Elementary School campus (including the portion containing burial site SHHP # -29501), a small portion of the system in the vicinity of Feature 3 (rock alignment) may extend beneath adjacent parcel TMK: (3) 9-6-020/003, which is within the current project area.</p> <p>The project area is within the “Pāhala Historic District” (SHHP # -07362). CSH has been unable to obtain any documents (such as a NRHP nomination form or state inventory form) describing this district and its contributing elements. Several of the historic buildings within the project area associated with the former plantation village may be considered contributing architectural elements to this district. These include:</p> <ul style="list-style-type: none"> <li>• A plantation-era building containing the offices of Olsen Trust at TMK: (3) 9-6-016/011 at the Pkake Street and Maile Street intersection (Figure 25)</li> <li>• Plantation-era buildings and structures in current commercial use and the Corliss steam engine monument at TMK: (3) 9-6-005/036 located along Maile Street (Figure 26 through Figure 28)</li> <li>• A plantation-era store building located at TMK: (3) 9-6-015/034 along Maile Street (Figure 29)</li> <li>• A plantation-era shop building next to the remnant foundation of the old theater building along Maile Street, and other plantation buildings located along Mill Camp Road within TMK: (3) 9-6-002/016 (Figure 30 and Figure 31)</li> <li>• A plantation-era residence located at TMK: (3) 9-6-002/056 along Maile Street (Figure 32)</li> <li>• Other plantation-era homes located throughout the project area</li> </ul> <p>The County has stated that none of the buildings or structures within the project area will be impacted by project development. Based on this statement and the general nature of the project, no impact on the “Pāhala Historic District” is indicated.</p> <p>Three other historic properties are located outside but near to the project area, including:</p>
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<ul style="list-style-type: none"> <li>• A burial site (SIHP # -29501) within lava tube system SIHP # 50-10-69-27570 located beneath the Ka'u High and Pahala Elementary School campus</li> <li>• Ka'u High and Pahala Elementary School (SIHP # 50-10-69-07522), a National Register-eligible historic property</li> <li>• The Hawai'i Belt Road, (SIHP # 50-10-47-30187), a National Register-eligible historic property south of the project area</li> </ul> <p>Impacts to these historic properties are also not anticipated.</p> <p>Given the known traditional land use in this area and the impacts of continued agricultural and residential development, surface pre-Contact sites are not expected within the project area. The modern development of the macadamia nut orchard has likely also obliterated any plantation-era sites once present in that part of the project area. Historic surface features associated with the sugar plantation and associated village may be present. Furthermore, there is potential for pre- or post-Contact subsurface archaeological features within the project area, which may or may not be located within lava tubes.</p>	<p><b>Recommendations</b></p> <p>Expansion of the project area and changes to the type and configuration of the proposed wastewater treatment system requires that we recommend early and continued consultation with SHPD about historic preservation requirements.</p> <p>The proposed WWT/P and effluent disposal site is within the same 14.9-acre plant site covered in the Bautista et al. (2020) AIS. The SHPD on 20 February 2020 provided concurrence with the DEM's determination of no historic properties affected based on the findings of the Bautista et al. (2020) AIS.</p> <p>The expanded project now includes many individual house lots and commercial properties, which may contain historic buildings of architectural importance. The County has indicated no buildings or structures will be impacted by the project, but the grounds surrounding an historic structure where the IWS alternatives would be installed usually contain elements of the historic property.</p> <p>We recommend consultation with the SHPD to determine if the revised project may follow the existing the existing monitoring plan, but with amendments. The SHPD-accepted monitoring plan (Wilkinson and Hamnart 2020) addresses only some elements of the four proposed alternatives. We believe an amendment could satisfy any elements of the selected alternative not covered in the plan.</p>
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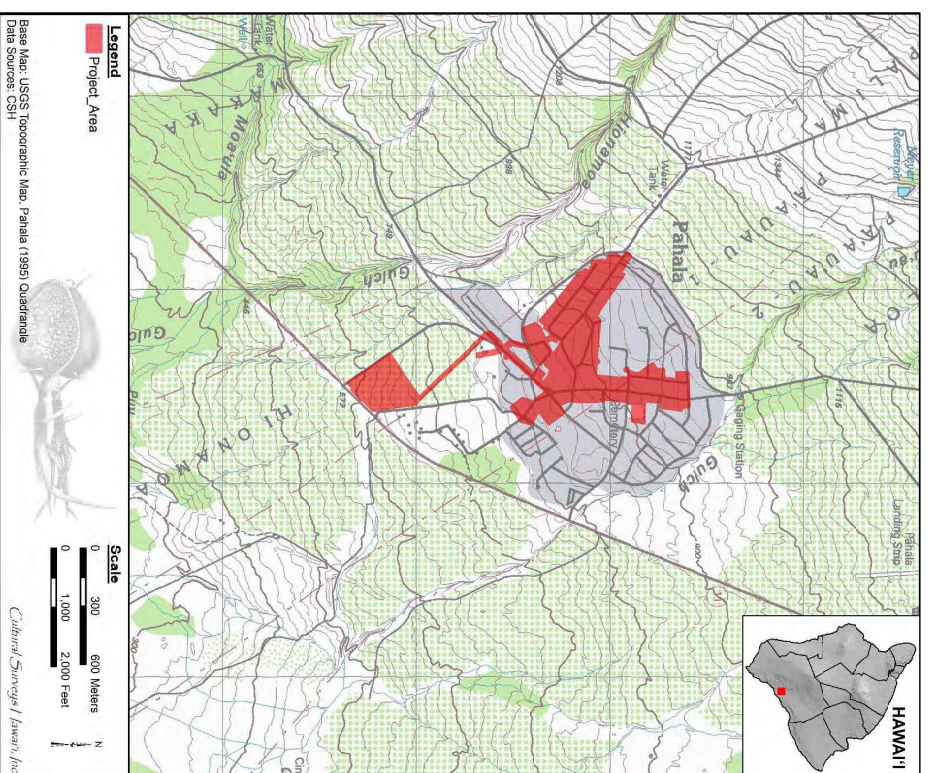


Figure 1. Portion of the 1995 Pahala USGS 7.5-minute topographic quadrangle showing the location of the project area

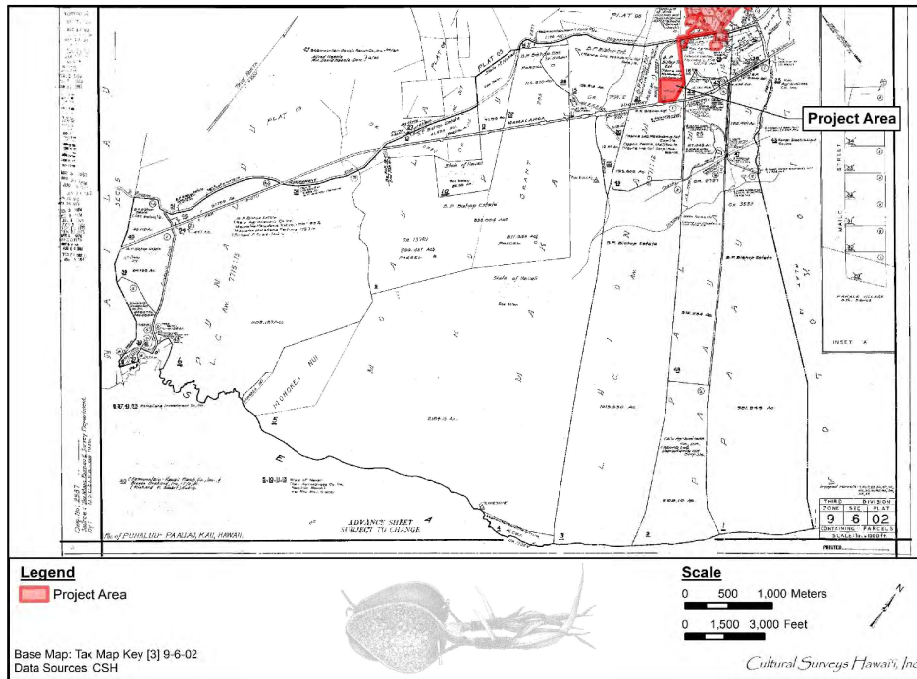


Figure 2. TMK: (3) 9-6-02 showing the project area (Hawai'i TMK Service 2023)

LR for the Pāhala LCC Closure Project, Hionamoa, Pālima, and Pā'au'au 1 and 2, Ka'ū, Hawai'i  
 TMKs: multiple



Figure 3. TMK: (3) 9-6-05 showing the project area (Hawai'i TMK Service 2023)

LR for the Pāhala LCC Closure Project, Hionamoa, Pālima, and Pā'au'au 1 and 2, Ka'ū, Hawai'i  
 TMKs: multiple

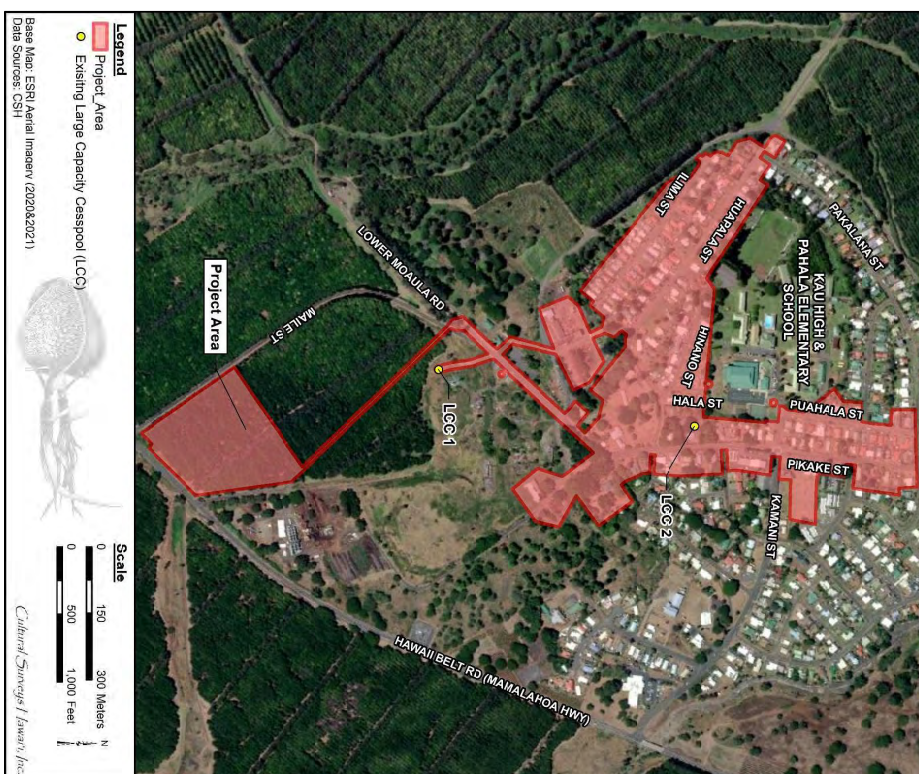


Figure 4. Aerial photograph (ESRI 2020-2021) showing the location of the project area and existing LCCs

LR for the Pāhala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMKS: multiple

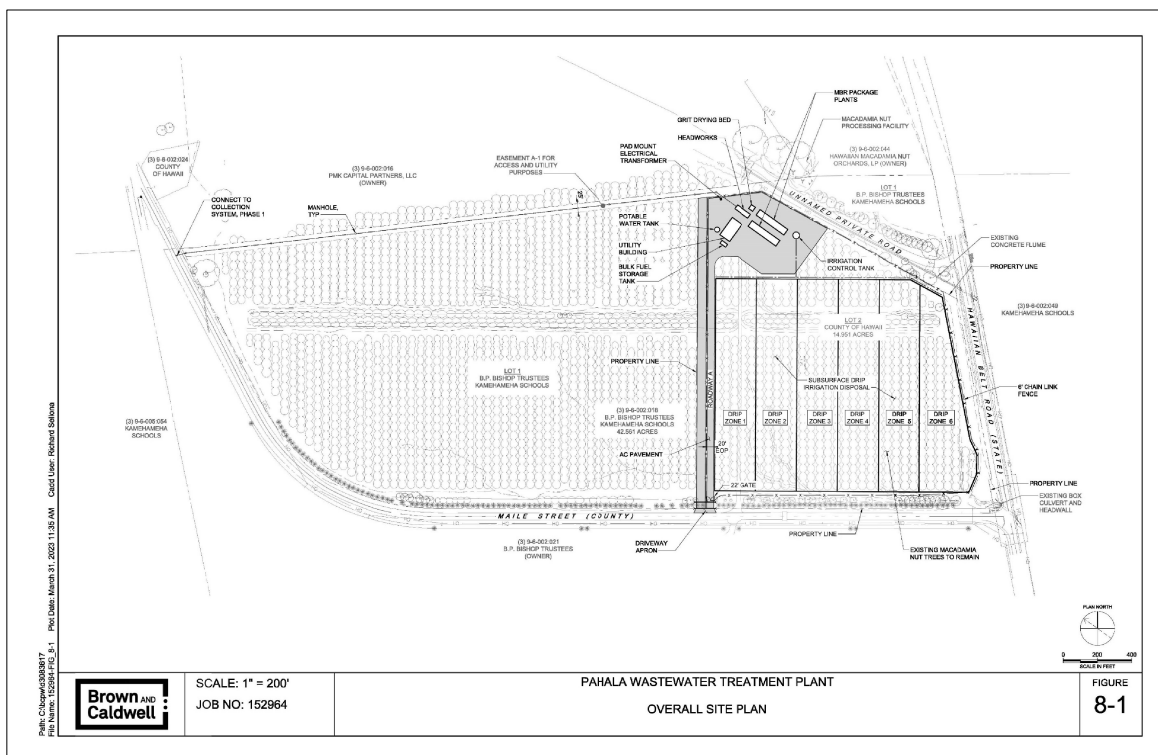


Figure 5. Overall site plan for proposed package plant (courtesy of client)

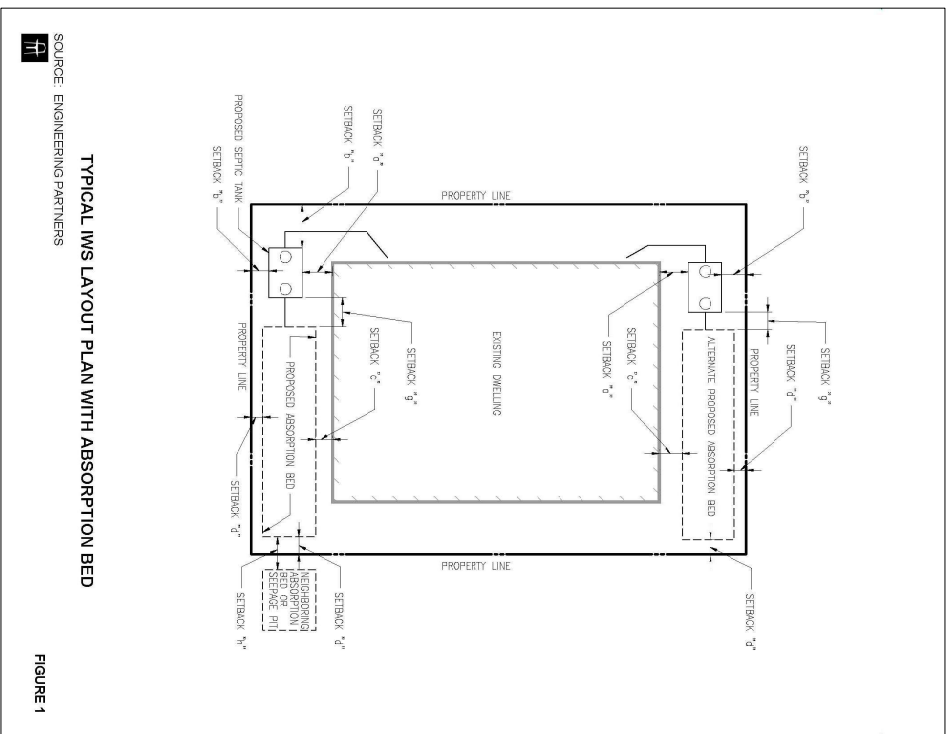


Figure 6. Typical IWS layout plan with absorption bed (courtesy of client)

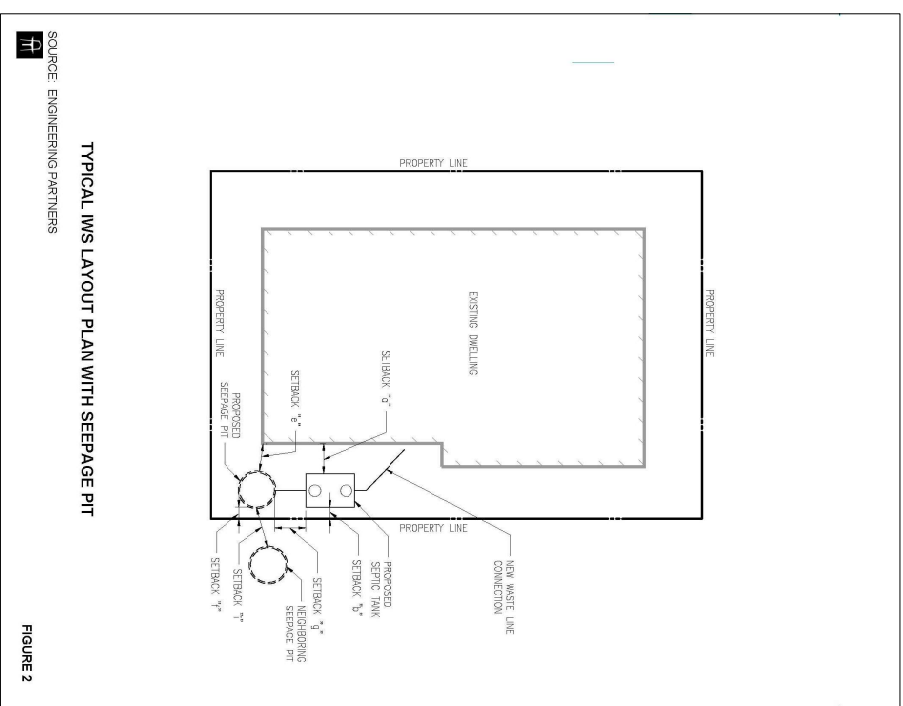


Figure 7. Typical IWS layout plan with seepage pit (courtesy of client)

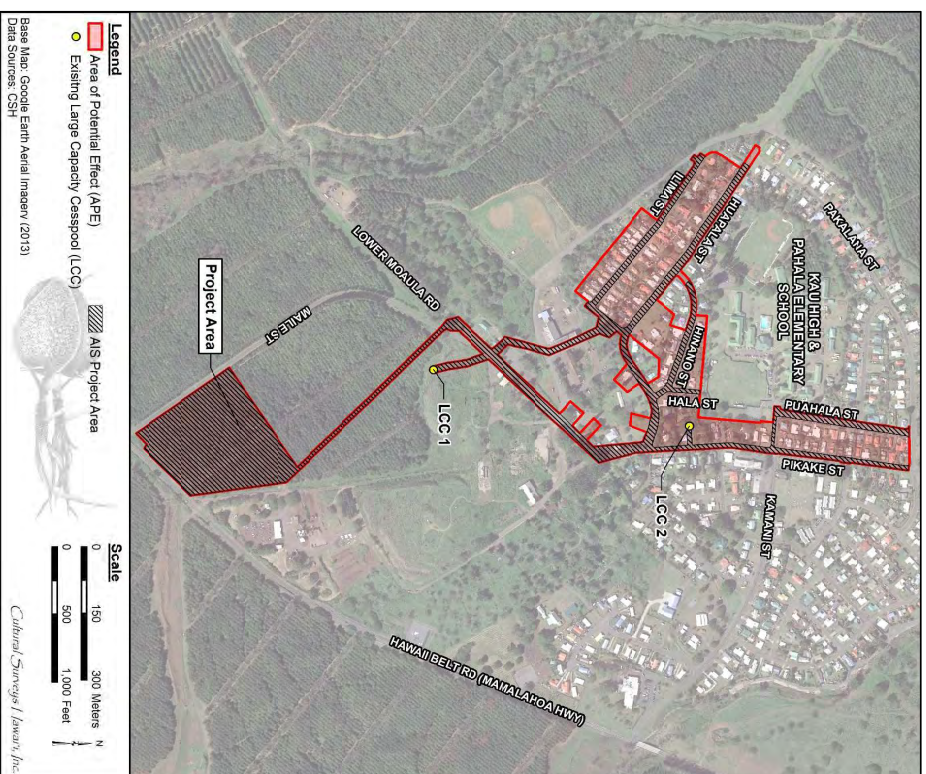


Figure 8. Map from Bautista et al. (2020:7) showing the configuration of the prior AIS project area within the greater project APE

LR for the Patula LCC Closure Project, Honamoa, Palima, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

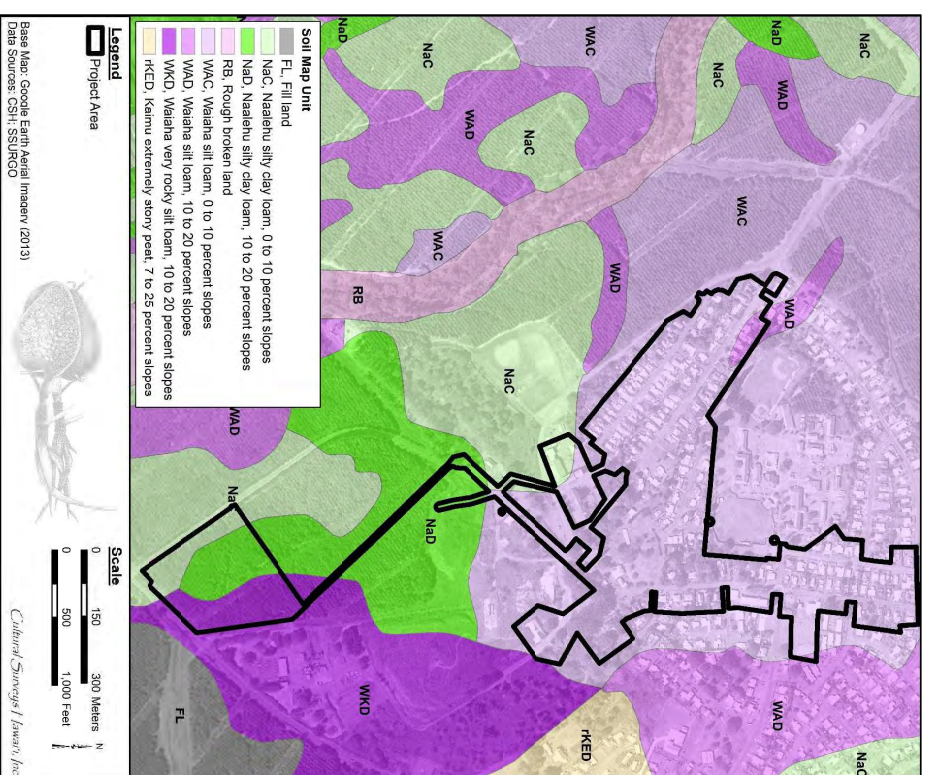


Figure 9. Overlay of Soil Survey of the Island of Hawaii (Sato et al. 1973) indicating soil types within and surrounding the project area (USDA SSURGO 2001)

LR for the Patula LCC Closure Project, Honamoa, Palima, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple



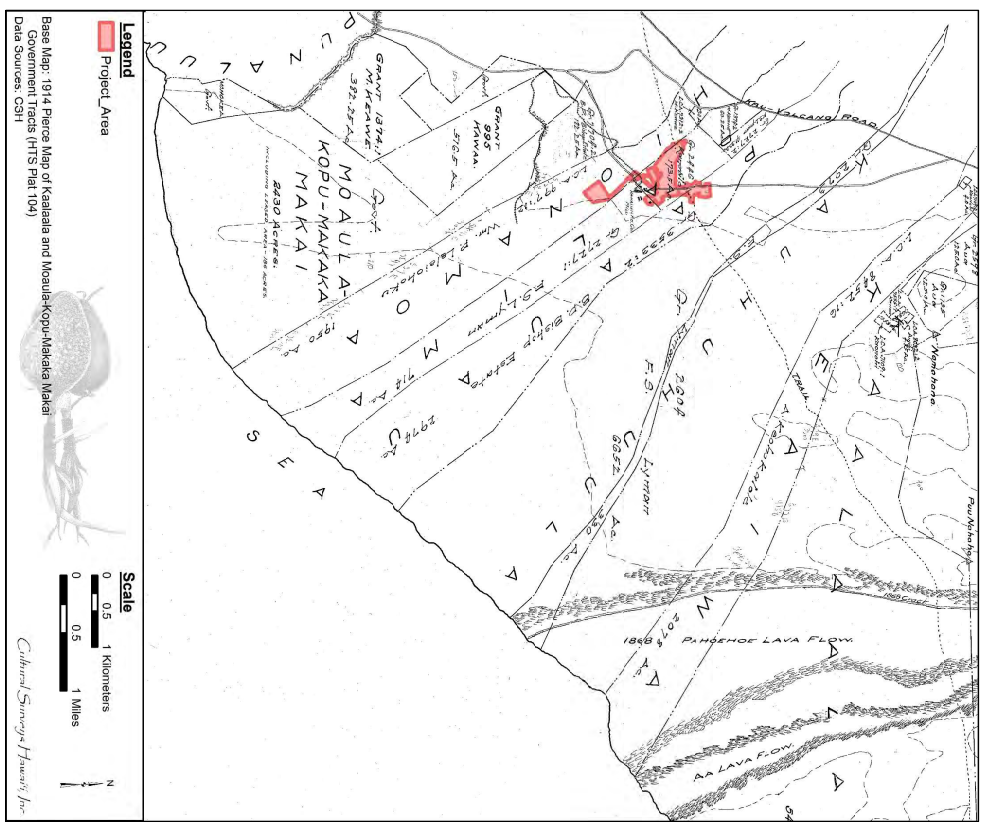


Figure 10. Portion of R. F. Pierce's 1914 map of Kalaala and Moaula-Kopu-Makaka Makai Government Tracts, showing the project area in relation to roads, trails, and the plantation railroad

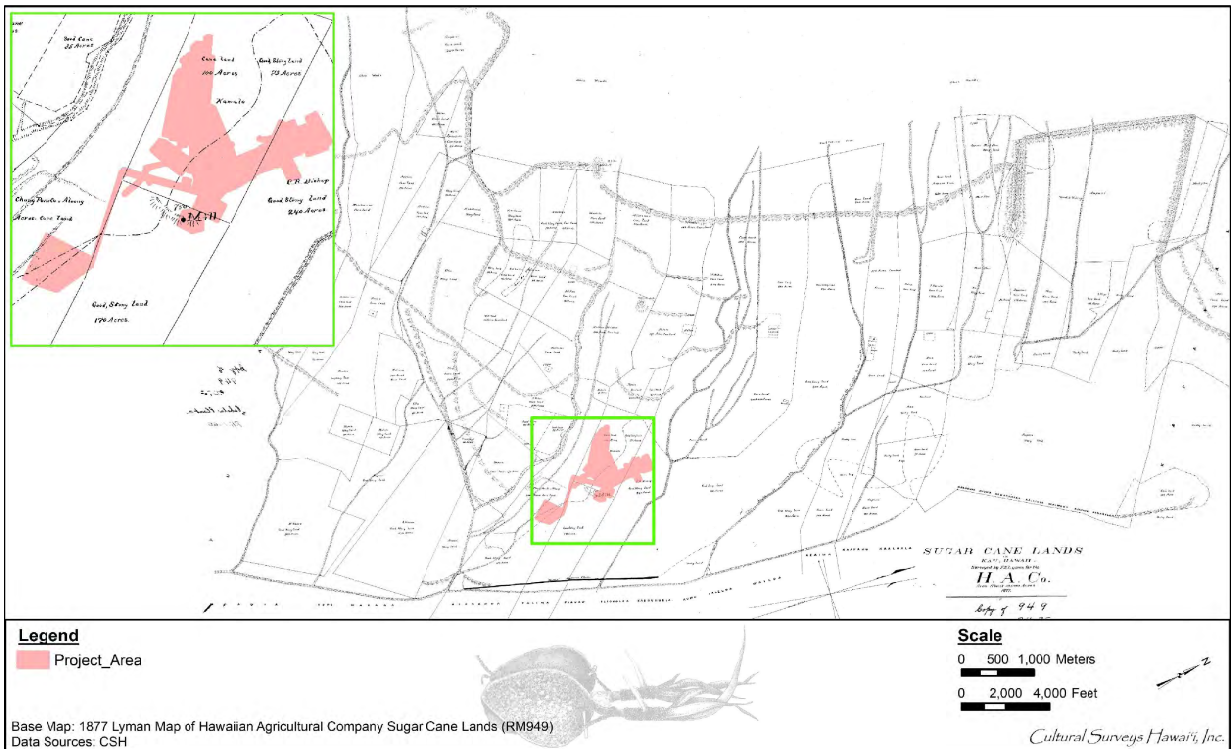


Figure 11. F.S. Lyman 1877 map of Hawaiian Agricultural Company sugarcane lands, showing the project area in relation to the Pāhala Mill and developed cane lots

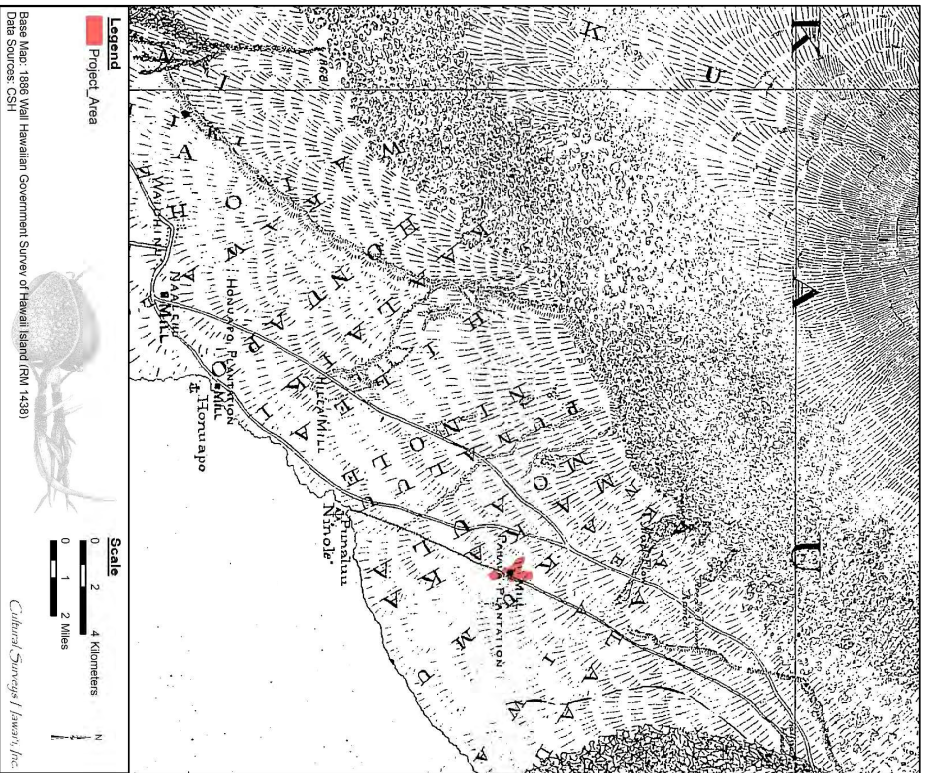


Figure 12. Portion of W. A. Wall's 1886 map of Hawai'i Island, showing the project area in relation to sugar mills and harbors in windward Ka'u

LR for the Pāhala LCC Closure Project, Honamoa, Pāhala, and Pū'au'au 1 and 2, Ka'u, Hawai'i  
 TMK's: multiple

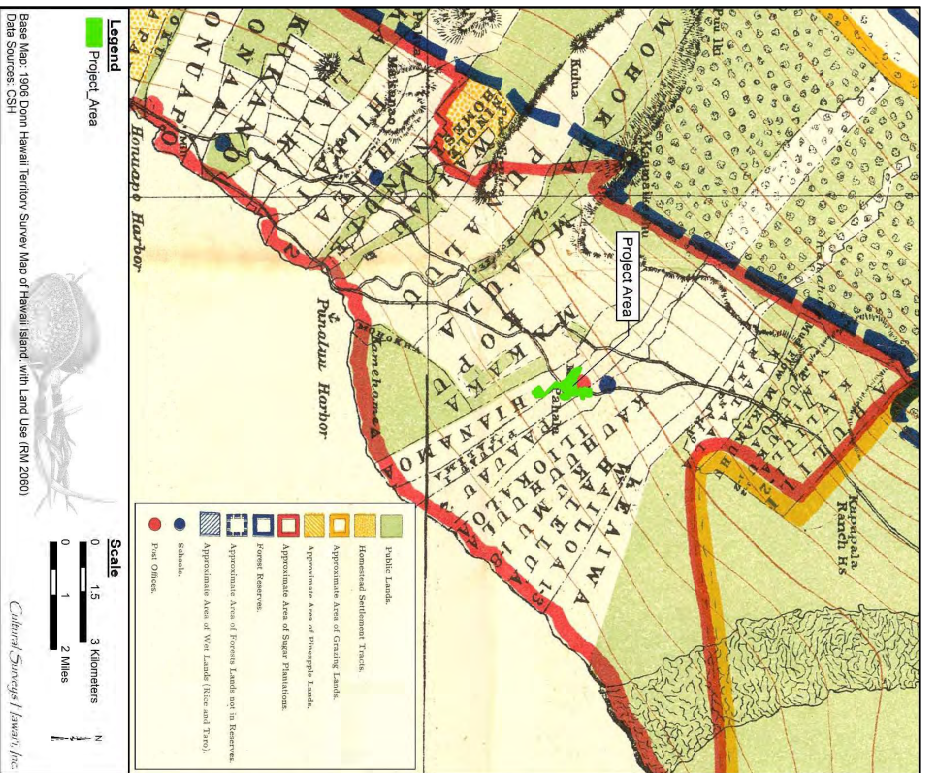


Figure 13. Portion of J.M. Donn's 1906 map of Hawai'i Island, showing the project area in relation to Pāhala Mill, school, post office, and areas of different land use

LR for the Pāhala LCC Closure Project, Honamoa, Pāhala, and Pū'au'au 1 and 2, Ka'u, Hawai'i  
 TMK's: multiple

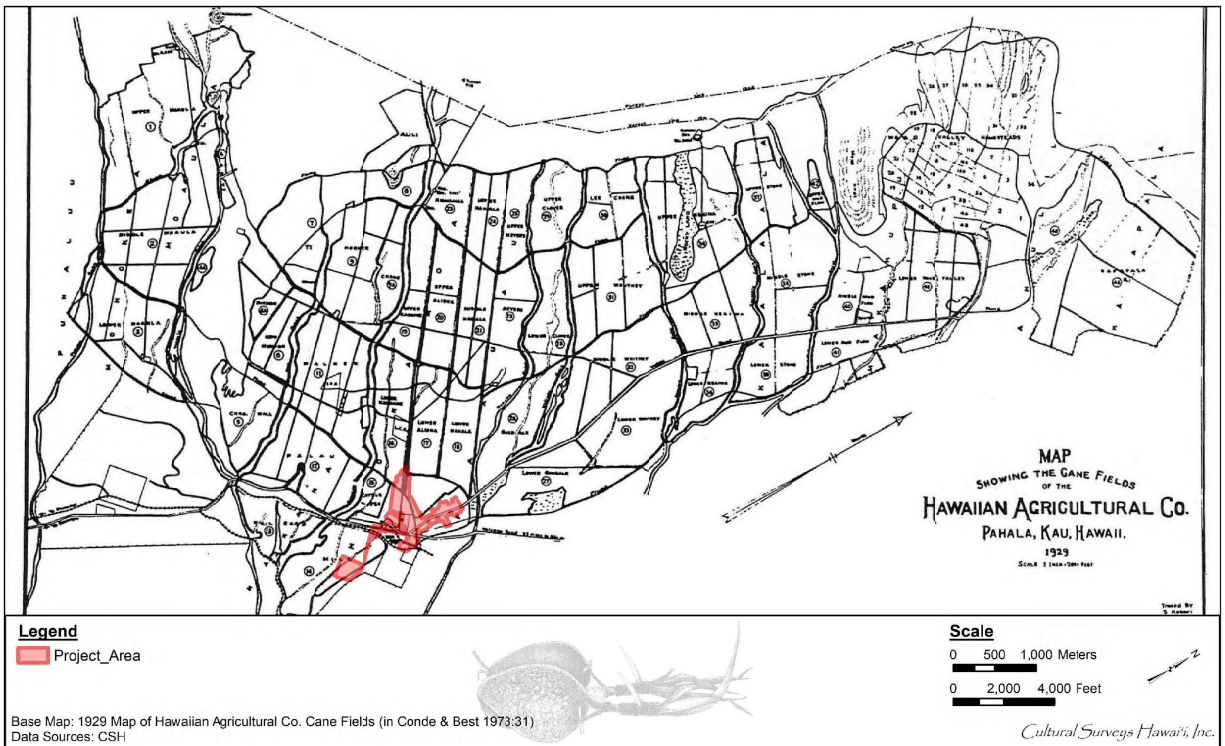


Figure 14. 1929 map of Hawaiian Agricultural Company cane fields, showing the location of the project area (Conde & Best 1973)

LR for the Pāhala LCC Closure Project, Hionamoā, Pālima, and Pū'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

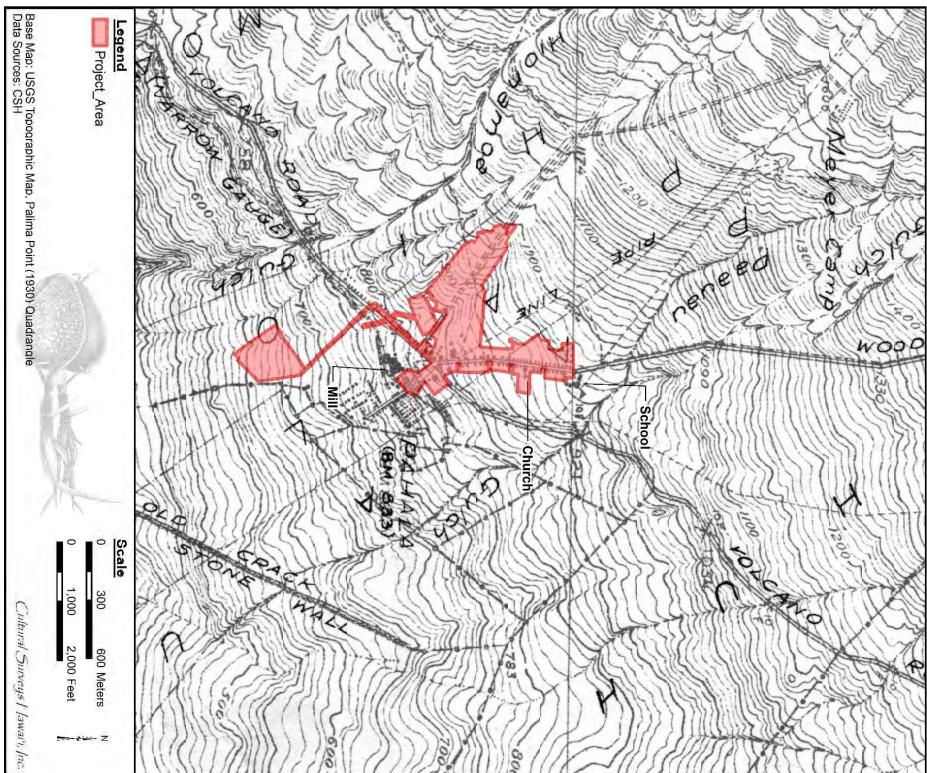


Figure 15. Portion of the 1930 Palima Point USGS 7.5-minute topographic quadrangle showing the project area in relation to the mill, school, church, roads, and railroad in the Pāhala vicinity

LR for the Pāhala LCC Closure Project, Hionamoā, Pālima, and Pū'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

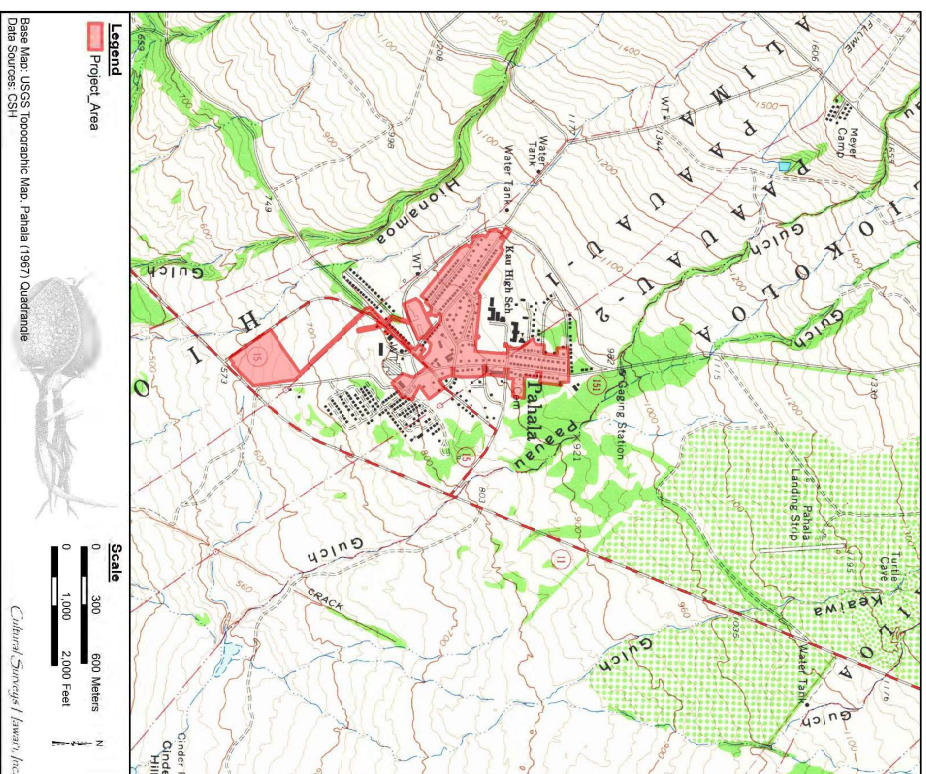


Figure 16. Portion of the 1967 Pahala USGS 7.5-minute topographic quadrangle showing the project area and development within Pahala Town

LR for the Pahala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

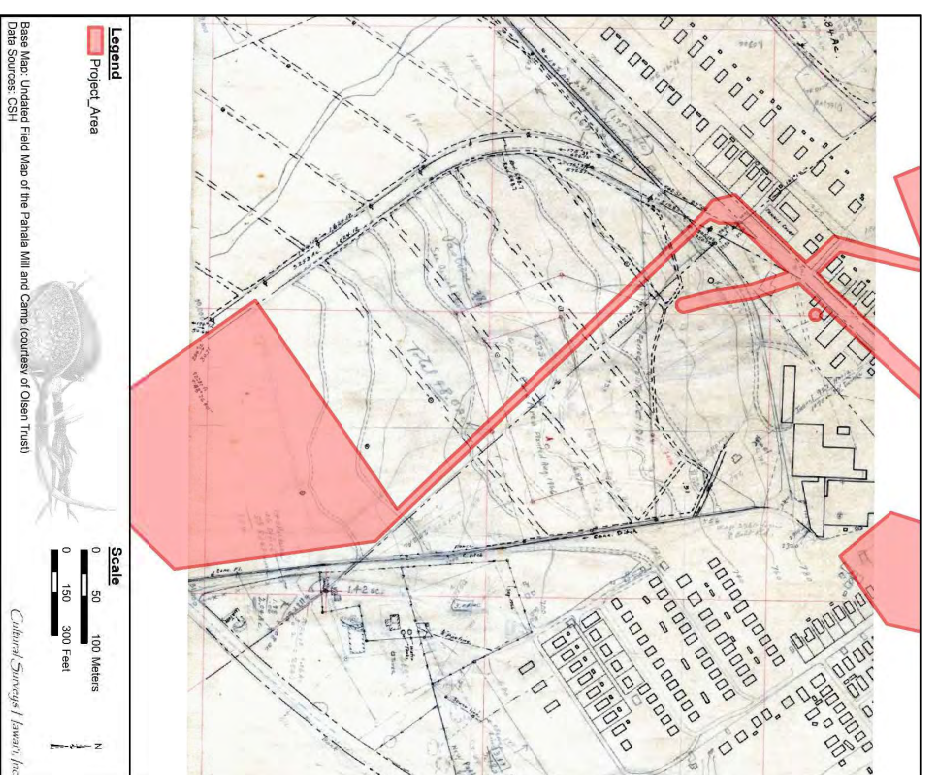


Figure 17. Portion of an undated field map of the Pahala Mill and Camp reprinted in Clegdom (2016:13) showing the southern portion of the project area in relation to plantation features

LR for the Pahala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

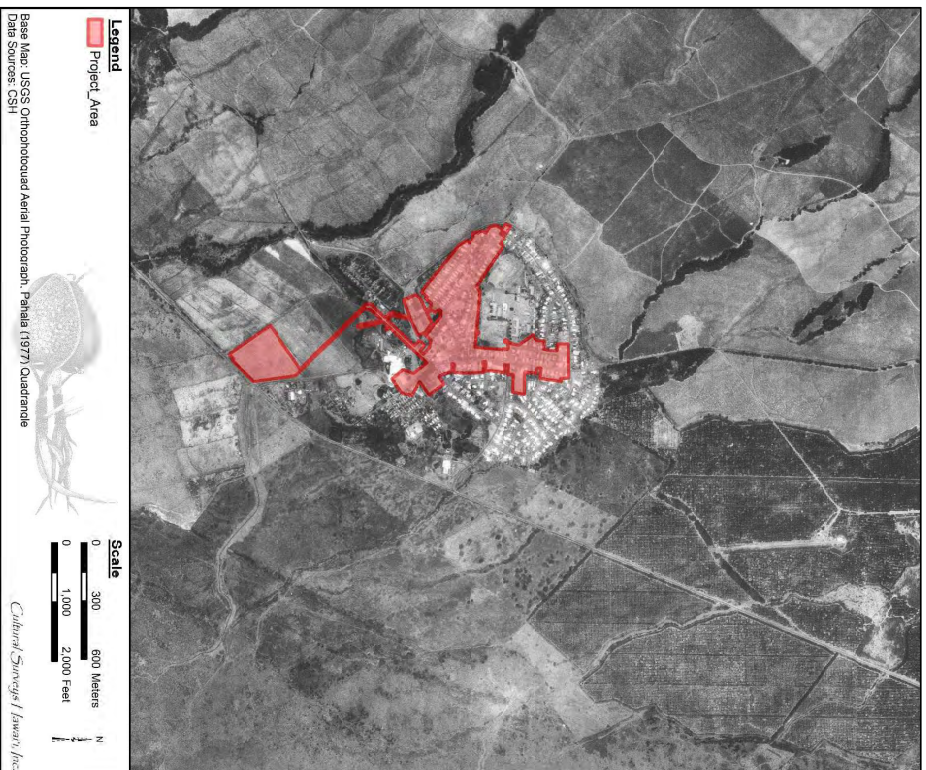


Figure 18. Portion of the 1977 USGS orthorectified aerial photo, Pāhala Quadrangle, showing the project area and continued development of Pāhala Town

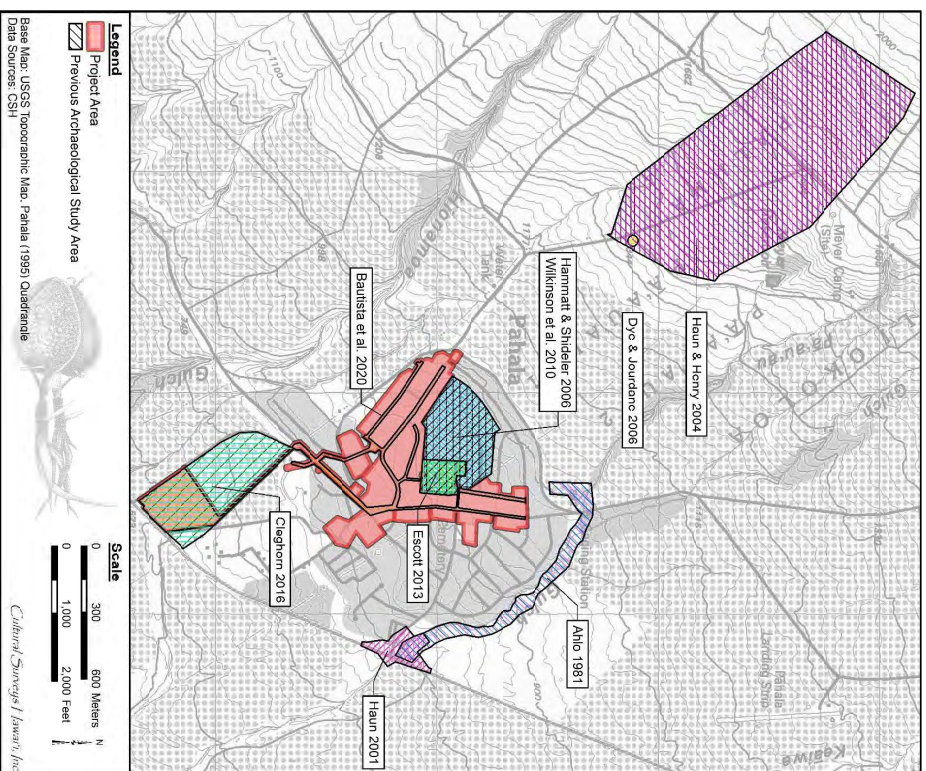


Figure 19. Portion of the 1995 Pāhala USGS 7.5-minute topographic quadrangle showing previous archaeological studies in the vicinity of the project area

Table 1. Previous archaeological studies in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP # 50-10-69****)
Ahlo 1981	Archaeological reconnaissance	Pā'au'au Stream between Manalaha Hwy (Route 11) and Wood Valley Rd, Pā'au'au 2 and 'Ihokoloa Ahupua'a. TMK not listed	No historic properties or cultural materials identified
Haun 2001	Archaeological inventory survey (recorded as an archaeological assessment)	Pā'au'au Bridge, Pā'au'au 2 and 'Ihokoloa Ahupua'a, portions TMKs: (3) 9-6-002:047, 9-6-012:012, 9-6-013:005, 9-6-023:043	No historic properties or cultural materials identified
Haun and Henry 2004	Archaeological inventory survey	Pāhala and Pā'au'au 1 Ahupua'a. TMKs: (3) 9-6-005:017, 018, and 9-6-006:004	One historic property documented: SIHP # -24119, historic irrigation flume associated with sugarcane cultivation
Dye and Ioudane 2006	Archaeological inventory survey (recorded as an archaeological assessment)	Pāhala and Pā'au'au 1 Ahupua'a, TMK: (3) 9-6-005:018 por.	No historic properties or cultural materials identified
Hannatt and Shideler 2006	Literature review and field inspection	Two DOE schools in Ka'i District, TMKs: (3) 9-6-005:008, 039; 9-5-009:006, 015	Noted listing of KHPES on HRHP; on-site archaeological monitoring recommended
Wilkinson et al. 2010	Archaeological monitoring	Ka'i High and Pāhala Elementary School, Pā'au'au Ahupua'a, TMKs: (3) 9-6-005:008, 039	Noted listing of KHPES on HRHP; one other historic property documented: SIHP # -27570, lava tube
Escott 2013	Archaeological inventory survey	Ka'i High and Pāhala Elementary School, TMK: (3) 9-6-005:008 por.	Explored and mapped previously recorded SIHP # -27570 (lava tube system), documenting three new features; documented one new historic property; a historic-era burial (SIHP # -29501) within SIHP # -27570 lava tube; Feature 3 may be within a portion of tube underlying current project area

Reference	Type of Study	Location	Results (SIHP # 50-10-69****)
Cleghorn 2016	Archaeological field inspection	Pā'au'au 1 Ahupua'a, TMK: (3) 9-6-002:018	Documented scattered surface artifacts and a lava tube within former plantation land; AIS recommended
Bautista et al. 2020	Archaeological inventory survey	Former Pāhala Wastewater Treatment Plant and Sewer System project, Honamoa, Pāhala, and Pā'au'au 1 and 2 Ahupua'a, TMKs: (3) 9-6-002:016 por. and 018 por.; 9-6-005:036 por. and 044, 9-6-016:041 por.; and County of Hawai'i Rights-of-Way	Documented two newly identified sites: SIHP #s -31088 (historic Wood Valley Road/Coastal Rd corridor) and SIHP # -31089 (historic Volcano Rd corridor)

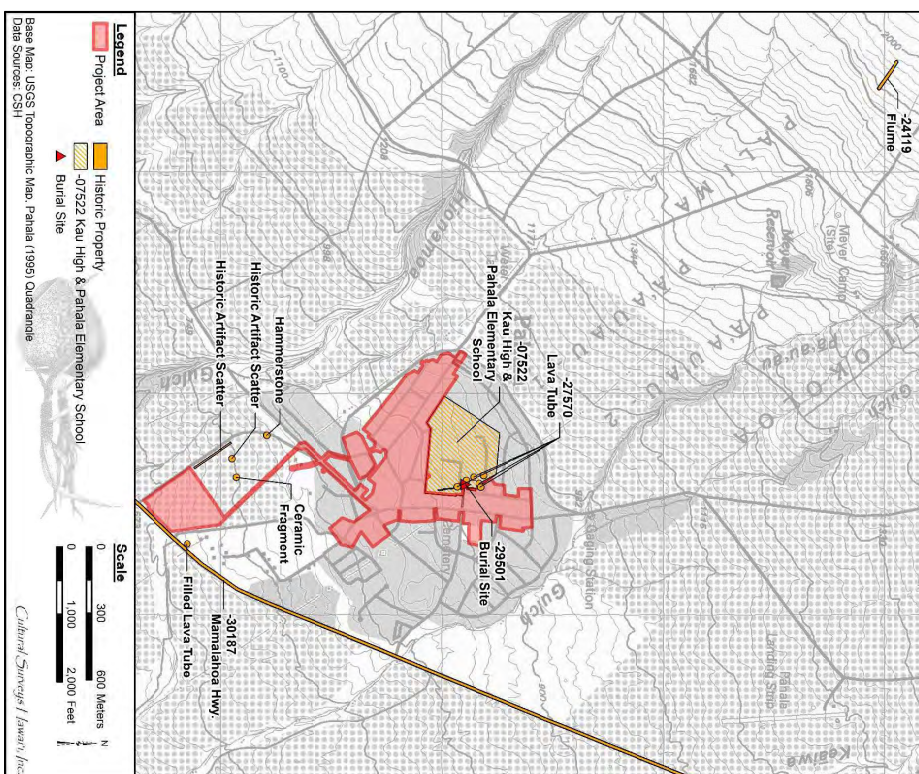


Figure 20. Portion of the 1995 Pahala USGS 7.5-minute topographic quadrangle showing locations of sites documented in previous archaeological studies in the vicinity of the project area (does not include sites documented by Bautista et al. 2020)

LR for the Pahala LCC Closure Project, Hionamo, Pālima, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple



Figure 21. Map from Escott (2013:18) showing the Escott (2013) project area and documented site locations

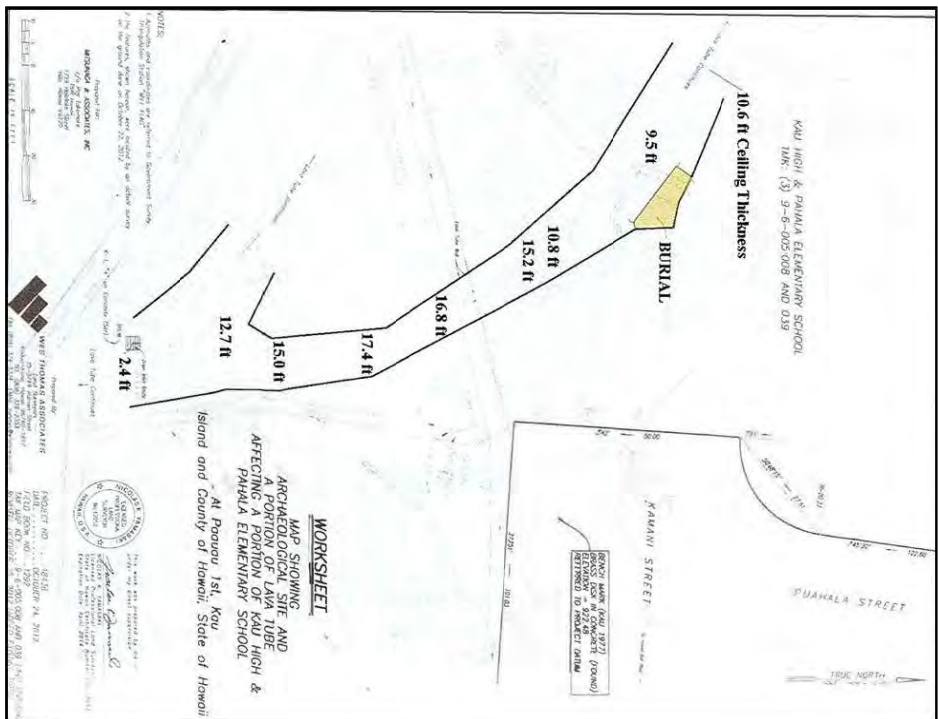


Figure 22. Survey map of SHIP # -29501 burial and SHIP # -27570 lava tube ceiling thicknesses (Escott 2013:19); note this section of the lava tube is near but outside the current project area

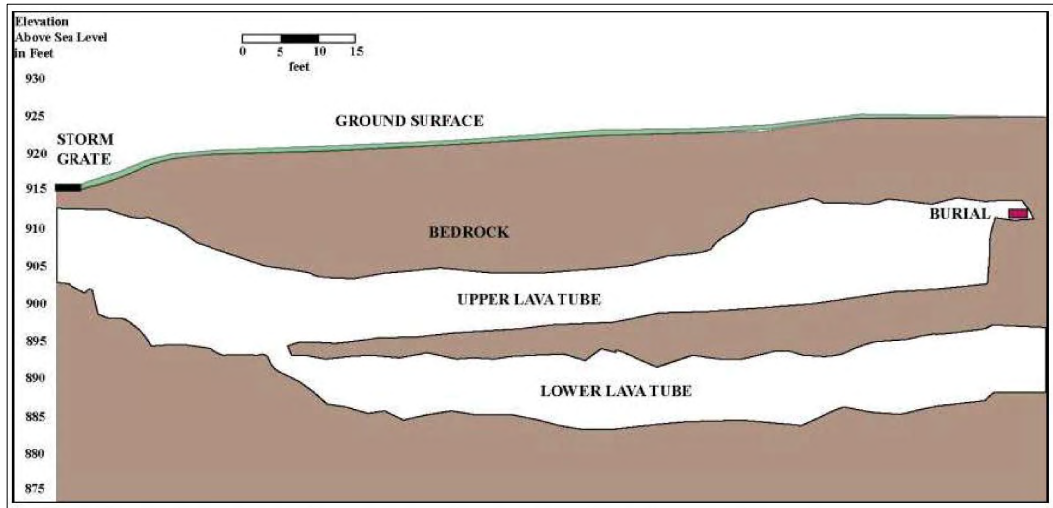


Figure 23. West profile drawing from Escott (2013:20) “Showing Elevations of the Upper Lava Tube, Lower Lava Tube, and Burial Location”



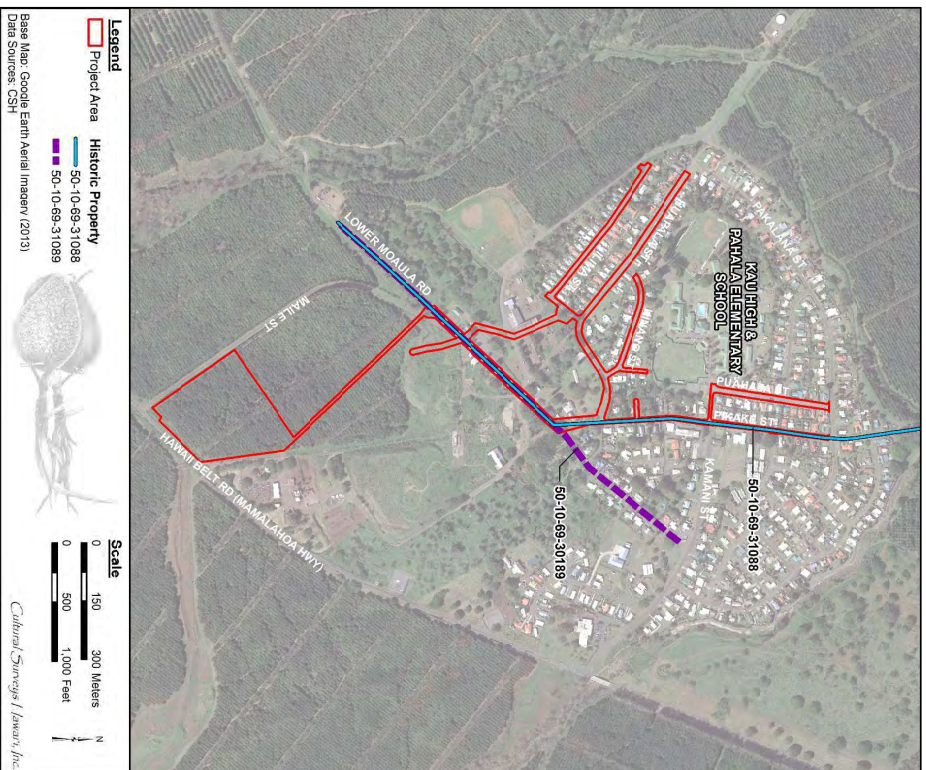


Figure 24. Map from Bautista et al. (2020:46) showing the locations of historic roadways SHHP #s 50-10-69-30188 and -30189

LR for the Pahala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMK's: multiple



Figure 25. 2019 CSH photo of a plantation-era building containing the current Olsen Trust offices located within the project area at TMK: (3) 9-6-016:011; view to north



Figure 26. 2019 CSH photo of plantation-era buildings and the Corliss steam engine monument located at the intersection of Pikake Street and Male Street within the project area at TMK: (3) 9-6-005:036; view to northwest

LR for the Pahala LCC Closure Project, Honamoa, Pāhala, and Pā'au'au 1 and 2, Ka'u, Hawai'i  
TMK's: multiple



Figure 27. 2018 CSH photo of a plantation-era building located within the project area at TMK: (3) 9-6-005;036; view to northwest



Figure 28. 2018 CSH photo of a plantation-era building located within the project area at TMK: (3) 9-6-005;036; view to northeast



Figure 29. 2019 CSH photo of a plantation-era store building located along Maile Street within the project area at TMK: (3) 9-6-015;034; view to northwest



Figure 30. 2019 CSH photo of a plantation-era shop building located along Maile Street overlapping the project area at TMK: (3) 9-6-002;016; view to southeast



Figure 31. Google Earth (2019) street view photo of the intersection of Maile Street with Mill Camp Road extending into a portion of the project area at TMK: (3) 9-6-002:016; view to southeast



Figure 32. Google Earth (2019) street view photo of a plantation-era residence located near the project area at TMK: (3) 9-6-002:056; view to southeast

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## Appendix A Project Area TMK

CDV TMK	Owner	Major Owner	Tax Acres
96002016	PIK CAPITAL PARTNERS LLC	other	66.719
96002018	KAMEHAMEHA SCHOOLS	Kamehameha Schools	42.5
96002021	KAMEHAMEHA SCHOOLS	Kamehameha Schools	46.57
96002024	COUNTY OF HAWAII	Govt. County of Hawaii	0.41
96002056	NEAL JULIA ANN	other	3.421
96002099	road	other	0
96002599	EDMUND C. OLSON #2 TRUST	E. C. Olson	51.04
96005001	STATE OF HAWAII	Govt. State	26.026
96005008	EDMUND C. OLSON #2 TRUST	E. C. Olson	25.35
96005026	EDMUND C. OLSON #2 TRUST	E. C. Olson	0.4937
96005044	HAWAIIAN TELCOM INC	other	0.0633
96005049	KAMEHAMEHA SCHOOLS	Kamehameha Schools	22.324
96014001	MCELEATH BARBARA ANN	other	0.1714
96014002	BECKER PHILIP ALEXANDER TRST (rel)	other	0.1721
96014003	FIKUNIGA FAMILY TR	other	0.1731
96014004	POLDO SANDRA A	other	0.1788
96014005	BRANCH YOUNG ELINA	other	0.1788
96014006	BRANCH YOUNG ELINA	other	0.1754
96014007	PAIOLAQ MALUA L (rel)	other	0.1774
96014008	NIRRAL-DACALDO DESHA-LYN KAWEHILANI (rel)	other	0.1741
96014009	LEBERERBERBER ALBERT (rel)	other	0.1798
96014010	KALIWAIVA PATRICK K (rel)	other	0.1791
96014011	ANDRADO CLEMENT (rel)	other	0.1798
96014012	WROBLEWIKSTENVEN W (rel)	other	0.1791
96014013	STONE ELIZABETH (rel)	other	0.1814
96014014	LORENZO FRANK USR (rel)	other	0.2503
96014015	BALLO STANLEY	other	0.2154
96014016	BALLO RAYMOND (rel)	other	0.2246
96014017	ORCINO LILY BETH ANDRELO (rel)	other	0.1806
96014018	ANDRADO S (rel)	other	0.2083
96014019	LOHIGANI PAUL TRST	other	0.1809
96014020	LORENZO STANLEY R (rel)	other	0.1581
96014021	KAPU MARK STEVEN (rel)	other	0.1052
96014022	OLIVERA LILLIAN KESYATE (rel)	other	0.1654
96014023	SILVA GEORGE A R (rel)	other	0.1852
96014024	FIKUNIGA SARILO (rel)	other	0.1672
96014025	GALEZA ALFREDO SPINOLA (rel)	other	0.1648
96014026	VILLA JERON K (rel)	other	0.1648
96014028	MITSUNAGA GREG MIBEN SEBASTIAN (rel)	other	0.1673
96014029	TOMMYTON SPOHR/DELLA MACE TTEES	other	0.1684
96014030	HAUGEN ROS H P (rel)	other	0.1641
96014031	OKAMURA TOSHIO (rel)	other	0.1626
96014032	CLM TRST	other	0.1615
96014033	BECKER PHILIP A (rel)	other	0.1576
96014034	YOKOTA KEIICHI K (rel)	other	0.1581
96014035	EUSTATHIODES ZOE ALEXANDRA	other	0.1627
96014036	KUMIHRO TAKESHI (rel)	other	0.1674
96014037	GALIMBA KEILY KEONI TR	other	0.1674
96014038	ANDRES DENNIS M	other	0.1658
96014039	ASSISTANT ALFREDO (rel)	other	0.1658
96014040	KAMESHIRO HAROLD K TR (rel)	other	0.1658
96014041	JUDALEINA KAZUTO R	other	0.1691
96014042	JOHNSON MARIA BERNARDETTE FB	other	0.1674
96014043	POINCE RAINDA	other	0.1674

city link	Owner	MajorOwner	TaxAcres
96014044	GALLAR, WESLEY	other	0.158
96014045	SANDERS, KANDRA	other	0.2479
96014046	KATCHMAR, JOHN M TR	other	0.2436
96014047	RAIVOS DOMINGO C JR /rel	other	0.233
96014048	ASUNCION EMERITO /rel	other	0.2861
96014049	TAKAKI RODNEY / H	other	0.3014
96014050	KEKOA JEFFREY /rel	other	0.3315
96014051	KAWACHI MICHAEL H	other	0.3315
96014052	SUMIDA, TSURUO TR	other	0.3073
96014053	MUINER, YIN MICHAEL /rel	other	0.3315
96014054	MAGSAYKO LEROY / KEIU /rel	other	0.3315
96014055	MITSUNAGA, EDWIN H /rel	other	0.3315
96014056	ANDRADE FAMILY TR	other	0.3014
96014057	RAIVOS FERDINAND CARPAL /rel	other	0.2861
96014058	HONOHANA LARSON A /rel	other	0.3879
96014059	MALTEZO ANTONIO /rel	other	0.2755
96014060	TACARON, BERNDA /rel	other	0.2755
96014061	CAMBA, GLORIA C TR	other	0.241
96014062	PONCZY, DARRELL G	other	0.241
96014063	ADEPINTO FELICE C /rel	other	0.241
96014064	ABALOUS, JOSE GONZALES /rel	other	0.241
96014065	MARTINEZ FEDERICO V A /rel	other	0.241
96014066	FERBER, CARMELITA /rel	other	0.241
96014067	PAALUNI, OUISA K /rel	other	0.2828
96014068	BALLO, AUGUST A /rel	other	0.2746
96014070	MATTHEO BRIAN RUDY /rel	other	0.3051
96014072	ROSE, DONALD S /rel	other	0.3777
96014896	OKNISH, ROY K /rel	other	0
96015001	KAWAIAUHAL, STEPHANIE M /rel	other	0.2439
96015002	ANDERSON, OJUANDE B	other	0.271
96015003	ANDERSON FAMILY TRST	other	0.3
96015004	MOSES, JACK ANTHONY III /rel	other	0.2385
96015005	GEAR, CARL BRETT /rel	other	0.277
96015006	JEIDA, HAJIME TRST /rel	other	0.3464
96015007	MZUHO STANLEY KAZUO TR	other	0.1862
96015008	YAMAGUCHI SALLY C TRUST	other	0.5967
96015009	CAMBA, GLORIA /rel	other	0.6415
96015010	SILVA, KAVELLE N N	other	0.2109
96015011	KBIER, CHRIS T /rel	other	0.2236
96015012	KAPAPANA, ANNE A /rel	other	0.1258
96015013	PAI, PATRICIA ANN L	other	0.1833
96015014	NAVARRO, LARRY D /rel	other	0.2191
96015015	CHAMTRAKUL, PRASERT /rel	other	0.2271
96015016	MAVANANTAN, RUBY N	other	0.2271
96015017	HIRASHI, CHUCK /rel	other	0.2939
96015018	HAWAII METHODIST UNION	other	0.252
96015019	DA CALDO MILTON /rel	other	0.2006
96015020	TAMONONG, GARY /rel	other	0.3253
96015021	TAMONONG, SHANDON L /rel	other	0.3544
96015022	YOSHIMURA, HISAKO /rel	other	0.2879
96015023	KALECHAND, ARTHUR H /rel	other	0.3247
96015024	NISHIMURA, NED NOBUO GAIL TOYOKO TTES	other	0.2443
96015025	GALIMBA, KELLY KEOKI /rel	other	0.3829
96015026	YOKONIMIZO FAMILY TRST /rel	other	0.3405

LR for the Palaha LCC Closure Project, Honomua, Palaha, and P3 au au 1 and 2, Ka'u, Hawaii  
 TMK's: multiple


city link	Owner	MajorOwner	TaxAcres
96015027	DA CALDO, MORGAN	other	0.2939
96015028	NABOIA, ROY /LUCINDA R TR	other	0.282
96015029	ESPANOLA, MOSES JR /rel	other	0.3188
96015030	BELLEDO, CARMEN V TRST	other	0.271
96015031	GALIMBA, ALBERT TRST /rel	other	0.2809
96015032	KAU MAHI LLC	Kau Mahi	1.032
96015033	HAWAII METHODIST UNION	other	1.292
96015034	WORTHINGTON, MICHAEL CHARLES /rel	other	0.118
96015035	EDMUND C OLSON #2 TRUST	E. C. Olson	0.2
96015036	road	other	0
96016011	EDMUND C OLSON #2 TRUST	E. C. Olson	0.7503
96016012	YOSHIDA, BERKELEY K /rel	other	0.4249
96016013	GROSS, MICHAEL L J	other	0.2792
96016014	CABERROS, JOSEHUA J	other	0.2388
96016015	VILLA, JERRY R /rel	other	0.2266
96016016	MICCOLLUM, PETER DONOVAN /rel	other	0.2543
96016017	FREITAS, RODNEY K /rel	other	0.3437
96016018	ANDRADE, KATHY L	other	0.3803
96016019	KEIM PAUL, DAVID /rel	other	0.3522
96016020	FISHER, CHRISTOPHER DAVID /rel	other	0.4579
96016021	BETTER, BARBY A TRST	other	0.3796
96016022	300 CORPORATION	other	0.9503
96016023	H H & S INC	other	0.1758
96016024	OLMIEN, MICHAEL J /rel	other	0.4
96016025	BARANI, EVELYN BARBARA	other	0.3017
96016026	MEAL, JULIA A /rel	other	0.6806
96016027	DAVIS, MATTHEO BRYAN RUDY /rel	other	0.9255
96016028	PROYOST, ANKCO	other	0.6402
96016029	road	other	0.4293
96016030	DA CALDO, DON FRANCISCO /rel	other	0.4233
96016031	AH, SAM JOHN L	other	0.4233
96016032	MEAL, JULIA A /rel	other	0.3588
96016033	CAMBA, GLORIA	other	0.2523
96016034	road	other	0
96017001	SALUO, CORINNA M /rel	other	0.3751
96017002	ROMANI, DAVID L C CHURCH	Roman Catholic Church	2.072
96017003	COUNTY OF HAWAII	Govt. County of Hawaii	0.5257
96017004	LEE, DEYTER K TR	other	0.2232
96017005	LEE, DEYTER K TR	other	0.2232
96017006	LEE, DEYTER K TR	other	1.4346
96017007	STATE HAWAII HOUSING AUTHORITY	Govt. State HHA	1.4346
96017008	COUNTY OF HAWAII	Govt. County of Hawaii	0.6154
96017009	road	other	0
96017999	SALES, EDGAR ESCALONA /rel	other	0.3054
96018001	FREKASIK, TERESA L	T.L. Frekaski	0.2807
96018002	MALEPE, ADELAIDE /rel	other	0.2754
96018003	USJIAN, FRANKLYN L /rel	other	0.2476
96018004	COUNTY OF HAWAII	Govt. County of Hawaii	0.01
96018005	LOUIS, HAKAKO /rel	other	0.2421
96018006	KEA, RONALD /rel	other	0.2491
96018007	KE, DARL G K /rel	other	0.2836
96018008	FOINCE, CALVIN G /rel	other	0.2592
96018009	DAILES, ALOHA MARIA DELOS SANTOS /rel	other	0.327
96018010	BARRA, ALFRED JR /rel	other	0.2874
96018999	road	other	0
96019999	road	other	0

LR for the Palaha LCC Closure Project, Honomua, Palaha, and P3 au au 1 and 2, Ka'u, Hawaii  
 TMK's: multiple

cfy_jmk	Owner	MajorOwner	TaxAddress
96020016	OLSON, EDWARD C TRUST NO 2	other	0.1907
96020002	ORTEGA, MICHELLE M	other	0.184
96020004	RYDER, FRANK III /real	other	0.1856
96020004	GAIDALARA, PEDRO /real	other	0.1801
96020005	ROSALES, DAWN L C /real	other	0.1787
96020006	EVANGELISTA, RODRIGO R /real	other	0.1789
96020007	SOUZA, DAVID JR TR /real	other	0.1768
96020008	CABATANGAN, ABDON /real	other	0.1719
96020010	REQUELIAN, EDWARD C TR	other	0.1699
96020010	ADERINTO, FELICE C /real	other	0.1661
96020012	PORTILLO, WIDO CHALITO MARTINEZ	other	0.1677
96020013	NERSON, LESTER MATT	other	0.1633
96020014	GABINI, SONNY A /real	other	0.203
96020015	LEE, BARBARA A	other	0.2236
96020016	AGUIA, JOSEPH P /real	other	0.2478
96020017	NAVARRO, VERBA, CRISTEN DOLLY	other	0.2208
96020018	BECKER, PHILIP A /real	other	0.2215
96020018	KAMAKUPA, CLAIRTA /real	other	0.1549
96020020	VILVA, TEOFILO	other	0.1495
96020021	LORENZO, OLIVETE, LENORA M /real	other	0.1609
96020022	SANTAGO, DENNIS E	other	0.1469
96020023	CABRUDO, APOLIARIO /real	other	0.1469
96020024	ANDRADE, EDUARDO /real	other	0.1593
96020025	DELOS SANTOS, MARINO V /real	other	0.2019
96020026	PERERA, FREDIE V /real	other	0.2019
96020027	LEON, ALBERTO V /real	other	0.2075
96020028	MARTINSON, LINDA JAMES	other	0.2092
96020030	WONG, FRANCIS HERBERT EVELYN PALAMAM TR	other	0.3139
96020031	BASKIN, LESTER TAJA TO	other	0.3072
96020032	GACA, VALERIA TERESA D TRST /real	other	0.3172
96020033	ALDRIDGE, JEROD ARNOLD /real	other	0.2527
96020034	ORTEGA, MARTIN L	other	0.2582
96020035	SINGUN, JOSE V /real	other	0.3099
96020036	FERRERA, FLORENTINA	other	0.259
96020037	ABELLEIRA, ERNESTO PASQUAL /real	other	0.2465
96020038	DOYLE, CHARLES FRANK	other	0.3429
96020039	CASTILLO, BENJAMIN /real	other	0.2568
96021001	PASCUBELLO, CANDICE	other	0
96021001	AGUIVALDO, BERT G /real	other	0.3129
96021001	RAALIH, VIICKI V	other	0.2479
96021031	road	other	0.2924
96021999	road	other	0

## Appendix B SHPD Correspondence

### AIS (Bautista et al. 2020) Acceptance



STATE OF HAWAII  
 DEPARTMENT OF LAND AND NATURAL RESOURCES  
 STATE HISTORIC PRESERVATION DIVISION  
 609 KAPOLEI HI 96707  
 KAKAHIHENA BUILDING  
 KAPALEI HI 96707

February 20, 2020

William A. Kuchanski, Director  
 Department of Environmental Management  
 345 Kalaheo a Street, Suite 41  
 Hilo, HI 96720  
 William.Kuchanski@hawaii.gov


David M. Hight, Manager  
 Cultural Preservation Section  
 Water Division  
 U.S. Environmental Protection Agency  
 Region IX  
 75 Hawthorne Street  
 San Francisco, CA 94105  
 AMHIGHT.david@epa.gov

Dear Mr. Kuchanski and Mr. Albright:

SUBJECT: **Thayer 63-8 and National Historic Preservation Act Section 106 Review - Palaha Wastewater Treatment Plant and Sewer System Project, United States Environmental Protection Agency (EPA) Grant #9094201-6**

Re: **Palaha Wastewater Treatment Plant and Sewer System Project, United States Environmental Protection Agency (EPA) Grant #9094201-6**

On February 13, 2020, the State of Hawaii Department of Land and Natural Resources (DLNR) received a letter dated March 11, 2019 from the County of Hawaii Department of Environmental Management (DEM) regarding the draft archaeological inventory survey (AIS) report prepared by Cultural Surveys Hawaii, Inc. (CSH) for the Palaha Wastewater Treatment Plant and Sewer System Project (P3) located at the intersection of State Route 20, 201/8 (Log No. 2018.01722, Dec. No. 180818A02). SHPD subsequently received on October 9, 2019 a letter dated September 26, 2019 from the United States Environmental Protection Agency (EPA) requesting concurrence with an effort/determination of "no historic properties affected" pursuant to 36 CFR 800.4(d) (October 9, 2019 - Log No. 2019.02292), a letter dated October 9, 2019 from DEM requesting SHPD to review and accept the findings of the AIS report (October 15, 2019 - Log No. 2019.02445) and, lastly, a DEM email on January 19, 2020 (Date Node ID: report) Director, DEM) to State Lab (SHPD) requesting concurrence with DEM's project effort determination of "no historic properties affected" pursuant to 36 CFR 800.4(d).



SEANNE B. CALE  
 DIRECTOR  
 DEPARTMENT OF LAND AND NATURAL RESOURCES  
 STATE HISTORIC PRESERVATION DIVISION  
 609 KAPOLEI HI 96707


ROBERT A. BAUTISTA  
 M. KALEA WATERS  
 LEIFERT T. BAUTISTA  
 STATE HISTORIC PRESERVATION DIVISION  
 DEPARTMENT OF LAND AND NATURAL RESOURCES  
 609 KAPOLEI HI 96707

IN REPLY REFER TO:  
 Log No. 2019.02292  
 Log No. 2019.02445  
 Archaeology






# AMP (Wilkinson and Hammat 2020) Acceptance



**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
STATE HISTORIC PRESERVATION DIVISION  
601 NANAKULUA DRIVE, 5TH FLOOR  
KAPOLEI, HI 96707



**STATE OF HAWAII**  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
601 NANAKULUA DRIVE, 5TH FLOOR  
KAPOLEI, HI 96707

NOVEMBER 4, 2020

William A. Kubarski, Director  
County of Hawaii, Environmental Management  
345 Kalahele's Street Suite 41  
Hilo, Hawaii 1 96720  
William.Kubarski@hawaiicounty.gov

IN REPLY, MEMBER TO:  
Mr. Robert L. Gage, Director  
Department of Land and Natural Resources  
Archaeology

Dear Mr. Kubarski:

**SUBJECT: Chapter 6E-8 Historic Preservation Review – Archaeological Monitoring Plan for the Palaha Wastewater Treatment Plant and Sewer System Project, Honomanu, Palaha, and Pā'au'au 1 and 2, Ahupua'a, Kā'u District, Hawai'i Island TMAKS [3] 9-6-002/016 por. and 018 por., 9-6-003/036 por. and 044, 9-6-016/041 por., and County of Hawai'i ROWS**

This letter provides the State Historic Preservation Division's (SHPD) review of the subject archaeological monitoring plan (AMP) titled, *Archaeological Monitoring Plan for the Palaha Wastewater Treatment Plant and Sewer System Project, Honomanu, Palaha, and Pā'au'au 1 and 2, Ahupua'a, Kā'u District, Hawai'i Island TMAKS [3] 9-6-002/016 por. and 018 por., 9-6-003/036 por. and 044, 9-6-016/041 por., and County of Hawai'i Right-of-Ways (Wilkinson and Hammat, April 2020)*. SHPD received the AMP on May 5, 2020.

**Project Description**

The proposed County of Hawaii Department of Environmental Management Division (DEM) project will include the construction of a wastewater treatment plant (WWT) and sewer system. The WWT will be located on a disposal facility to serve the Palaha community. The proposed collection portion of the project area will be located on County roads and streets, where trenches up to 6 feet deep will be excavated to accommodate the sewer system. This treatment and disposal facility will occupy 1.4.9 acres in a portion of a 42.2-acre property south of Palaha town that is currently owned by Kamehameha Schools and leased to Royal Hawaiian Orchards. Most of the parcel is located in a commercial mekalaniana nut orchard, a mekalaniana nut processing plant parking lot occupies the southeast corner. The 29.4-acre project area is bounded on the southeast by Hawai'i Belt Road (Queenalaha Highway) on the southwest by Maile Street, on the northwest side by orchard, and on the northeast side by a road that is not labeled in the available maps.

**Findings**

An archaeological inventory survey (AIS) (Bounisun et al., March 2019) was conducted for the proposed project area and involved a 100% pedestrian survey with field crew spaced 3.5 meters apart depending upon the density of vegetation; no survey was conducted for the large-capacity cesspool located on private property as access was not approved by the landowner. The report indicates ground visibility was very good throughout most of the 14-acre project area. Surface testing included mechanical excavations of seven test trenches measuring approximately 5 m long and 1 m wide with an average depth of 1.6 m. No subsurface features or deposits were exposed during AIS testing.

Mr. Kubarski:  
11/04/2020  
Page 2

The AIS documented two newly identified historic properties: the historic Wood Valley Road/Coastal Road corridor (SHPD # 50-10-69-31088), and the historic Volcano Road corridor (SHPD # 50-10-69-31089). The report assessed both sites 31088 and 31089 as equivalent under Criterion 4, pursuant to HAR §13-275-6. Furthermore, the report recommends SHPD # 50-10-69-31089 and SHPD # 50-10-69-31089 as not eligible for inclusion on the National Register of Historic Places, as none of the constructed elements of the subject portions of the original roadway are eligible for inclusion on the National Register of Historic Places. The report also recommends a project effect determination of "no historic properties affected" and archaeological monitoring during all construction activities for the proposed project. In a letter dated February 20, 2020 (2019.00350, Dec. No. 2002S/H08), SHPD accepted the AIS and concurred with the DEM's project effect determination of no historic properties affected and with the DEM's stipulation of archaeological monitoring for identification purposes.

Cultural Survey's Hawai'i, Inc. (CSH), prepared this AMP in support of the Palaha Wastewater Treatment Plant and Sewer System project. The plan includes a description of the project area, a summary of previously identified historic properties in the vicinity of the project area, methodologies for field and laboratory work, and procedures for curating and reporting of cultural material recovered. This draft AMP (Wilkinson and Hammat 2020) addresses the requirements outlined in HAR §13-275-4 and stipulates the following:

- A coordination meeting will be conducted between the construction team and monitoring archaeologists prior to construction activities. All appropriate parties will be informed of the monitoring procedures as stipulated in the AMP.
- On-site monitoring will be conducted for all ground-disturbing activities. A qualified archaeologist familiar with the project area will monitor for each piece of land altering machinery during this project.
- The archaeologist monitor has the authority to temporarily halt all activity in the area in the event of a potential historic property being identified, or to record archaeological information for cultural deposits or features. No artifacts such as bottles shall be removed by the construction crew or from the site.
- If non-burial historic properties are identified, documentation shall include, as appropriate, recording stratigraphy using USDA soil descriptions, GPS point collection with sub-meter accuracy, recording of feature contents through excavation or sampling of features, screening of features, representative scaled profile drawings, photo documentation using a scale and north arrow, and appropriate laboratory analysis of collected samples and artifacts. Additionally, photographs and profiles of excavations will be collected from across the project area even if no significant historic properties are encountered.
- If human remains are identified, work will cease in the vicinity, and the find shall be secured, and provisions outlined within the Hawaii Revised Statutes (HRS) §§60-43, HRS §13-500-46, and any applicable rules shall be followed.
- Collected artifacts shall be stored in cloth barrels will be temporarily stored at the archaeological firm's facility until final disposition of the artifacts and samples are determined in consultation with SHPD and the landowner; and
- Any changes in these provisions shall occur only with written approval from the SHPD.

**Determination**

The AMP meets the minimum requirements of HAR §13-279-4. **It is accepted.** Please send two hard copies of the AMP, clearly marked FINAL, along with a text-searchable PDF version of each to the Kapolei SHPD office, attention SHPD Library. Additionally, please send a pdf of the Final AMP (Wilkinson and Hammat 2020) to [Elina.Saunders@hawaii.gov](mailto:Elina.Saunders@hawaii.gov).

**SHPD hereby notifies** the DEM that construction activities for the present project may proceed with archaeological monitoring in accordance with the SHPD-accepted AMP (Wilkinson and Hammat 2020). The permit issuance **process may proceed.**

**SHPD requests written notification** at the start and conclusion of archaeological monitoring. Within 60 days of completion of archaeological monitoring fieldwork, SHPD looks forward to receiving for review and acceptance an archaeological monitoring report meeting the requirements of HAR §13-279-5.

Please contact Sean Nakamichi at (808) 933-7651 or at [Sean.Nakamichi@hawaii.gov](mailto:Sean.Nakamichi@hawaii.gov) for any questions or concerns regarding this letter.

Mr. Kucharski  
1/6/4/2020  
Page 3

Aloha,

**Alan Downer**

Alan S Downer, PhD  
Administrator, State Historic Preservation Division  
Deputy State Historic Preservation Officer

cc: Don Beck, DHEWWD Chief, Don.Beck@hawaiicounty.gov  
Craig Scherer, Title, Brown and Caldwell, CSX.crsg@brownandcald.com  
David Shuler, Cultural Surveys Hawaii, Dshuler@cultursurveys.com

## Appendix C Site Descriptions

### SIHP # 50-10-69-27570 (Adapted from Escott 2013:21-30)

#### SITE 27570 LAVA TUBE SECTION WITH MODIFICATIONS

FUNCTION: Refuse Deposit

AGE: Historic and Modern

DIMENSIONS: Length: 130.0 m N/S; Width, 6.0 m; Height, 5.0 m Max.

CONDITION: Fair

INTEGRITY: Altered by weathering

SURFACE ARTIFACTS: Modern Trash and Marine Shell

EXCAVATION: None

DESCRIPTION: Site 27570 is three modifications (Features 1, 2, and

3) constructed in the northern branch of a lava tube system [see Figure 21].

Feature 1 is a trash dump located under the opening of the lava tube system. Feature

2 is a rock concentration located at the northern terminus of the northern branch

tube. Feature 3 is a rock alignment located approximately 20.0 meters east of

Feature 2.

Feature 1 is a concentration of Historic era and modern trash discarded in the opening of the lava tube system [Figure 33]. A storm drain was constructed in the opening of the tube in the 1980s [Figure 34 and Figure 35]. Feature 1 is 18.0 m long (N/S) by 2.7 m wide. Trash fills the bottom of the lava tube and is piled up to 3.0 meters high in places. Trash washed along the bottom of the tube continues as a light scatter throughout the northern branch of the lava tube. Items of trash include primarily bottle glass, fragments of sheet metal, plate ware, plastic items, and a truck frame and rims [Figure 36 and Figure 37]. Small amounts of burned wood, 'opihi shell, marine shell, and cut and whole animal bone (including cow and goat) are also scattered along the floor of the northern lava tube. Feature 1 has been impacted by drainage and is in fair condition. No further work is recommended at Feature 1.

Feature 2 is a rectangular rock concentration and alignment located at the northwest terminus of the northern branch of the lava tube [Figure 38]. Feature 2 is 4.5 m long (NW/SE) by 2.8 m wide and is a maximum of 30.0 cm in height [Figure 39]. The rock concentration is constructed of angular and subangular cobbles loosely piled one to two layers on the tube floor [Figure 40]. Two fragments of goat bone, modern bottles, and a piece of burnt wood were identified on the rock concentration and on the surrounding ground surface.

There is an alignment of small boulders stacked just northwest of the rock concentration. The alignment is one to two courses wide and high, and appears to limit access to the low tube continuing to the northwest. There are no additional archaeological features or cultural material located in the low tube area to the northwest.

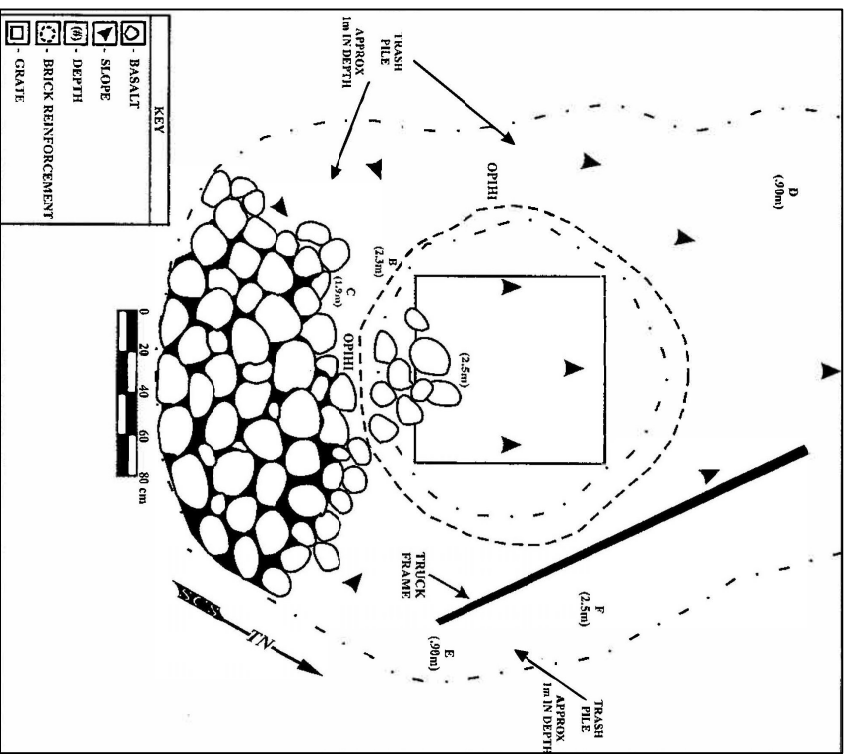


Figure 33. Plan view map of SIHP # -27570 Feature 1 (Escott 2013:22)

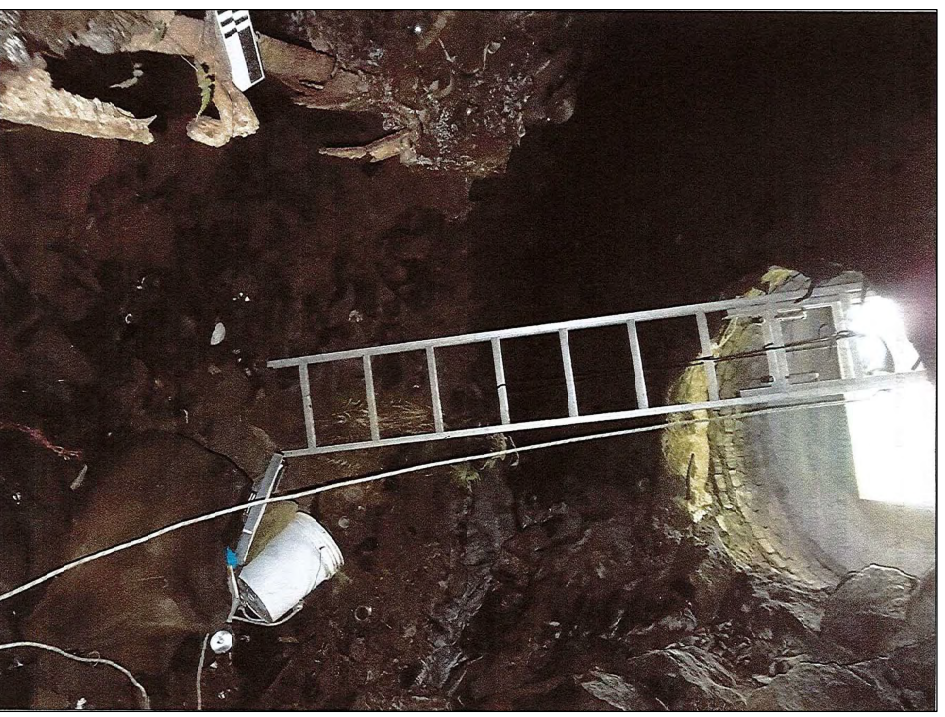


Figure 34. Photo from Escott (2013:23) of SIHP # -27570 showing lava tube entrance at storm grate above Feature 1; view to south



Figure 35. Photo from Escott (2013:24) of SIHP # -27570 Feature 1, view to south



Figure 36. Photos from Escott (2013:25) of SIHP # -27570 Feature 1, showing refuse (left frame) and truck frame and refuse (right frame)



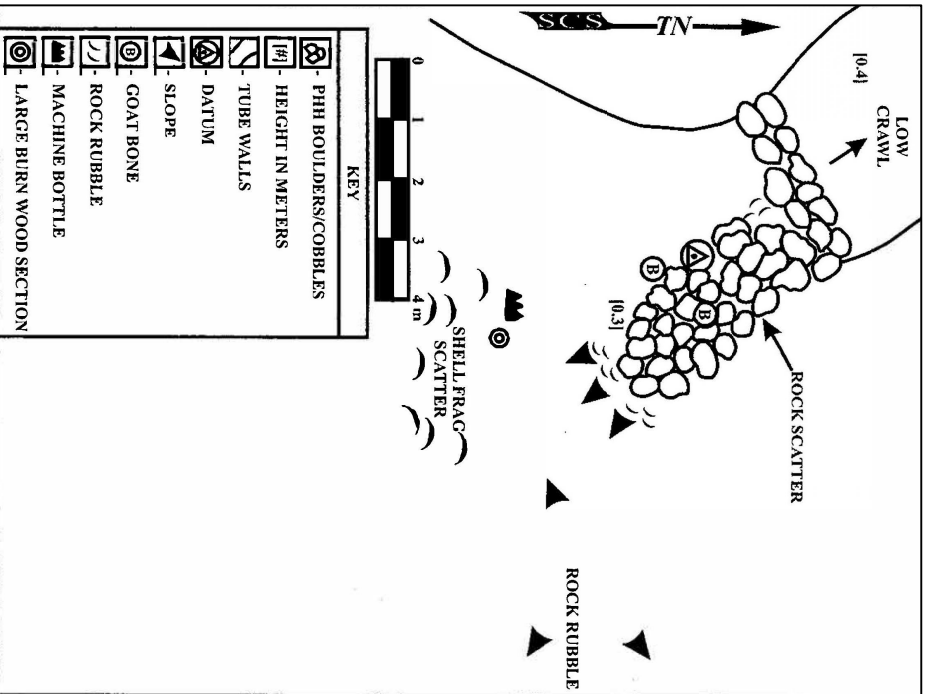


Figure 39. Plan view map of SIHP # -27570 Feature 2 (Escott 2013:28)

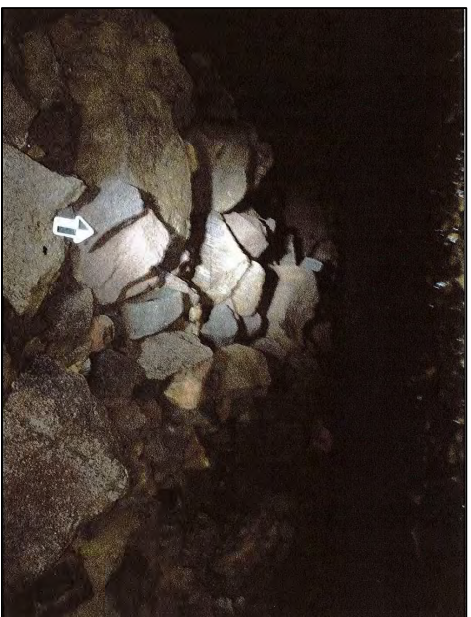


Figure 40. Photo from Escott (2013:29) showing SIHP # -27570 Feature 2; view to north

The preponderance of artifacts located at Feature 2 are post-Contact era to modern. It is likely that Feature 2 was created during this period by people who lived in the area and were exploring the lava tube. Alternatively, it is possible that Feature 2 might have been constructed during the pre-Contact era. Feature 2 is unaltered and is in good condition. No further work is recommended at Feature 2.

Feature 3 is a low rock alignment located at the northeast terminus of the northern branch of the lava tube [see Figure 38]. Feature 2 is 2.4 m long (NE/SW) by 0.7 m wide and is a maximum of 50.0 cm in height [Figure 39]. The rock alignment is constructed of angular and subangular cobbles and small boulders loosely stacked two to three courses high on top of a large, boulder-size piece of roof fall [Figure 40]. Feature 3 is roughly faced along its northwest edge [Escott 2013:21–30]

Escott (2013:36) assessed SIHP # -27570 as significant under Criterion d based on the information it yielded about historic and modern use.

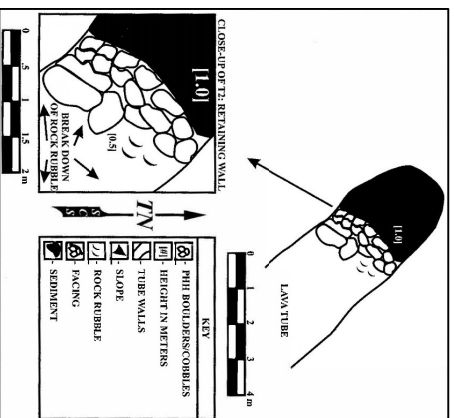


Figure 41. Plan view map of SIHP # -27570 Feature 3 (Escott 2013:30)



Figure 42. Photo from Escott (2013:31) of SIHP # -27570 Feature 3; view to northwest

### SIHP # 50-10-69-29501 (Adapted from Escott 2013:32-34)

#### SITE 29501

#### BURIAL REMAINS

FUNCTION:	Burial
AGE:	Second Half of 1800s
DIMENSIONS:	Length: 5.0m NW/SE; Width: 2.8m; Height: 0.15m Max.
CONDITION:	Good
INTEGRITY:	Unaltered
SURFACE ARTIFACTS:	Personal items owned by the deceased.
EXCAVATION:	None

DESCRIPTION: Site 29501 is the remains of two individuals placed in a lava tube under, what is now, the Ka'u High School and Pāhala Elementary School Campus [see Figure 21 and Figure 22]. The remains were placed on a lava tube bench located along the northeast side of the lava tube. The bench is 2.0m above the lava tube floor. Site 29501 is considered to be the aerial extent of the lava bench on which the remains were placed, and is roughly represented by the dimensions documented above.

The remains are of an adult male (NE skeletal remains) and an adult female (SW skeletal remains). The bodies appear to have been laid supine with their feet to the southeast and their heads to the northwest... It is possible that the bodies were laid in an east-west orientation, and the skeletal remains have shifted to the present northwest-southeast orientation. While the long bones of the legs are still articulated, the majority of skeletal elements are not, denoting some shifting associated with natural taphonomic processes and animal disturbance.

There are no nails apparent on the surface of the remain, nor on the lava bench surface in the immediate area of the burials. The lack of nails suggests the bodies likely were not placed in coffins at the time of burial. The presence of black and white glass buttons suggests the bodies were laid to rest in clothing...

Based on ... personal items [including glass buttons] identified at the burial, the burials likely post-date 1860, and appear to be from the second half of the 1800s.

Though the burials are from a time period when many people were immigrating to Hawai'i from Europe, the United States, Asia, and Southeast Asia, the skeletal remains were determined to be of Polynesian ancestry (Pietruszewski 2013). The personal items found with the remains suggest the skeletal remains belonged to Hawaiians that likely had land to ranch and cultivate sugarcane.

The ceiling of the lava tube that the burials are located in is between 9.5 and 17.4 feet in thickness [see Figure 22]. That is, there is between 9.5 and 17.4 feet of solid lava rock between the top of the lava tube ceiling and the ground surface. The burials within the tube are located directly below an intersection between the school's main access drive and a secondary campus road [see Figure 22]. Road traffic is not audible from the burial location and the burial does not appear to have been disturbed by any vehicle traffic vibrations. Site 29501 is unaltered and is in good condition, and is recommended for preservation. [Escott 3012:32-34]

Escott (2013:35) also notes “the remains may possibly be of the Kamalo family members who lived on the property around the time of the Māhele and after.” SIHP # -29501 was assessed as significant under Criterion d and e, “as the burial site both contains important data and, more importantly, is important to native Hawaiian people or other ethnicities in the state, due to associations with cultural practices and traditional beliefs that were, or still are, carried out” (Escott 2013:36).

### SIHP # 50-10-69-31088 (Adapted from Bautista et al. 2020:77)

<b>FORMAL TYPE:</b>	Road (Wood Valley Road/Coastal Road)
<b>FUNCTION:</b>	Transportation
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Late 1800s-1920s
<b>TAX MAP KEY:</b>	[3] 9-6-005:999 (county right-of-way)
<b>LAND JURISDICTION:</b>	County of Hawai'i
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # 50-10-69-31088 consists of a 1.16-km (0.72-mile) section of the historic Wood Valley Road/Coastal Road alignment located within the current project area [see Figure 24]. The section of this alignment within the project area follows the present Maile Street and Pihake Street alignments located between the Lower Moaula Road fork and Pakalana Street on the west and northern edges of Pāhala Town, respectively [see Figure 4]. Construction of the modern Maile Street and Pihake Street roadways, which are approximately 5-10 m (16.5-33 ft) wide, has impacted all the constructed elements of the corresponding portions of the former Wood Valley Road/Coastal Road roadway [Figure 43 through Figure 46].

Background research, particularly examination of historic maps from the Pāhala and greater Ka'i areas, indicate a coastal route extending from Nā'ālehu to the Punalū'u vicinity and then east and north through Pāhala Town, where it merged with the original (late 1800s) “Volcano Road” alignment further upslope [see Figure 10, Figure 12, Figure 13, Figure 47, and Figure 48]. With the construction of the new Volcano Road (SIHP # -31089) in the 1920s the Wood Valley Road/Coastal Road alignment became obsolete as a primary route (see Section 5.2), and the central portion of the stretch between Pāhala and Nā'ālehu was abandoned after the development of SIHP # -31089 (see Figure 68). Above Pāhala Town the route is still called Wood Valley Road, but it is used by residents of Wood Valley located approximately 5 miles to the northeast and not as a primary route to Kīlauea.

SIHP -31088 (Wood Valley Road/Coastal Road) is a primary transportation route that linked Kīlauea with Nā'ālehu from the late 1800s-1920s. Pursuant to HAR §13-275-6, SIHP # -31088 is assessed as significant under Criterion d for the information it has yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries. [Bautista et al. 2020:77]





Figure 43. Photo from Bautista et al. (2020:53) looking up Pkake toward the Kamani Street intersection; commercial center is visible to the right; view to north



Figure 44. Photo from Bautista et al. (2020:53) showing the Pkake Street terminus at Maile Street; Hawaiian Telecom building is on opposite corner; view to southwest



Figure 45. Photo from Bautista et al. (2020:54) of a portion of Maile Street within the project area, showing the Pkake Street intersection in the background and the HELCO building (left frame); view to northeast



Figure 46. Photo from Bautista et al. (2020:54) of a portion of Maile Street in the project area, showing the Lower Moaula Road fork in the far background; view to southwest

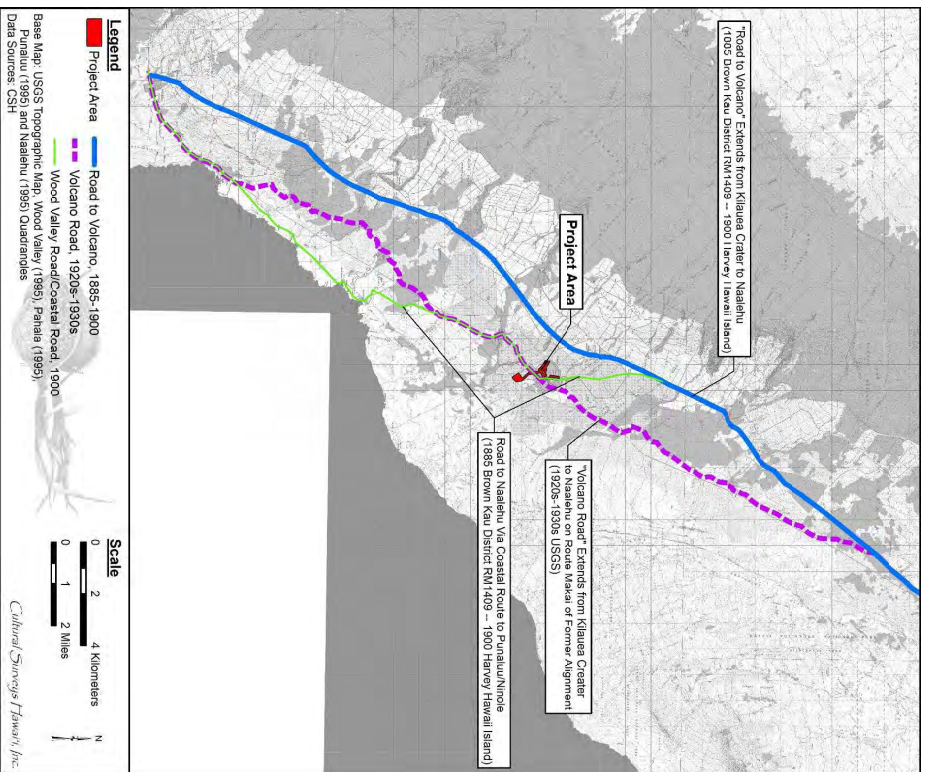


Figure 47. Portions of the 1995 Wood Valley, Pahala, Punaluu, and Naalehu USGS 7.5-minute topographic quadrangles showing the location of the project area in relation to historic roadways (map from Bautista et al. 2020:78)

LR for the Pahala LCC Closure Project, Honomaa, Palima, and P3'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

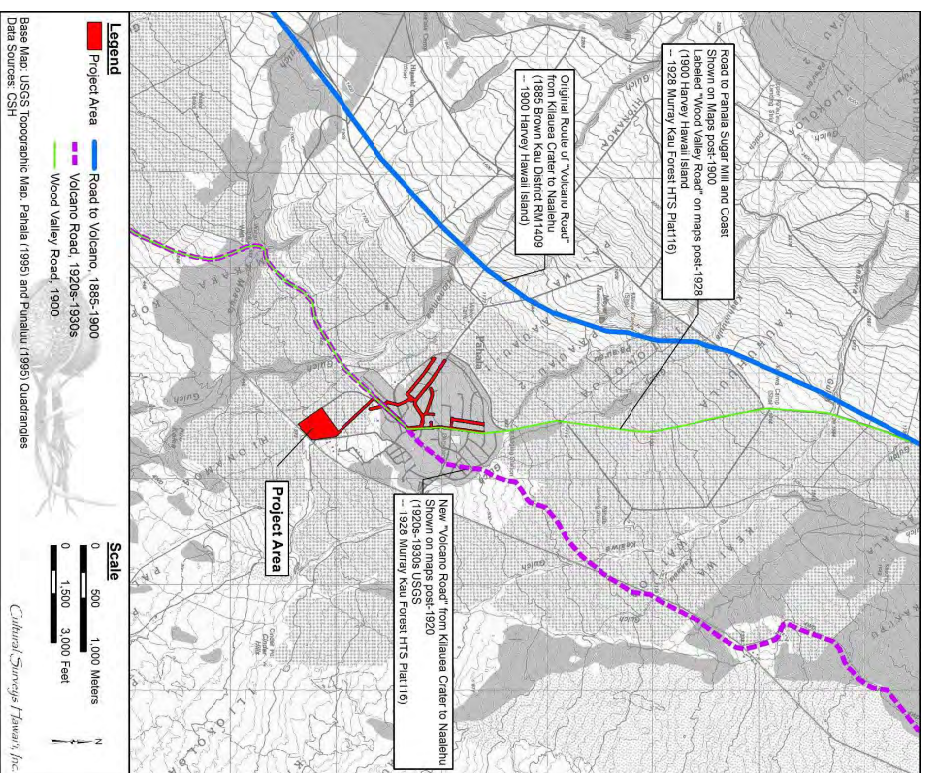


Figure 48. Portions of the 1995 Pahala and Punaluu USGS 7.5-minute topographic quadrangles showing the location of the project area in relation to historic roadways (map from Bautista et al. 2020:79)

LR for the Pahala LCC Closure Project, Honomaa, Palima, and P3'au'au 1 and 2, Ka'u, Hawai'i  
TMKs: multiple

**SIHP # 50-10-69-31089 (Adapted from Bautista et al. 2020:80)**

<b>FORMAL TYPE:</b>	Road alignment (Volcano Road)
<b>FUNCTION:</b>	Transportation
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	1920s-1930s
<b>TAX MAP KEY:</b>	[3] 9-6-005:999 (county right-of-way)
<b>LAND JURISDICTION:</b>	County of Hawai'i
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # 50-10-69-31089 consists of a 0.47-km (0.29-mile) section of the historic Volcano Road alignment located with the current project area [see Figure 24]. The section of this alignment within the project area follows the present Maile Street alignment located between the Lower Moaula Road fork and Pkakee Street, overlapping along Maile Street with the SIHP # -31088 alignment. Additional portions of these two historic routes also overlapped further west toward Nā'ālehu [see Figure 47]. Construction of the modern Maile Street roadway, which is approximately 10 m (33 ft) wide, has impacted all the constructed elements of the corresponding portions of the former Volcano Road roadway [see Figure 44 through Figure 46].

Background research, particularly examination of historic maps from the Pāhala and greater Ka'u areas, indicate a route extending from Kilauea Crater to Nā'ālehu called "Volcano Road," replacing the similarly named route located more *mauka* on maps from the late 1800s and early 1900s [see Figure 14, Figure 15, Figure 47, and Figure 48]. With the construction of the Māmalaha Highway (SIHP # 50-10-47-30187) in the 1940s the Volcano Road alignment became obsolete as a primary route; the 1967 USGS map [see Figure 16] shows the portion of the Volcano Road alignment along present Maile Street as part of a "Route 15" looping through Pāhala from the Belt Road, while the current USGS map [see Figure 1] does not label the route at all.

SIHP -31089 (Volcano Road) is a primary 1920s-1930s transportation route that linked Kilauea with Nā'ālehu.

Pursuant to HAR §13-275-6, SIHP # -31089 is assessed as significant under Criterion d for the information it has yielded about primary transportation routes in the Pāhala vicinity during the late nineteenth and early twentieth centuries. [Bautista et al. 2020:80]

# **Appendix C**

Early Consultation Comments and Responses

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

November 3, 2023

Wilson Okamoto Corporation  
Attn: Mr. Keola Cheng  
Director of Planning  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

via email: [publiccomment@wilsonokamoto.com](mailto:publiccomment@wilsonokamoto.com)

Dear Mr. Cheng:

SUBJECT: Environmental Information Document Consultation Package for **Pahala Large Capacity Cesspool Closure** located at Pahala, Island of Hawaii; Numerous TMKs and Multiple Roadways in Pahala on behalf of County of Hawaii, Department of Environmental Management

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

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

Sincerely,

*Russell Tsuji*

Russell Y. Tsuji  
Land Administrator

Enclosures  
cc: Central Files

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

October 12, 2023

**MEMORANDUM**

FROM: ~~TO:~~

**DLNR Agencies:**

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division ([DLNR.ENGR@hawaii.gov](mailto:DLNR.ENGR@hawaii.gov))
- Div. of Forestry & Wildlife ([rbyrosa.t.terrago@hawaii.gov](mailto:rbyrosa.t.terrago@hawaii.gov))
- Div. of State Parks
- Commission on Water Resource Management ([DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District ([gordon.c.heit@hawaii.gov](mailto:gordon.c.heit@hawaii.gov))
- Aha Moku Advisory Committee ([leimana.k.damate@hawaii.gov](mailto:leimana.k.damate@hawaii.gov))

TO: FROM:

Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT:

Environmental Information Document Consultation Package for **Pahala Large Capacity Cesspool Closure**

LOCATION:

Pahala, Island of Hawaii; Numerous TMKs and Multiple Roadways in Pahala

APPLICANT:

Wilson Okamoto Corporation on behalf of County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **November 3, 2023**.

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

**BRIEF COMMENTS:**

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed:

Print Name:

Carty S. Chang, Chief Engineer

Division:

Engineering Division

Date:

Oct 20, 2023

Attachments

cc: Central Files

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

**LD/Russell Y. Tsuji**

**Ref: Environmental Information Document Consultation Package for Pahala  
Large Capacity Cesspool Closure**

**Location: Pahala, Island of Hawaii**

**TMK(s): Numerous TMKs and Multiple Roadways in Pahala**

**Applicant: Wilson Okamoto Corporation on behalf of County of Hawaii,  
Department of Environmental Management**

**COMMENTS**

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center ([msc.fema.gov](http://msc.fema.gov)). Our Flood Hazard Assessment Tool (FHAT) ([fhat.hawaii.gov](http://fhat.hawaii.gov)) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed:   
CARTY S. CHANG, CHIEF ENGINEER

Date: Oct 20, 2023



10349-08  
March 14, 2024

Mr. Carty Chang  
Department of Land and Natural Resources – Engineering Division  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Subject: Environmental Information Document Early Consultation Package for the  
Pāhala LCC Closure  
Pāhala, Hawai‘i Island, Hawai‘i

Dear Mr. Chang:

Thank you for your letter dated October 20, 2023 regarding the subject Early Consultation Package for the Pāhala LCC Closure. We acknowledge your comments and they have been considered in the preparation of the EID. A record of your comments, along with this response, have been produced and are appended to the EID in Appendix C.

As discussed in Section 5.5.2 of the EID the project area includes lands within Flood Zone X which designates areas determined to be outside the 0.2- percent annual chance (500-year) floodplain.

Please note that the EID has been published and made available for review and comment on the County of Hawai‘i Department of Environmental Management website.

We appreciate your participation in the EID review process.

Sincerely,

Keola Cheng  
Director – Planning

cc: Mr. Mark Grant



10/27/23

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

October 12, 2023

**MEMORANDUM**

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

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: Environmental Information Document Consultation Package for **Pahala Large Capacity Cesspool Closure**

LOCATION: Pahala, Island of Hawaii; Numerous TMKs and Multiple Roadways in Pahala

APPLICANT: Wilson Okamoto Corporation on behalf of County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **November 3, 2023**.

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

- BRIEF COMMENTS:**
- ( ) We have no objections.
  - (  ) We have no comments.
  - ( ) We have no additional comments.
  - ( ) Comments are included/attached.

Signed: *[Signature]*  
 Print Name: GORDON C. HEIT  
 Division: Land Division  
 Date: 10/26/23

Attachments  
cc: Central Files



10349-08  
March 14, 2024

Mr. Gordon Heit  
Department of Land and Natural Resources – Land Division  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Subject: Environmental Information Document Early Consultation Package for the  
Pāhala LCC Closure  
Pāhala, Hawai‘i Island, Hawai‘i

Dear Mr. Heit:

Thank you for your letter dated October 26, 2023 regarding the subject Early Consultation Package for the Pāhala LCC Closure. We acknowledge that the Department of Land and Natural Resources Land Division – Hawai‘i District has no comments regarding the subject EID. A record of your comments, along with this response, have been produced and are appended to the EID in Appendix C.

Please note that the EID has been published and made available for review and comment on the County of Hawai‘i Department of Environmental Management website.

We appreciate your participation in the EID review process.

Sincerely,

Keola Cheng  
Director – Planning

cc: Mr. Mark Grant

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

November 9, 2023

Wilson Okamoto Corporation  
Attn: Mr. Keola Cheng  
Director of Planning  
1907 South Beretania Street, Suite 400  
Honolulu, Hawaii 96826

via email: [publiccomment@wilsonokamoto.com](mailto:publiccomment@wilsonokamoto.com)

Dear Mr. Cheng:

SUBJECT: Environmental Information Document Consultation Package for **Pahala Large Capacity Cesspool Closure** located at Pahala, Island of Hawaii; Numerous TMKs and Multiple Roadways in Pahala on behalf of County of Hawaii, Department of Environmental Management

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated November 3, 2023, enclosed are comments from the Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: [darlene.k.nakamura@hawaii.gov](mailto:darlene.k.nakamura@hawaii.gov). Thank you.

Sincerely,

*Russell Tsuji*

Russell Y. Tsuji  
Land Administrator

Enclosures  
cc: Central Files

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

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

P.O. BOX 621  
HONOLULU, HAWAII 96809

October 12, 2023

**MEMORANDUM**

FROM:

**DLNR Agencies:**

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division ([DLNR.ENGR@hawaii.gov](mailto:DLNR.ENGR@hawaii.gov))
- Div. of Forestry & Wildlife ([rbyrosa.t.terrago@hawaii.gov](mailto:rbyrosa.t.terrago@hawaii.gov))
- Div. of State Parks
- Commission on Water Resource Management ([DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District ([gordon.c.heit@hawaii.gov](mailto:gordon.c.heit@hawaii.gov))
- Aha Moku Advisory Committee ([leimana.k.damate@hawaii.gov](mailto:leimana.k.damate@hawaii.gov))

TO:

Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT:

Environmental Information Document Consultation Package for **Pahala Large Capacity Cesspool Closure**

LOCATION:

Pahala, Island of Hawaii; Numerous TMKs and Multiple Roadways in Pahala

APPLICANT:

Wilson Okamoto Corporation on behalf of County of Hawaii, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **November 3, 2023**.

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

**BRIEF COMMENTS:**

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed:

*Kathryn Stanaway*

Print Name:

KATHRYN S. STANAWAY, Acting Wildlife Prog. Mgr.

Division:

Forestry and Wildlife

Date:

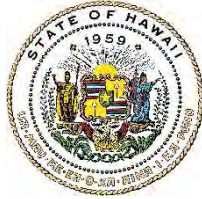
Nov 9, 2023

Attachments

cc: Central Files

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

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

LAURA H.E. KAAKUA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA

DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

November 9, 2023

Log no. 4304

**MEMORANDUM**

**TO:** RUSSELL Y. TSUJI, Administrator  
Land Division

**FROM:** KATHRYN E. STANAWAY, Acting Wildlife Program Manager  
Division of Forestry and Wildlife

**SUBJECT: Request for Comments on the Environmental Information Document for the Proposed Pahala Large Capacity Cesspool Closure, Hawai'i**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments on the Environmental Information Document (EID) for the Proposed Pahala Large Capacity Cesspool (LCC) Closure located in the Ka'u district on the island of Hawai'i. A portion of the Pahala community is serviced by a sewer system that discharges sewage into two Large Capacity Cesspools (LCCs). The EPA and the County of Hawai'i entered into an Administrative Order on Consent (AOC) to close the two existing cesspools by 2026. The proposed action includes the construction of facilities that would allow the county to close the two cesspools in Pahala and meet compliance requirements. The alternatives for the proposed action include the following: a package plant and new collection system (Alternative 1); a package plant connected to the existing collection system (Alternative 2); a maintenance contract model Individual Wastewater System (IWS) program (Alternative 3); and an operating permit model IWS (Alternative 4). Under Alternative 1 the County would obtain a portion of TMK: 9-6-002:018 to construct a wastewater collection system, primarily within the public right-of-way a to collect and convey sanitary waste from the currently connected and accessible properties to the new treatment and disposal facility. Alternative 2 would include the measures in Alternative 1 with the addition of connecting the existing 80-year-old collection system to the WWTP. Alternative 3 would involve the County issuing funds as well as managing project construction of an Individual Wastewater System (IWS) which would consist of a septic tank, disposal systems, and interconnecting piping between the IWS and the existing dwelling. Alternative 4 would include the design under Alternative 3 with the addition that homeowners would be responsible for maintenance and/or responding to trouble calls, monitoring and record keeping of maintenance.

Thank you for allowing us to review the EID, DOFAW recommends the following measures be included with the intent to avoid construction and operational impacts to State-listed species.

The State listed 'ōpe'ape'a or Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15, when young seabirds make their maiden voyage to sea.

If nighttime construction is required during the seabird fledging season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting <https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response>. Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i please visit <https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>.

State-listed waterbirds such as ae'ō or Hawaiian stilt (*Himantopus mexicanus knudseni*), 'alae ke'oke'ō or Hawaiian coot (*Fulica alai*), and nēnē or Hawaiian Goose (*Branta sandvicensis*) could potentially occur at or in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction, all activities within 100 feet (30 meters) should cease and the bird or birds should not be approached. Work may continue after the bird or birds leave the area of their own accord. If a nest is discovered at any point, please contact the Hawai'i Island Branch DOFAW Office at (808) 974-4221 and establish a buffer zone around the nest.

DOFAW is concerned about the wastewater treatment facility attracting vulnerable birds to areas that may host nonnative predators such as cats, rodents, and mongooses. We therefore recommend taking action to minimize predator presence; i.e., remove cats, place bait stations for rodents and mongoose, and provide covered trash receptacles. Implementing additional mitigation measures is also recommended to avoid avian mortality during project design and during operation for the long term.

The endemic pueo or Hawaiian Short-Eared Owl (*Asio flammeus sandwichensis*) could potentially nest in the project area. Before any potential vegetative alteration, especially ground-based disturbance, we recommend that line transect surveys are conducted during crepuscular hours through the project area. If a pueo nest is discovered, a minimum buffer distance of 100 meters from the nest should be established until chicks are capable of flight.

The State listed 'io or Hawaiian Hawk (*Buteo solitarius*) may occur in the project vicinity. Prior to undertaking vegetation clearing, DOFAW recommends that pre-construction surveys of the area be conducted by a qualified biologist following appropriate survey methods (Gorressen et al., 2008) to ensure no Hawaiian Hawk nests are present, which may occur during the breeding season from March to September. The survey should be conducted at least 10 days prior to the start of construction. If an 'io nest is detected, a buffer zone of 100 meters (330 feet) should be established around it where no construction shall occur until the chick or chicks have fledged, or the nest is abandoned and DOFAW staff should be immediately notified. If adult individuals are detected in the area during construction, all activities within 30 meters (100 feet) of the bird should cease. Work may continue when the bird has left the area on its own.

The project area is within the range of the State listed Blackburn's Sphinx Moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants, which includes tree tobacco (*Nicotiana glauca*), that grow in disturbed soil. We recommend contacting the Hawai'i Island Branch DOFAW office at (808) 974-4221 for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by BSM. DOFAW recommends removing plants less than one meter in height or during the dry season to avoid harm to BSM. If you intend to either remove tree tobacco over one meter in height or to disturb the ground around or within several meters of these plants, they must be thoroughly inspected by a qualified entomologist for the presence of BSM eggs and larvae.

DOFAW recommends using native plant species for landscaping that are appropriate for the area; i.e., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant invasive species. DOFAW also recommends referring to [www.plantpono.org](http://www.plantpono.org) for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coqui Frogs, etc.), or invasive plant parts (e.g., African Tulip, Octopus Tree, Trumpet Tree, etc.) that could harm our native species and ecosystems. We recommend consulting the Big Island Invasive Species Committee (BIISC) at (808) 933-3340 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

To prevent the spread of Rapid 'Ōhi'a Death (ROD), DOFAW requests that the information and guidance at the following website be reviewed and followed if 'ōhi'a trees are present at the project site that will be removed, trimmed, or potentially injured:  
<https://cms.ctahr.hawaii.edu/rod>.

<sup>1</sup>Gorresen, P. M., R. J. Camp, J. L. Klavitter, and T. K. Pratt. 2008. Abundance, distribution and population trend of the Hawaiian Hawk: 1998-2007. Hawai'i Cooperative Studies Unit Technical Report HCSU-009. University of Hawai'i at Hilo. 53 pp., incl. 8 figures, 3 tables & 1 appendix.

Due to the arid climate and risks of wildfire to listed species, we recommend coordinating with the Hawai'i Wildfire Management Organization at (808) 850-0900 or [admin@hawaiiwildfire.org](mailto:admin@hawaiiwildfire.org), on how wildfire prevention can be addressed in the project area. When engaging in activities that have a high risk of starting a wildfire (i.e. welding in grass), it is recommended that you:

- o Wet down the area before starting your task,
- o Continuously wet down the area as needed,
- o Have a fire extinguisher on hand, and
- o In the event that your vision is impaired, (i.e. welding goggles) have a spotter to watch for fire starts.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Myrna N. Giraldo Pérez, Protected Species Habitat Conservation Planning Coordinator at (808) 265-3276 or [myrna.giraldo-perez@hawaii.gov](mailto:myrna.giraldo-perez@hawaii.gov).

Sincerely,

*Kathryn Stanaway*

KATHRYN E. STANAWAY  
Acting Wildlife Program Manager



### **Avoidance, Minimization, and Conservation Measures for listed plants in the Pacific Islands**

Project activities may affect listed plant species by causing physical damage to plant parts (roots, stems, flowers, fruits, seeds, etc.) as well as impacts to other life requisite features of their habitat, which may result in reduction of germination, growth and/or reproduction. Cutting and removal of vegetation surrounding listed plants has the potential to alter microsite conditions (e.g., light, moisture, temperature), damaging or destroying the listed plants and also increasing the risk of invasion by nonnative plants, which can result in higher incidence or intensity of fire. Activities such as grazing, use of construction equipment and vehicles, and increased human traffic (i.e., trails, visitation, monitoring), can cause ground disturbance, erosion, and/or soil compaction, which decrease absorption of water and nutrients and damage plant root systems and may result in reduced growth and/or mortality of listed plants. Soil disturbance or removal has the potential to negatively impact the soil seed bank of listed plant species if such species are present or historically occurred in the project area.

In order to avoid or minimize potential adverse effects to listed plants that may occur on the proposed project site, we recommend minimizing disturbance outside of existing developed or otherwise modified areas. When disturbance outside existing developed or modified sites is proposed, conduct a botanical survey for listed plant species within the project action area, defined as the area where direct and indirect effects are likely to occur. Surveys should be conducted by a knowledgeable botanist with documented experience in identifying native Hawaiian and Pacific Islands plants, including listed plant species. Botanical surveys should optimally be conducted during the wettest part of the year (typically October to April) when plants and identifying features are more likely to be visible, especially in drier areas. If surveys are conducted outside of the wet season, the Service may assume plant presence.

The boundary of the area occupied by listed plants should be marked with flagging by the surveyor. To avoid or minimize potential adverse effects to listed plants, we recommend adherence to buffer distances for the activities in the **Table below**. Where disturbed areas do not need to be maintained as an open area, restore disturbed areas using native plants as appropriate for the location.

Whenever possible we recommend using native plants for landscaping purposes. The following websites are good resources to use when choosing landscaping plants: Landscape Industry Council of Hawai'i Native Plant Poster

(<https://hawaiiscap.com/Publications>), Native Hawaiian Plants for Landscaping, Conservation, and Reforestation

(<https://www.ctahr.hawaii.edu/oc/freepubs/pdf/of-30.pdf>), and Best Native Plants for Landscapes

(<https://www.ctahr.hawaii.edu/oc/freepubs/pdf/OF-40.pdf>).

If listed plants occur in a project area, the avoidance buffers are recommended to reduce direct and indirect impacts to listed plants from project activities. However, where project activities will occur within the recommended buffer distances, additional consultation is required. The impacts to the plants of concern within the buffer area may be reduced by placing temporary fencing or other barriers at the boundary of the disturbance, as far from the affected plants as practicable.

The above guidelines apply to areas outside of designated critical habitat. If project activities occur within designated critical habitat unit boundaries, additional consultation is required.

All activities, including site surveys, risk introducing nonnative species into project areas. Specific attention needs to be made to ensure that all equipment, personnel, and supplies are properly checked and are free of contamination (weed seeds, organic matter, or other contaminants) before entering project areas. Quarantines and or management activities occurring on specific priority invasive species proximal to project areas need to be considered or adequately addressed. This information can be acquired by contacting local experts such as those on local invasive species committees (Kaua'i: <https://www.kauaiisc.org/>; O'ahu: <https://www.oahuisc.org/>; Maui Nui: <https://mauiinvasive.org/>; and Hawai'i: <https://www.hiisc.org/>)

Table 1. Recommended buffer distances to minimize and avoid potential adverse impacts to listed plants from activities listed below.

Action	Buffer Distance (feet (meters)) – Keep Project Activity This Far Away from Listed Plant	
	Grasses/Herbs/Shrubs and Terrestrial Orchids	Trees and Arboreal Orchids
Walking, hiking, surveys	3 ft (1 m)	3 ft (1 m)
Cutting and Removing Vegetation By Hand or Hand Tools (e.g., weeding)	3 ft (1 m)	3 ft (1 m)
Mechanical Removal of Individual Plants or Woody Vegetation (e.g., chainsaw, weed eater)	3 ft up to height of removed vegetation (whichever greater)	3 ft up to height of removed vegetation (whichever greater)
Removal of Vegetation with Heavy Equipment (e.g., bulldozer, tractor, “push hog”)	2x width equipment + height of vegetation	820 ft (250 m)

Action		Buffer Distance (feet (meters)) – Keep Project Activity This Far Away from Listed Plant	
		Grasses/Herbs/Shrubs and Terrestrial Orchids	Trees and Arboreal Orchids
Use of Approved Herbicides (following label)	Ground-based Spray Application; hand application (no wand application; spot treatment)	10 ft (3 m)	Crown diameter
	Ground-based Spray Application; manual pump with wand, backpack	50 ft (15 m)	Crown diameter
	Ground-based Spray Application; vehicle-mounted tank sprayer	50 ft (15 m)	Crown diameter
	Aerial Spray (ball applicator)	250 ft (76 m)	250 ft (76 m)
	Aerial Application – herbicide ballistic technology (individual plant treatment)	100 ft (30 m)	Crown diameter
Aerial Spray (boom)		Further consultation required	Further consultation required
Use of Insecticides (pollinators, seed dispersers)		Further consultation required	Further consultation required
Ground/Soil Disturbance/Outplanting/Fencing (Hand tools, e.g., shovel, ‘ō‘ō; Small mechanized tools, e.g., auger)		20 ft (6 m)	2x crown diameter
Ground/Soil Disturbance (Heavy Equipment)		328 ft (100 m)	820 ft (250 m)
Surface Hardening/Soil compaction	Trails (e.g., human, ungulates)	20 ft (6 m)	2x crown diameter
	Roads/Utility Corridors, Buildings/Structures	328 ft (100 m)	820 ft (250 m)

Action	Buffer Distance (feet (meters)) – Keep Project Activity This Far Away from Listed Plant	
	Grasses/Herbs/Shrubs and Terrestrial Orchids	Trees and Arboreal Orchids
Prescribed Burns	Further consultation required	Further consultation required
Farming/Ranching/Silviculture	820 ft (250 m)	820 ft (250 m)

**Definitions** (Wagner *et al.* 1999)

**Crown:** The leafy top of a tree.

**Herb:** A plant, either annual, biennial, or perennial, with the non-woody stems dying back to the ground at the end of the growing season.

**Shrub:** A perennial woody plant with usually several to numerous primary stems arising from or relatively near the ground.

**Tree:** A woody perennial that usually has a single trunk

## References Cited

- USFWS. 2010. Endangered and threatened wildlife and plants; determination of endangered status for 48 species on Kauai and designation of critical habitat. Federal Register 75: 18960–19165.
- . 2012. Endangered and threatened wildlife and plants; endangered status for 23 species on Oahu and designation of critical habitat for 124 species; final rule. Federal Register 77: 57648–57862.
- . 2013a Endangered and threatened wildlife and plants; determination of endangered status for 38 species from Molokai, Lanai, and Maui. Federal Register 78: 32014–32065.
- . 2013b. Endangered and threatened wildlife and plants; determination of endangered species status for 15 species on Hawaii Island. Federal Register 78: 64638–64690.
- . 2016. Endangered and threatened wildlife and plants; determination of endangered status for 49 species from the Hawaiian Islands. Federal Register 81: 67786–67860.
- . 2016. USFWS Rare plant database. Unpublished.
- Wagner, W.L., Sohmer, S., and D.R. Herbst. 1999. Manual of the flowering plants of Hawaii, revised edition. Honolulu, Hawaii. University of Hawaii and Bishop Museum Press. 1,919 pp.



10349-08  
March 14, 2024

Ms. Kathryn Stanaway  
Department of Land and Natural Resources  
Division of Forestry and Wildlife  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Subject: Environmental Information Document Early Consultation Package for the  
Pāhala LCC Closure  
Pāhala, Hawai‘i Island, Hawai‘i

Dear Ms. Stanaway:

Thank you for your letter dated November 9, 2023 regarding the subject Early Consultation Package for the Pāhala LCC Closure. We acknowledge your comments and they have been considered in the preparation of the EID. A record of your comments, along with this response, have been produced and are appended to the EID in Appendix C.

As discussed in Section 5.6 of the EID, multiple botanical and biological field surveys have been conducted within the project area. Based on the findings of the field surveys, construction activities associated with the project are not anticipated to result in adverse impacts to botanical and faunal resources in the Pāhala area; however, the recommended mitigation measures shall be implemented in order to avoid any potential impact to these resources.

Please note that the EID has been published and made available for review and comment on the County of Hawai‘i Department of Environmental Management website.

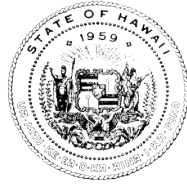
We appreciate your participation in the EID review process.

Sincerely,

Keola Cheng  
Director – Planning

cc: Mr. Mark Grant

JOSH GREEN, M.D.  
GOVERNOR OF HAWAII  
KE KIA'AINA O KA MOKU'AINA 'O HAWAII'



KENNETH S. FINK, MD, MGA, MPH  
DIRECTOR OF HEALTH  
KA LUNA HO'OKELE

**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
**KA 'OIHANA OLAKINO**  
P. O. BOX 3378  
HONOLULU, HI 96801-3378#

In reply, please refer to:  
File:

6646 – 3 9 6 002 018 EID  
Pāhala LCC Closure

November 22, 2023

Mr. Keola Cheng  
Director of Planning  
Wilson Okamoto Corporation  
1907 South Beretania Street Suite 400  
Honolulu, Hawaii 96826  
Email: [publiccomment@wilsonokamoto.com](mailto:publiccomment@wilsonokamoto.com)

Dear Mr. Cheng:

Subject: Environmental Information Document Consultation Package for  
Pāhala LCC Closure  
TMK (3) 9-6-002: 018

Thank you for allowing us the opportunity to provide comments for the subject document.

If the subject project is funded by the State of Hawai'i Clean Water State Revolving Fund (CWSRF) Program, the following would apply.

1. For Alternative #1, the project would need to comply with the Hawai'i State Environmental Review Process (SERP) and include all applicable federal environmental cross-cutting authorities. The SERP may be found on the following website: <https://health.hawaii.gov/wastewater/files/2018/06/serp.pdf>.
2. For Alternative #2, the project would need to comply with the SERP and include all applicable federal environmental cross-cutting authorities.
3. For Alternative #3, no other information is needed. Environmental review and addressing applicable federal environmental cross-cutting authorities not required.
4. For Alternative #4, no other information is needed. Environmental review and addressing applicable federal environmental cross-cutting authorities not required.

Please be informed that the proposed wastewater systems for the subdivision/development may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources, or the exercise of traditional cultural practices. All wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems."

Mr. Cheng  
November 22, 2023  
Page 2

Should you have any questions, please call Mr. Chane Hayashida of my staff at (808) 586-4294.

Sincerely,



SINA PRUDER, P.E., CHIEF  
Wastewater Branch

LM/MST:ct

c: Ms. Kaylin Enos (via email)  
Mr. Chane Hayashida (via email)  
Ms. Ciely Oda (via email)





10349-08  
March 14, 2024

Ms. Sina Pruder  
Department of Health – Wastewater Branch  
State of Hawaii  
P.O. Box 3378  
Honolulu, HI 96801

Subject: Environmental Information Document Early Consultation Package for the  
Pāhala LCC Closure  
Pāhala, Hawai‘i Island, Hawai‘i

Dear Ms. Pruder:

Thank you for your letter dated November 22, 2023 regarding the subject Early Consultation Package for the Pāhala LCC Closure. We acknowledge your comments and they have been considered in the preparation of the EID. A record of your comments, along with this response, have been produced and are appended to the EID in Appendix C.

As the subject project will be funded by the State of Hawai‘i Clean Water State Revolving Fund (CWSRF) Program, we acknowledge that Alternative #1 and Alternative #2 would be required to comply with the Hawai‘i State Environmental Review Process. The EID discusses previous environmental review efforts for the subject project as well as compliance with various federal cross-cutting authorities.

Please note that the EID has been published and made available for review and comment on the County of Hawai‘i Department of Environmental Management website.

We appreciate your participation in the EID review process.

Sincerely,

Keola Cheng  
Director – Planning

cc: Mr. Mark Grant

**From:** [Cole, Colleen](#)  
**To:** [Public Comment](#)  
**Cc:** [Asman, Lindsay](#); [PIFWO Admin, FW1](#)  
**Subject:** Request for comments for proposed Pāhala Large Capacity Cesspool Closure project  
**Date:** Monday, October 23, 2023 10:54:38 AM  
**Attachments:** [IPaC Info Letter Species List Instructions PIFWO 20Apr2022 Final.pdf](#)  
[Hawaiianhoarybat-HawaiianHoaryBat.pdf](#)  
[Hawaiianseabirds-HawaiianPetrelAnd2MoreSpecies.pdf](#)  
[Hawaiianwaterbirds-HawaiianDuckAnd3MoreSpecies.pdf](#)  
[Plant Avoidance and Minimization Measures FINAL May 2023.docx](#)

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Aloha Keola Cheng,

The Pacific Islands Fish and Wildlife Office received your request for comments on the proposed Pāhala Large Capacity Cesspool Closure project located in the Ka'ū District on Hawai'i Island. We reviewed the proposed project summarized in the Environmental Information Document you provided. At this time, we recommend that the project planning for any of the four alternative actions include avoidance and minimization measures (AMMs) for endangered species that may be affected by project activities.

You can obtain an official species list in the [Information for Planning and Consultation \(IPaC\)](#) online tool. Please see the attached pdf with detailed directions on how you obtain an official species list in IPaC.

	<p><b>IPaC: Information for Planning and Consultation</b></p> <p>IPaC is a project planning tool that streamlines the USFWS environmental review process.</p> <p><a href="http://ipac.ecosphere.fws.gov">ipac.ecosphere.fws.gov</a></p>
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Once you have entered basic project information, including a map of the project, IPaC will generate a species list comprised of all federally listed species that may occur in the project area. Each species includes a link in which you will find avoidance and minimization measures (AMMs) for that species.

Attached to this email are AMMs that you will likely encounter when you obtain an official species list for the project.

Please feel free to contact me if you need additional assistance.

Mahalo,  
**Colleen Cole**  
**Biologist - Maui Nui & Hawai'i Island Team**

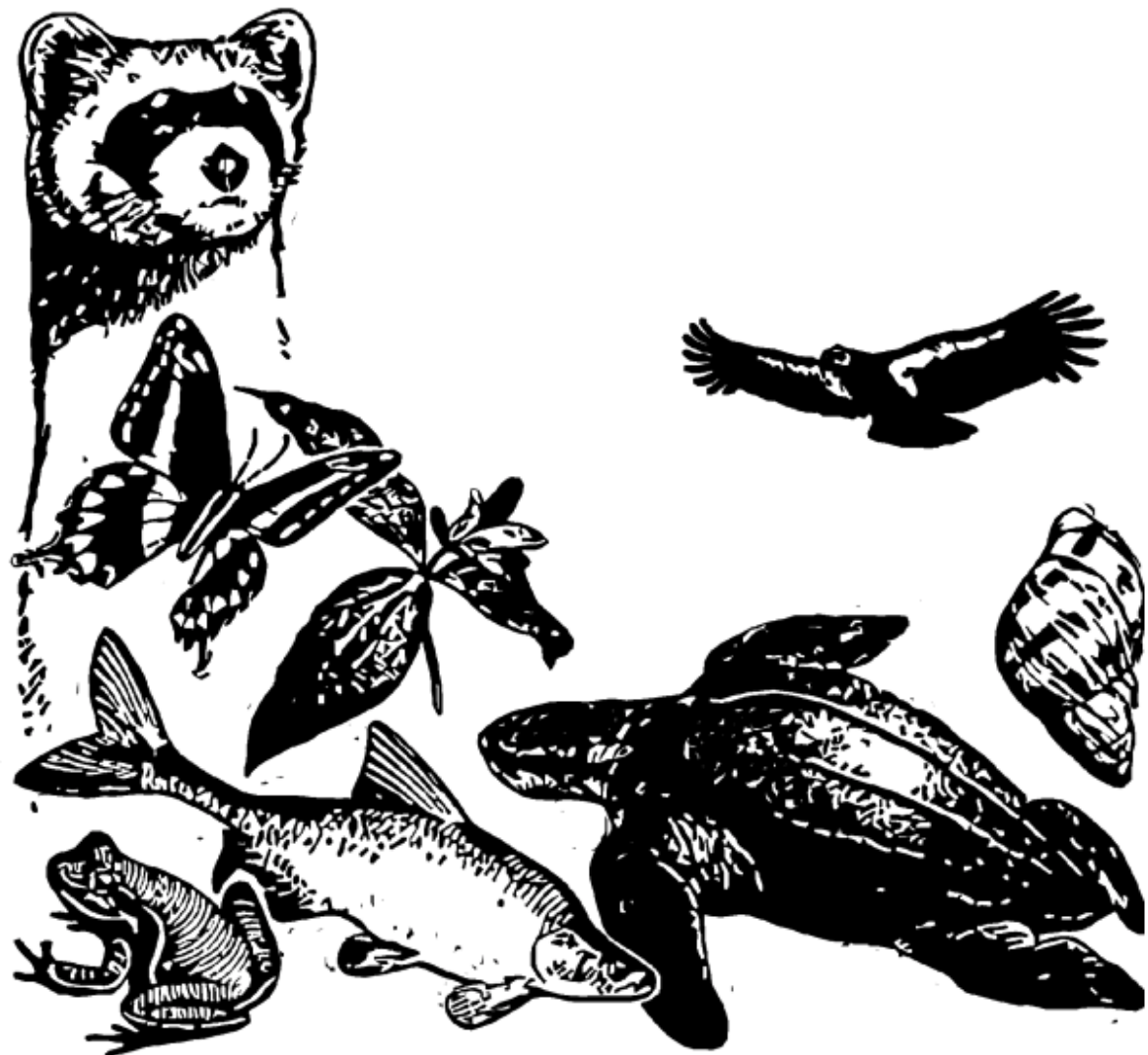
Pacific Islands Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
154 Waiānuenu Avenue Suite 103  
PO Box 10225  
Hilo, Hawai'i 96720-2452

Cell Phone: 808-859-1002  
Email: [colleen\\_cole@fws.gov](mailto:colleen_cole@fws.gov)

# Hawaiian hoary bat

## *Hawaiian Hoary Bat*

Generated October 18, 2023 08:52 PM UTC, IPaC v6.99.0-rc3



**Hawaiian hoary bat (*Lasiurus cinereus semotus*):** The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

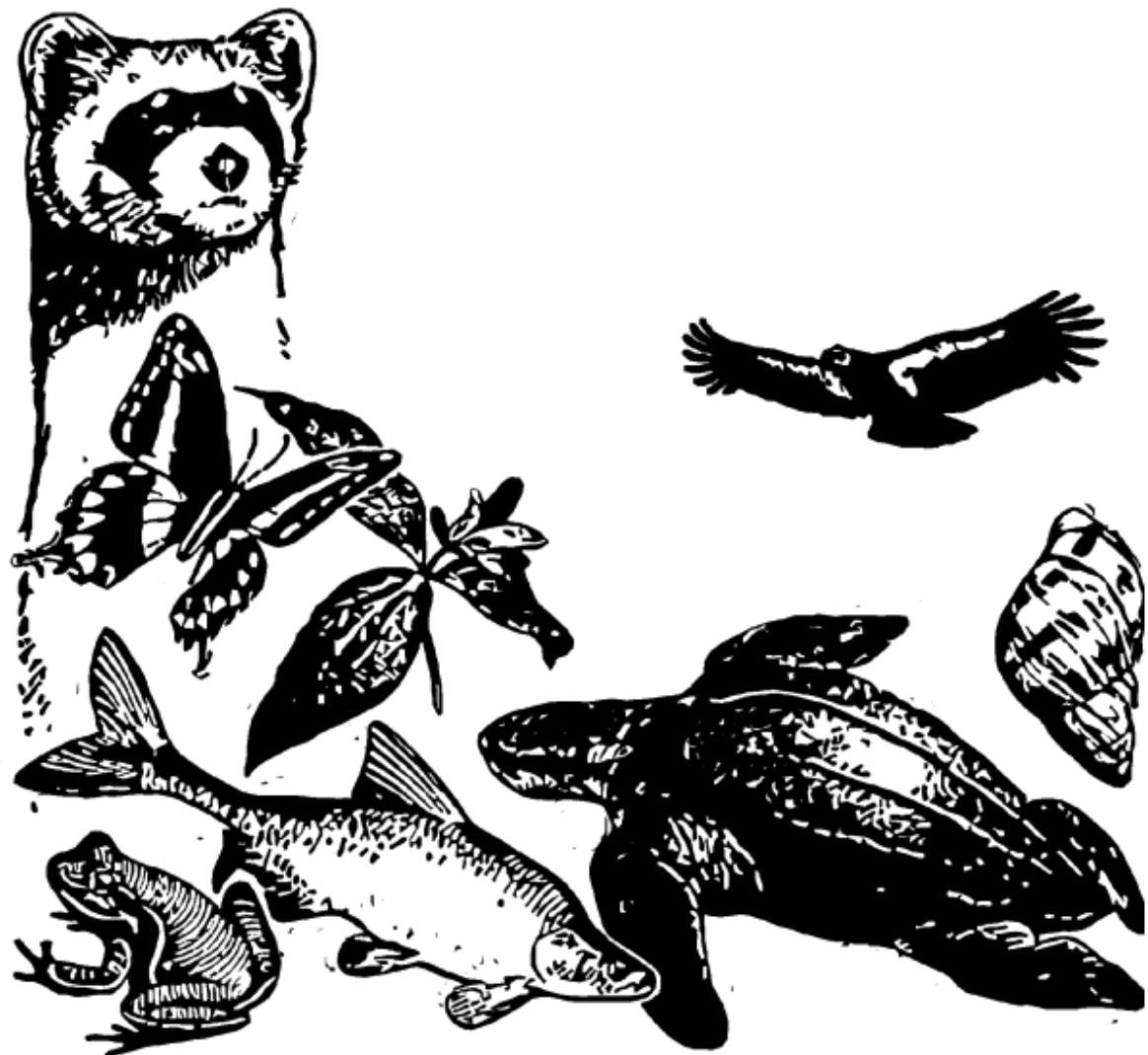
To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

# Hawaiian seabirds

## *Hawaiian Petrel and 2 more species*

Generated October 18, 2023 08:40 PM UTC, IPaC v6.99.0-rc3



# General Project Design Guidelines - Hawaiian Petrel and 2 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: February 1, 2022 for the following species included in your project

Hawaiian Petrel *Pterodroma sandwichensis*

Newell's Townsend's Shearwater *Puffinus auricularis newelli*

Band-rumped Storm-petrel *Oceanodroma castro*

**Endangered Hawaiian petrel (*Pterodroma sandwichensis*), Threatened Newell's shearwater (*Puffinus auricularis newelli*), and Endangered Hawaii Distinct Population Segment of the band-rumped storm-petrel (*Oceanodroma castro*):**

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

Listed seabirds have been documented colliding with communication towers, particularly in areas of high seabird passage rate. In general, self-supporting monopoles are the least likely to result in collisions, whereas lattice towers, particularly those that rely on guy-wires, have a greater risk.

To avoid and minimize the likelihood that towers will result in collisions by listed seabirds we recommend you incorporate the following measures into your project description:

- The profile of the tower should be as small as possible, minimize the extent of the tower that protrudes above the surrounding vegetation layer, and avoid the use of guywires.
- If the top of the tower must be lit to comply with Federal Aviation Administration regulations, use a flashing red light verses a steady-beam red or white light.
- If possible, co-locate with existing towers or facilities.

Seabirds have been known to collide with fences, powerlines, and other structures near nesting colonies. To avoid and minimize the likelihood of collision we recommend you incorporate the following measures into your project description:

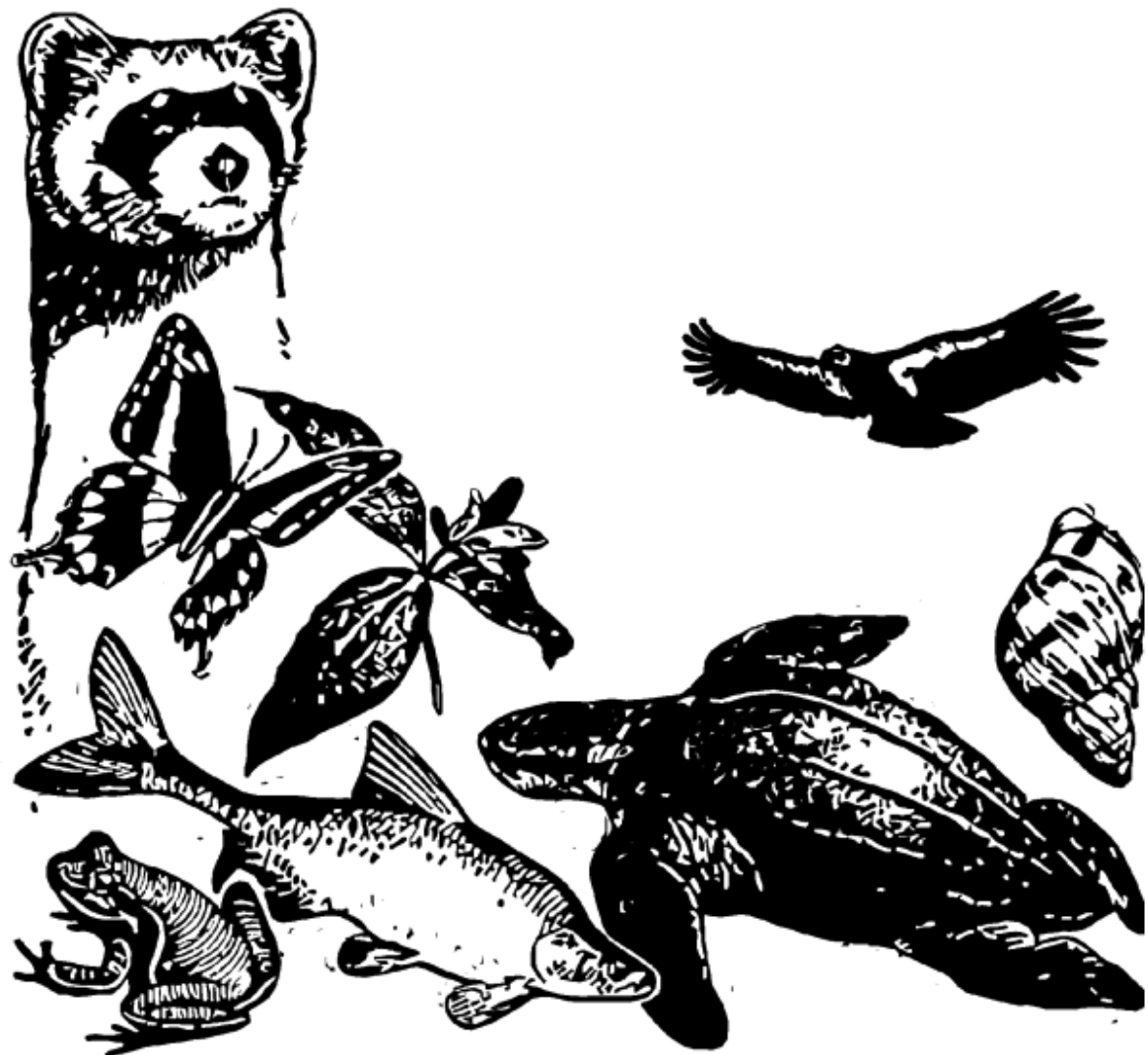
- Where fences extend above vegetation, integrate three strands of polytape into the fence to increase visibility.
- For powerlines, guywires and other cables, minimize exposure above vegetation height and vertical profile.



# Hawaiian waterbirds

## *Hawaiian Duck and 3 more species*

Generated October 18, 2023 08:41 PM UTC, IPaC v6.99.0-rc3



# General Project Design Guidelines - Hawaiian Duck and 3 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: February 1, 2022 for the following species included in your project

Hawaiian Duck *Anas wyvilliana*

Hawaiian Common Gallinule *Gallinula galeata sandvicensis*

Hawaiian Stilt *Himantopus mexicanus knudseni*

Hawaiian Coot *Fulica alai*

**Hawaiian waterbirds (Hawaiian stilt, *Himantopus mexicanus knudseni*; Hawaiian coot, *Fulica alai*; Hawaiian common gallinule, *Gallinula galeata sandvicensis*; Hawaiian duck, *Anas wyvilliana*):**

Listed Hawaiian waterbirds are found in fresh and brackish-water marshes and natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation. Hawaiian ducks are also subject to threats from hybridization with introduced mallards.

The creation of standing or open water may result in the attraction of Hawaiian waterbirds to a site (creative nuisance or habitat sink). In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water), if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

To avoid and minimize potential project impacts to Hawaiian waterbirds we recommend you incorporate the following applicable measures into your project description:

- In areas where waterbirds are known to be present, post and enforce reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- Incorporate the Service's Best Management Practices for Work in Aquatic Environments into the project design.
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys, where appropriate habitat occurs within the vicinity of the proposed project site, prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
  - Contact the Service within 48 hours for further guidance.
  - Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.
  - Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth moving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.



10349-08  
March 14, 2024

Ms. Colleen Cole  
Pacific Islands Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
154 Waiānuenu Avenue, Suite 103  
Hilo, Hawai‘i 96720

Subject: Environmental Information Document Early Consultation Package for the  
Pāhala LCC Closure  
Pāhala, Hawai‘i Island, Hawai‘i

Dear Ms. Cole:

Thank you for your letter dated October 23, 2023 regarding the subject Early Consultation Package for the Pāhala LCC Closure. We acknowledge your comments and they have been considered in the preparation of the EID. A record of your comments, along with this response, have been produced and are appended to the EID in Appendix C.

As discussed in Section 5.6 of the EID, multiple botanical and biological field surveys have been conducted within the project area. Based on the findings of the field surveys, construction activities associated with the project are not anticipated to result in adverse impacts to botanical and faunal resources in the Pāhala area; however, the recommended mitigation measures shall be implemented in order to avoid any potential impact to these resources.

Please note that the EID has been published and made available for review and comment on the County of Hawai‘i Department of Environmental Management website.

We appreciate your participation in the EID review process.

Sincerely,

Keola Cheng  
Director – Planning

cc: Mr. Mark Grant

# **Appendix D**

Public Outreach Materials

Mitchell D. Roth  
Mayor

Deanna S. Sako  
Managing Director



Ramzi I. Mansour  
Director

Brenda Iokepa-Moses  
Deputy Director

# County of Hawai'i

## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

345 Kekūanāo'a Street, Suite 41 · Hilo, Hawai'i 96720 · cohdem@hawaiicounty.gov  
Ph: (808) 961-8083 · Fax: (808) 961-8086

March 1, 2024

Re: Pāhala Large Capacity Cesspool Closure Project

Aloha,

In compliance with the Administrative Order on Consent between the U.S. Environmental Protection Agency and the County of Hawai'i that requires the closure of the Pāhala Large Capacity Cesspools, the Revised Draft Pāhala Environmental Information Document (EID) will be available beginning Friday, March 15, at the Pāhala Public Library, and also at this website:

<https://www.dem.hawaiicounty.gov/projects/pahala-na-alehu-large-capacity-cesspool-closures>

The County also announces that the public comment period on the Revised Draft EID will open March 15 and end April 15, 2024. All substantive comments on the Revised Draft EID will receive a response and will be incorporated into the Final EID, which is due to be submitted to EPA by July 30, 2024.

The Revised Draft EID tentatively identifies the County's preferred option to be a package wastewater treatment plant with new collection system (Option 1) and among other things will provide a draft basis for the tentative selection.

**The public meeting to gather community input on the Draft Environmental Information Document is scheduled for 6 p.m. Wednesday, April 10, at the Pāhala Community Center, 96-1149 Kamani Street.**

To request reasonable accommodations for this meeting, please call (808) 961-8099. If you wish to update or correct your mailing information or request notices via email, write to cohdem@hawaiicounty.gov or call the number above. If you are unable to attend this April 10 meeting and wish to provide a comment or have a question, please write to cohdem@hawaiicounty.gov with the subject line "Pāhala EID" before April 15, 2024.

Sincerely,

Brenda Iokepa-Moses, Deputy Director  
Department of Environmental Management, County of Hawai'i

## **PĀHALA WASTEWATER PUBLIC MEETING AND PUBLIC COMMENT PERIOD**

The County of Hawai'i Department of Environmental Management announces the availability of the Amended Draft Environmental Information Document (EID) and public comment period until April 15, 2024, regarding the closure of the large capacity cesspools in Pāhala.

The County is accepting comment on its tentative identification of a package wastewater treatment plant with new collection system as the preferred option. The Draft EID is available at the Pāhala Public Library and at the website address below. The community is invited to participate at an upcoming meeting:

**WHEN:** 6 p.m. Wednesday, April 10

**WHERE:** Pāhala Community Center,  
96-1149 Kamani Street

**ONLINE:**

<https://www.zoomgov.com/j/16031058165>

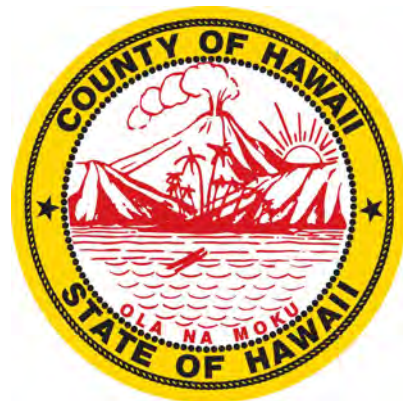
**For questions call (808) 961-8099 or email  
[cohdem@hawaiiicounty.gov](mailto:cohdem@hawaiiicounty.gov)**

[https://www.dem.hawaiiicounty.gov/  
projects/pahala-na-alehu-large-capacity-  
cesspool-closures](https://www.dem.hawaiiicounty.gov/projects/pahala-na-alehu-large-capacity-cesspool-closures)

# Wastewater Public Meeting for Pāhala

The Department of Environmental Management of the County of Hawai‘i will accept public input on the Revised Draft Environmental Information Document for the Pāhala Large Capacity Cesspool Closure Project and the County’s selection of a new package plant and new collection system.

Pāhala Community Center  
96-1149 Kamani Street  
**Wednesday, April 10, 2024**  
**6 p.m. start**



Online:

<https://www.zoomgov.com/j/16031058165>

- Public comment period March 15-April 15, 2024
- Revised Draft EID is available at the Pāhala Public and School Library and at [dem.hawaiicounty.gov/projects](http://dem.hawaiicounty.gov/projects)

Contact: (808) 961-8099  
[cohdem@hawaiicounty.gov](mailto:cohdem@hawaiicounty.gov)

The regular meeting place is accessible to persons with disabilities.



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**Environmental Information Document**  
**Pāhala Large Capacity Cesspool Closure**

