Law Office of Lance D. Collins
Lance D. Collins 8246
Post Office Box 782
Makawao, Hawai'i 96768
808.243.9292

Law Office of Bianca Isaki
Bianca K. Isaki 9977
1720 Huna Street, 401B
Honolulu, Hawai'i 96837
(808) 927.5606

Attorneys for Intervenor
LIKO MARTIN

BEFORE THE LAND USE COMMISSION OF THE

STATE OF HAWAI'I

In the Matter of the Petition of:	)	DOCKET NO. A11-791
	)	
HG KAUAI JOINT VENTURE, LLC	)	INTERVENOR'S REBUTTAL EXHIBIT
To Amend the Land Use District Boundary of	)	LIST; REBUTTAL EXHIBITS;
Certain Lands Situated at Kapa'a, Island of	)	CERTIFICATE OF SERVICE
Kauai, State of Hawai'i, consisting of	)	
approximately 96 Acres, from the Agricultural	)	
Land Use District to the Urban Land Use	)	
District, Kauai Tax Map Key 4-3-03: por 01.	)	Hearing Dates : March 10-11, 2021

INTERVENOR'S REBUTTAL EXHIBIT LIST

Intervenor LIKO MARTIN, by and through his undersigned counsel, respectfully submits rebuttal witness and exhibit lists and copies of exhibits pursuant to this Commission's orders at its meeting on January 6, 2021.

Intervenor Liko Martin's Rebuttal Exhibit List

No.	Description
I-111	Dep't of Health, Report to the 29th Legislature, 2018 Regular Session, Relating to Cesspools and Prioritization for Replacement (Dec. 2017) (excerpts) https://health.hawaii.gov/opppd/files/2017/12/Act-125-HB1244-HD1-SD3-CD1-29th-Legislature-Cesspool-Report.pdf
I-112	County of Kaua'i Wastewater Division, Preliminary Design Report Wailua Wastewater Treatment Plant Alternative Effluent Disposal System Design, Oct. 2018, filename: "20181030.Contents of CD-20181023 FINAL Wailua WWTP Alternative Effluent

	Disposal System Design PDR-HI0020257.pdf" (excerpts)
I-113	Rebuttal Testimony of Sharon Goodwin
I-114	Rebuttal Testimony of Jim Edmonds
I-115	Rebuttal Testimony of Anne Thurston, Ph.D., OBE
I-116	Rebuttal Testimony of Liko Martin
I-117	Rebuttal Testimony of JoAnn Yukimura
I-118	Rebuttal Testimony of Bridget Hammerquist
I-119	Commission on Water Resource Management, Wailua water system schematic map (n.d.)
I-120	County of Kaua'i, Department of Water, Manager's Report No. 19-42 (Jan. 25, 2019)
I-121	Email from D. Moises, Civil Engineer, Kaua'i Dep't of Water, (Apr. 10, 2019)
I-122	Comment and Request from B. Hammerquist, Friends of Māhā'ulepū and Kia'i Wai o Waialealae, to Dep't of Health, Nov. 29, 2020.
I-123	Matt Rosener, P.E., North Shore Hydrology, HoKua Place Drainage Analysis review, Feb. 15, 2021.

DATED: Honolulu, Hawai'i February 17, 2021

Bianca Isaki

LAW OFFICE OF BIANCA ISAKI
BIANCA ISAKI
LAW OFFICE OF LANCE D. COLLINS
LANCE D. COLLINS
Attorneys for Intervenor LIKO MARTIN

REPORT TO THE TWENTY-NINTH LEGISLATURE

STATE OF HAWAIʻI

2018 REGULAR SESSION

RELATING TO CESSPOOLS AND PRIORITIZATION FOR REPLACEMENT

Prepared by

THE STATE OF HAWAIʻI

DEPARTMENT OF HEALTH

ENVIROMENTAL MANAGEMENT DIVISION

In response to Act 125, 2017 Regular Session (House Bill 1244, HD1, SD2, CD1)

December 2017

EXHIBIT "I-111"

Number of Cesspools in Hawaii

There are nearly 88,000 inventoried cesspools in the State. The following table includes estimates of the number of cesspools by island, as well as the estimated total discharge represented by those cesspools. This data was generated in 2009 and 2014 through a joint effort of the University of Hawai‘i (UH), DOH and the U.S. Environmental Protection Agency (EPA). Housing data is estimated from the Census taken that same year.

Island	Housing Units	Number of Cesspools	Cesspool Effluent Discharges (million gallons per day)
Hawai‘i	82,000	49,300	27.3
Kaua‘i	29,800	13,700	9.5
Maui	65,200	12,200	7.9
O‘ahu	336,900	11,300	7.5
Moloka‘i	3,700	1,400	0.8
Total		**87,900**	**53.0**

Prioritizing Cesspools for Upgrade or Closure

Two major considerations for prioritizing cesspools for corrective action are the risk the cesspools pose and existing infrastructure such as nearby sewer mains. This report's prioritization relies upon an analysis of risk factors including: the density of cesspools in an area; soil characteristics; proximity to drinking water sources, streams, and shorelines; other groundwater inputs including agriculture and injected wastewater; and the physical characteristics of coastal waters that may compound the impacts of wastewater in bays and inlets. The DOH proposes that cesspool replacement efforts be focused by geographic area, and prioritized using the following broad categories:

- ***Priority 1: Significant Risk of Human Health Impacts, Drinking Water Impacts, or Draining to Sensitive Waters.*** Cesspools in these areas appear to contribute to documented impacts to drinking water or human health, and also appear to impact sensitive streams or coastal waters.
    - Action to address these cesspools represents a significant reduction in risk to public health, and should be achieved as soon as possible using any means available.

- ***Priority 2: Potential to Impact Drinking Water***. Cesspools in these areas are within the area of influence of drinking water sources, and have a high potential to impact those sources.
    - DOH should act before 2020 so homeowners can utilize tax credits in upgrading eligible cesspools (sited within 500' of waters).
    - Action to address these cesspools should be taken simultaneous to or following actions under Priority 1.

- ***Priority 3: Potential Impacts on Sensitive Waters.*** Cesspools in these areas cumulatively represent an impact to an area that includes sensitive State waters or coastal ecosystems (coral reefs, impaired waterways, waters with endangered species, or other vulnerabilities).
    - DOH should act before 2020 so homeowners can utilize tax credits in upgrading eligible cesspools (sited within 500' of waters).
    - Action to address these cesspools should be taken simultaneous to or following actions under Priority 2.

- ***Priority 4: Impacts Not Identified.*** Comprehensive health and environmental risks has not yet been assessed, or the risk of affecting public or environmental health currently appears low.
    - Action to address these cesspools should be taken as possible (if homeowners independently initiate action or if a supporting agency has available funds to target a community or individual home).

Initial Priority Upgrade Areas

DOH and UH have been considering health and environmental risks of cesspools for several years, with studies presented in 2009 for O'ahu and in 2014 for Kaua'i, Moloka'i, Maui, and Hawai'i. DOH and UH evaluated several factors including: proximity to sensitive receptors, groundwater transport of contaminants, the ability of the soil to mitigate contamination, and the type of onsite wastewater disposal, with cesspools evaluated as posing the highest risk. These studies, plus documented incidents of adverse health or environmental impacts, provide the initial basis for prioritizing cesspools for upgrade.

The adverse impact from cesspools is cumulative, so the relative risk and priority attached to upgrading is identified by area rather than by identifying individual cesspools. Priorities given in this report are subject to change as additional information is incorporated into DOH analyses in the future. The following 14 areas are currently priorities:

Name	Priority Level Assigned	Number of Cesspools	Effluent Discharge (million gallons per day)
Kea'au Area of Hawai'i Island	2	9,300	4.9
Hilo Bay Area of Hawai'i Island	3	8,700	5.6
Coastal Kailua/Kona Area of Hawai'i Island	3	6,500	3.9
Puako Area of Hawai'i Island	3	150	0.6
Kapoho Area of Hawai'i Island	3	220	0.12
Kapaa/Wailua Area of Kaua'i	2	2,900	2.2
Poipu/Koloa Area of Kaua'i	2	3,600	2.6
Hanalei Bay Area of Kaua'i	3	270	0.13
Upcountry Area of Maui	1	7,400	4.4
Kahalu'u Area of O'ahu	1	740	0.44

Name	Priority Level Assigned	Number of Cesspools	Effluent Discharge (million gallons per day)
Diamond Head Area of O‘ahu	3	240	0.17
Ewa Area of O‘ahu	3	1,100	0.71
Waialua Area of O‘ahu	3	1,080	0.75
Waimanalo Area of O‘ahu	3	530	0.35
Total:		42,730	

Kaua‘i Priority Upgrade Areas

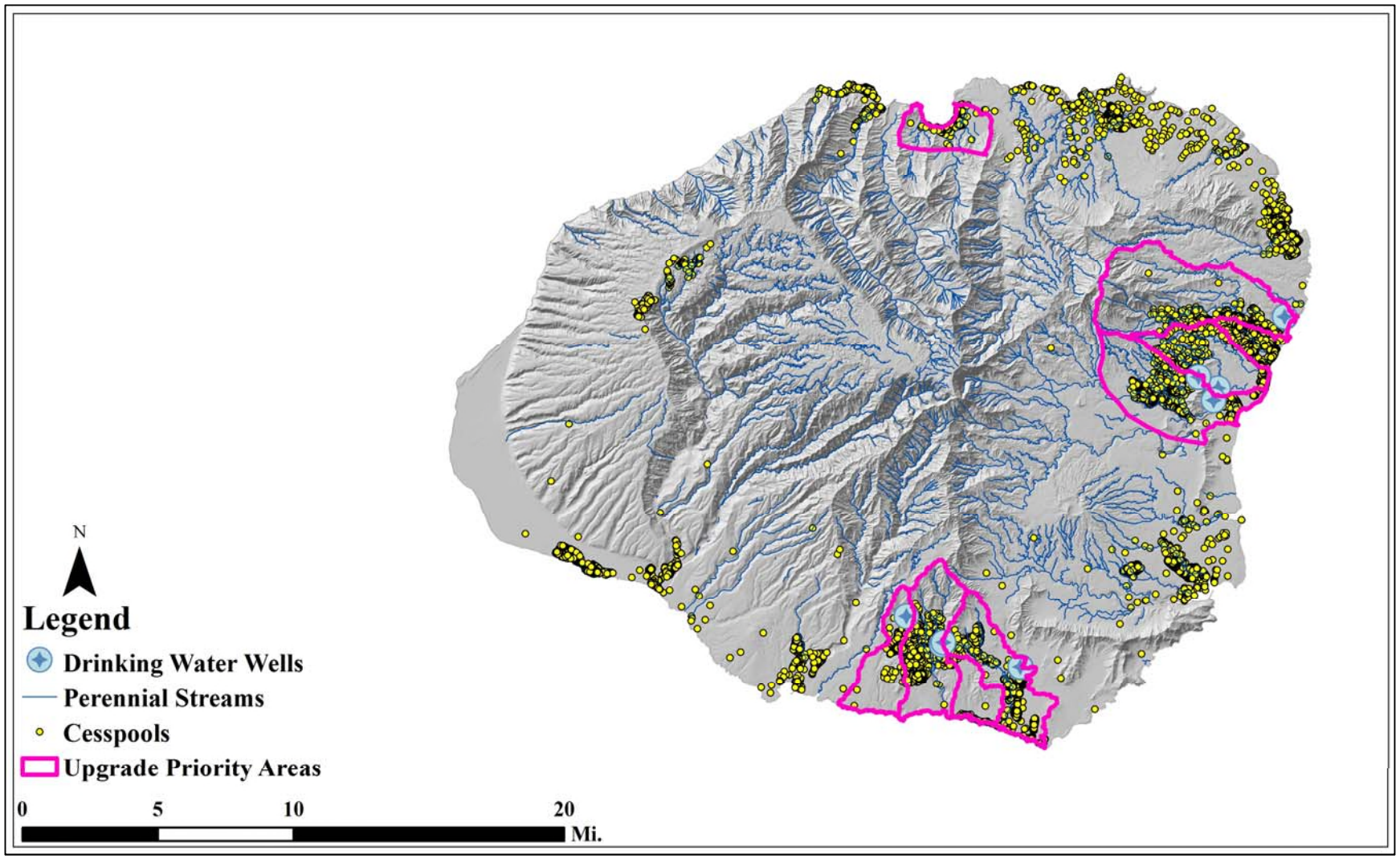
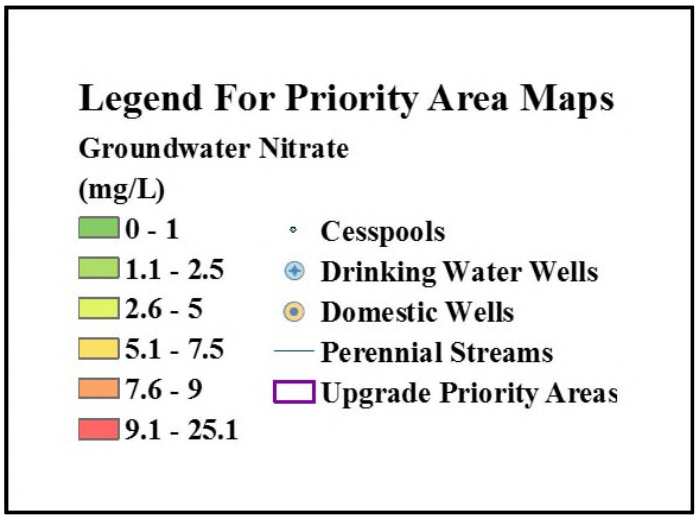


Figure 6 Kaua‘i cesspool locations, priority areas for upgrade, potentially affected drinking water sources, and perennial streams



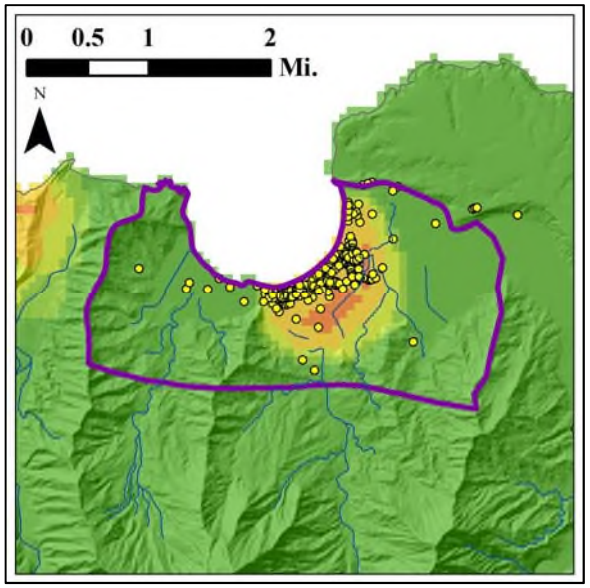


Figure 7 Hanalei priority area and cesspool nitrate

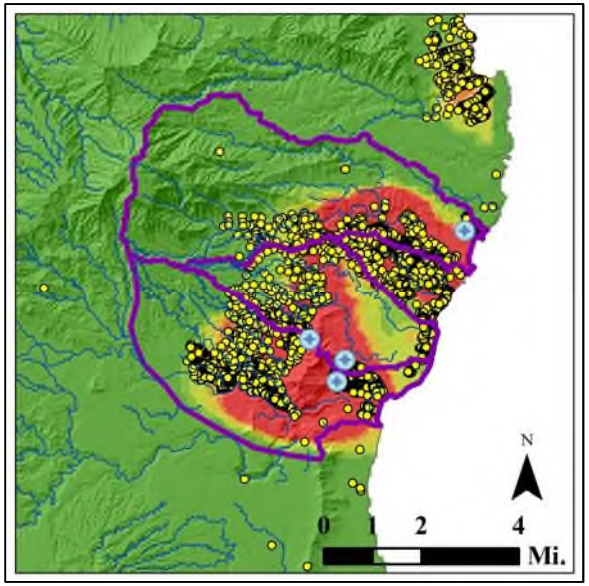


Figure 8 Kapaa/Wailua priority area and cesspool nitrate

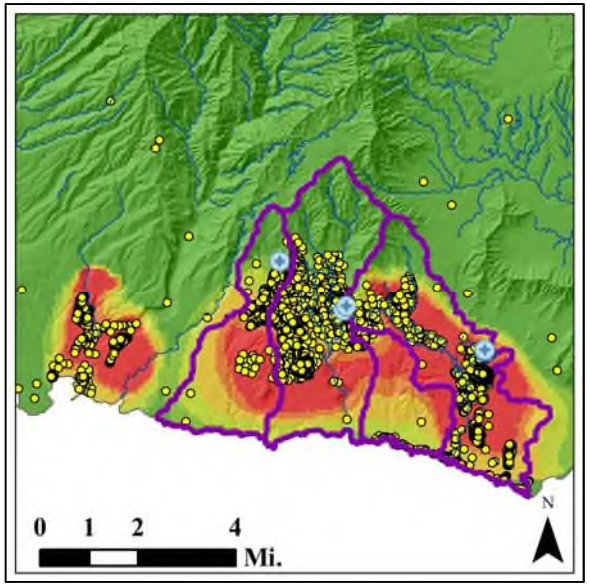


Figure 9 Poipu/Koloa priority area and cesspool nitrate

Priority 1: Significant Risk of Human Health Impacts, Drinking Water Impacts, or Draining to Sensitive Waters
There are no Priority 1 areas currently identified on Kauaʻi.

Priority 2: Potential to Impact Drinking Water

- Kapaa/Wailua Area of Kauaʻi: The 2,900 cesspools in this area are densely sited, resulting in a significant cesspool contamination load to the groundwater and the perennial streams in this area. There are nine public drinking water wells in this area that could potentially become contaminated by cesspool discharge.

- Poipu/Koloa Area of Kauaʻi: In this area, 3,600 cesspools combine with injection of treated wastewater and contribute to elevated groundwater concentrations and discharge into a sheltered bay and coral reef ecosystem with little mixing of bay and ocean waters, putting reefs at risk. There are seven public drinking water wells in this area that could potentially become contaminated by cesspool discharge.

Priority 3: Potential Impacts to Sensitive Waters

- Hanalei Bay Area of Kauaʻi: Community members in this area have expressed support for conversion of 270 existing cesspools to alternate treatment. Many of these cesspools are close to surface water bodies used for recreation and affecting coral reefs, and all discharge to ground water, resulting in a high probability for contamination.

Priority 4: Impacts Not Identified
A further 6,930 cesspools on Kauaʻi require data review and prioritization as of the date of this report.

Appendix 2: Detailed Information about Priority Upgrade Areas

Name	Priority	Area (Square Miles)	Cesspools (Quantity)	Effluent Discharge (million gallons per day)	Nitrogen Flux (kilograms per day)	Phosphorus Flux (kilograms per day)
Upcountry Area of Maui	1	72	7,400	4.4	980	280
Kahaluʻu Area of Oʻahu	1	8.4	740	0.44	110	30
Keaʻau Area of Hawaiʻi Island	2	91	9,300	4.9	970	270
Kapaa/Wailua Area of Kauaʻi	2	36	2,900	2.2	430	120
Poipu/Koloa Area of Kauaʻi	2	27	3,600	2.6	550	150
Hilo Bay Area, Hawaiʻi Island	3	31	8,700	5.6	1,300	340
Coastal Kailua/Kona Area, Hawaiʻi Island	3	79	6,500	3.9	550	150
Puako Area of, Hawaiʻi Island	3	0.6	150	0.09	17	4.9
Kapoho Area of, Hawaiʻi Island	3	1.4	220	0.12	25	6.9
Hanalei Area of Kauaʻi	3	4.3	270	0.13	24	6.8
Diamond Head Area of Oʻahu	3	2.0	240	0.17	35	10
Ewa Area of Oʻahu	3	7.6	1,100	0.71	160	45
Waialua Area of Oʻahu	3	3.3	1,080	0.79	170	49
Waimanalo Area of Oʻahu	3	16.2	530	80.2	80	22

Hawaiʻi

Keaʻau Area of Hawaiʻi Island – About 17 percent of the cesspools in the State are located in 4.3-mile wide corridor along the groundwater flow path on east slope of the Kilauea Volcano. This area of the Puna District is not served by public water so many of the residents rely on privately owned wells for their domestic water needs. Additionally, there is little to no soil cover to mitigate the impact of cesspools or slow the drainage of cesspool effluent to the water table. A UH study found the infiltration travel time from the ground surface to the groundwater could be as short as a fraction of an hour (Novak, 1995). The high density of cesspools and short leachate infiltration time pose a significant health risk in an area where residents rely on domestic wells for drinking water. A DOH investigation found that 25 percent of domestic wells sampled in this area tested positive for wastewater indicator bacteria demonstrating the potential for disease transmission.

Hilo Bay Area of Hawai‘i Island –Hilo Bay is on the windward side of Hawai‘i Island resulting in large flows of groundwater and surface water into the bay. The bay itself is sheltered from the oceanic waters by a breakwater, reducing the rate of water turnover in the bay. There are nearly 9,000 cesspools discharging to the streams and groundwater that flow into Hilo Bay. This results in a significant wastewater contaminant load to this sheltered body of water. Research by University of Hawai‘i at Hilo (Wiegner et al., 2013) shows elevated nutrient and fecal indicator bacteria concentrations in Hilo Bay and in the rivers discharging to this bay.

Coastal Kailua/Kona Area of Hawai‘i Island – The groundwater in this area discharges to the economically important reefs of West Hawaii. Groundwater modeling indicates that nitrate concentrations in the aquifer from OSDS may exceed 10 mg/L, resulting in a significant nutrient contamination load to the coral reefs of west Hawai‘i Island. Wastewater injection further increases the coastal wastewater contaminant load, likely resulting in degradation of coral reefs. A survey of reef health for the leeward coast of Hawaii (Couch et al., 2014) found steep coral declines in multiple locations. Many of the locations with coral decline correlate to high densities of OSDS or points of wastewater injection.

Puako Area of Hawai‘i Island – Puako is a small community in the north of Kailua-Kona. The residents of this community are reliant on OSDS for wastewater disposal. Community concern about the health of the reef and potential adverse impacts from wastewater disposal have prompted scientific and State Agency evaluation of coastal impact from current wastewater disposal practices. The Hawai‘i Department of Land and Natural Resources, Division of Aquatic Resources found that the Puako reefs are in dire straits, with coral cover decreasing 35 percent and overgrowth of turf and macroalgae increasing 38 percent in the last 30 years. Research done by the University of Hawaii at Hilo found elevated concentrations of nutrients along the shoreline with chemical signatures consistent with sewage. A tracer dye study verified the hydraulic connection between OSDS and shore line with travel times varying from 13 to 250 feet per day (NOAA, 2017).

Kapoho Area of Hawai‘i Island – The Kapoho community is fronted by tide pools in the Wai‘opae Marine Life Conservation District with only a limited connection to the ocean. This shielding from oceanic waves reduces the water turnover rate making the tides pools and the abundance of coral therein susceptible to degradation due to land based pollution. A study by the University of Hawaii at Hilo (Wiegner et al., 2016) estimated that sewage contributed about 27 percent of the nutrient load to the tide pools reducing the ability of the coral to resist algae overgrowth.

Kaua‘i

Kapaa/Wailua Area of Kaua‘i – This watershed has a high cesspool density resulting in a significant cesspool contamination load to the groundwater and the perennial streams in this area. Groundwater modeling indicates that concentrations significantly greater than the Maximum Contaminant Limit (MCL) may be present in the drinking water aquifer. There are nine public drinking water wells in this area that can potentially become contaminated by cesspool discharge. This is also an area where an elevated water table results in discharge of groundwater

to important streams. The Kapaa and Moikeha Streams, and the Wailua River pass through this area's receiving groundwater that is contaminated by cesspool discharge.

Poipu/Koloa Area of Kaua‘i – Similar to the Kapaa/Wailua area, groundwater modeling indicates that OSDS contamination, predominantly from cesspools, has likely elevated the groundwater nitrate concentrations above drinking water limits. This high nitrate groundwater discharges at the coast, placing the coastal reefs at risk. The waters off of Poipu are on the leeward side of the island, reducing the rate at which coastal water turnover can dilute the contamination. The coastal wastewater contamination problem is compounded by injection of wastewater, which in combination with the OSDS/cesspool input results a significantly elevated contaminant load to the marine environment. There are seven public drinking water wells in this area that can potentially become contaminated by cesspool discharge.

Hanalei Area of Kaua‘i – This area has about 270 cesspools in close proximity to the shoreline or the Hanalei River, degrading surface and coastal water quality. The nutrient load from cesspools combined with that from agriculture can provide a significant nutrient load to the Hanalei Bay. Wastewater also reduces the coral's ability to resist disease. Recent occurrence of the Black Band Coral disease in Hanalei Bay (Aeby et al., 2007 and 2012) demonstrates the need to improve the quality of surface and groundwater flowing to Hanalei Bay.

Maui

Upcountry Area of Maui– Upcountry Maui – the Makawao, Pukalani, and Kula areas on the western flank of Haleakalā have more than 7,000 cesspools and measured groundwater nitrate concentrations as high as 8.7 mg/L, which is very close to the drinking water MCL of 10 mg/L. DOH conducted an investigation to determine the extent, magnitude and source the of the nitrate contamination in the area. Nearly all of the wells sampled had nitrate concentrations higher than what could be accounted from natural and agricultural sources. Of the 12 wells sampled, 25 percent had nitrate concentrations equal to or greater than 5 mg/L, half of the MCL. The wells sampled are located at the edge or upslope of the major agricultural zones, leaving OSDS as the only logical source of the elevated groundwater nitrate. A groundwater model of OSDS nitrate in the groundwater, validated by the well sampling, indicates it is likely that the MCL for nitrate is exceeded in parts of the drinking water aquifer of east-central Maui. The conclusion of the DOH investigation is that while nitrate in the groundwater captured by the current drinking water sources is significantly less than the MCL, parts of the aquifer are degraded enough by OSDS contamination that water from a well installed in these locations would require expensive treatment to meet drinking water standards.

O‘ahu

Kahalu‘u Area of O‘ahu – High bacteria counts in the surface water and incidents of skin infections consistent with sewage contaminated surface waters have been documented following contact with waters in this area. Many of these cesspools are located near perennial streams and are subject to overflow due to the wet climate and shallow depth to groundwater. All wastewater from these cesspools flows to the Kahalu‘u Lagoon or to Kaneohe Bay as contaminated stream or groundwater discharge. The waters of the Kahalu‘u Lagoon and Kaneohe Bay are sheltered, so there is less exchange with offshore water that could dilute, and thus reduce, the severity of the cesspool contamination. The high density cesspool areas are near existing sewer

Kennedy/Jenks Consultants

707 Richards Street, Suite 528
Honolulu, HI 96813
808-218-6030
FAX: 808-488-3776

Preliminary Design Report Wailua Wastewater Treatment Plant Alternative Effluent Disposal System Design - FINAL

October 2018

Prepared for:

County of Kauaʻi
Department of Public Works
Wastewater Management Division

K/J Project No. 1767007*00

EXHIBIT "I-112"

data from 2013 through 2017 were reviewed and analyzed for loading patterns, influent flow, BOD_5, TSS, total Kjeldahl nitrogen (TKN), and ammonia-nitrogen (NH_3-N).

An evaluation of the current and future flows indicated that present average daily flow is 0.39 million gallons per day (MGD). In addition, the evaluation used planned developments in the service area to project future service population and resultant flow. The anticipated average daily flow near the end of a 20-year planning horizon is estimated to be 1.1 MGD, with the WWTP rated for 1.5 MGD[1]. The current service population was estimated using a design BOD_5 standard per capita loading rate of 0.2 pounds per person per day (lbs/person/d). It was estimated that 4,500 equivalent persons are provided service in the Wailua-Kapa'a service area. The projected future population in the service area is 9,100 equivalent persons. The associated projected growth in wastewater flow and load are shown in Table ES-2.

Table ES-2: Influent Flow, Loads, and Conditions

Design Parameter	Unit	Current Avg. Annual	Current Max Month	Design Avg. Dry Annual	Design Avg. Annual	Design Max Month	Design Max Day	Design Peak[(a)]
Flow	MGD	0.39	0.52	1.14	1.50	1.98	3.00	5.04
BOD_5	ppd	893	1,719	1,718	1,806	3,476	3,606	-
TSS	ppd	679	1,307	1,306	1,373	2,643	2,742	-
TKN	ppd	143	276	276	290	558	579	-
NH_3-N	ppd	103	199	198	209	401	416	-
Alkalinity	mg/L as $CaCO_3$				300			
pH	-				7.2			
Monthly Average Temperature								
Low	°C				24.7			
Typical	°C				27.0			
High	°C				28.9			

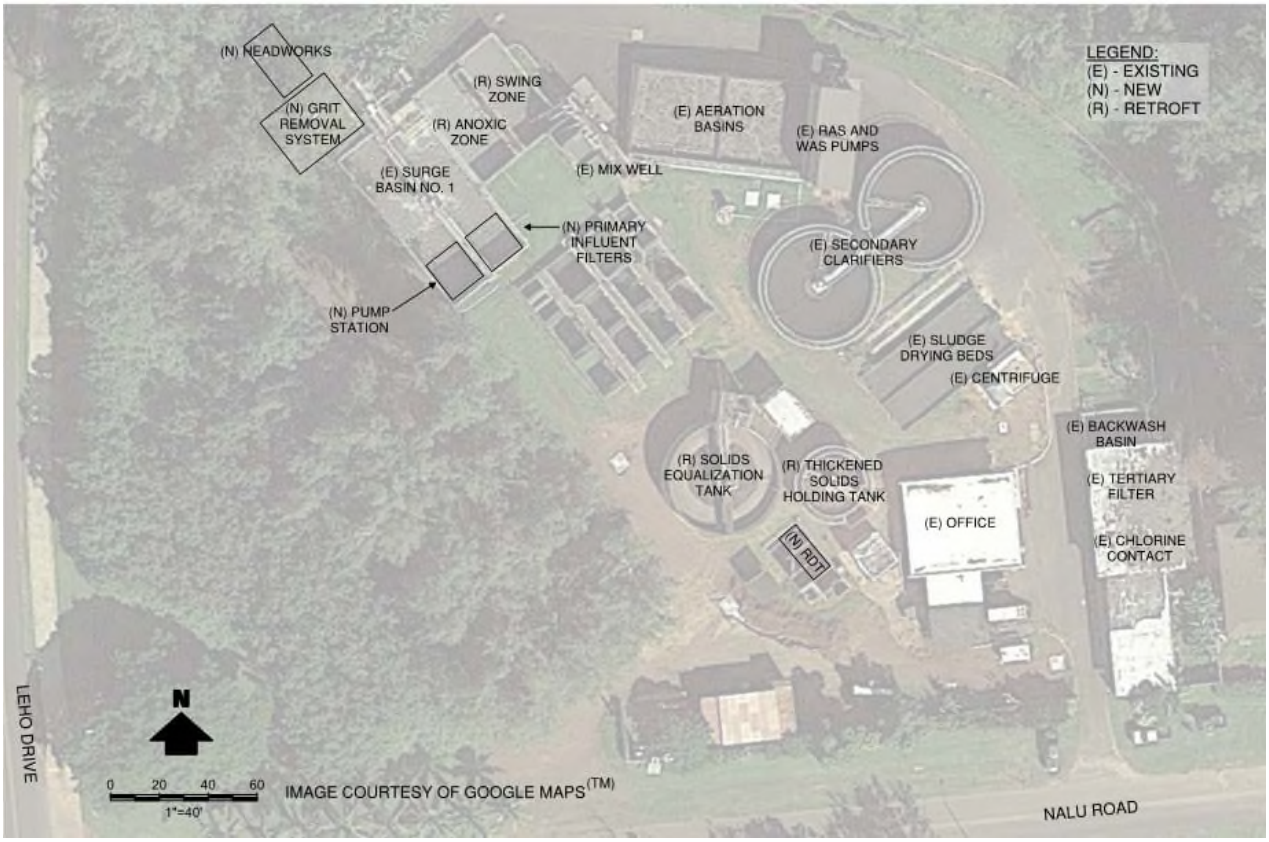
Notes:
(a) Peak flow prior to equalization.
MGD = million gallons per day
ppd = pounds per day
°C = degrees Celsius
TKN = total Kjeldahl nitrogen
$CaCO_3$ = calcium carbonate

ES.4 Proposed Project

The WWTP is rated for 1.5 MGD average daily flow[1], with a design peak flow of 5.04 MGD and a maximum day flow of 3.0 MGD. Existing WWTP processes consist of preliminary treatment and secondary treatment followed by tertiary filtration and chlorine disinfection. The treated effluent is currently either reused at the Wailua golf course for irrigation purposes or disposed of through the ocean outfall. This section briefly summarizes the proposed process improvements as described in more detail in this PDR. Figure ES-1 depicts the proposed layout of the Wailua WWTP.

[1] Rated capacity of 1.5 MGD average daily flow includes the capacity of the currently decommissioned Rapid Bloc System.

Figure ES-1: Proposed Wailua WWTP Layout



Headworks

The existing headworks poses operational challenges for the WWTP staff by passing debris under high flow conditions and hydraulics which can sometimes compromise accurate flow measurement. The existing headworks has two channels, one has a mechanical bar screen and the other has a bar rack. The WWTP does not have redundant mechanical bar screens, and as a result, if the mechanical bar screen is down for maintenance, incoming flow is directed to the manual bar rack. The manual bar rack does not function as well as the mechanical bar screen in removing debris that is coming into the Wailua WWTP. Additionally, WWTP personnel report that the Parshall flume is operating in a submerged condition which affects the ability of the WWTP to accurately measure influent flows. As a result, WMD is currently installing laser flow meters in both channels, which will be able to provide accurate measurements even in submerged conditions. Grit accumulation was also observed in the Surge Basins which indicate improper function of the aerated grit chamber.

Due to limited available space at the WWTP, the upgraded headworks and associated influent screens and grit system will be located to the west of the existing WWTP headworks. The headworks will be located on an adjacent parcel TMK: (4) 3-9-006:027 which is owned by the County through Executive Order.

Influent Screens

Influent screening will be provided through two (2) mechanical screens. The two screens will provide full redundancy for the design peak flow of 5.04 MGD. The design concept is based on 6-millimeter fine screens, such as the Huber Step Screen Vertical. As a design option, a perforated media belt filter with 6-millimeter or smaller opening screens, such as Enviro-Care FSM Filterscreens, will also be considered. The screenings will be sent to a washer and compactor before being disposed of at the Kekaha Landfill.

Grit Removal System

Grit removal design will include two stacked tray grit separation units, each sized to handle design peak flow.

Odor Control

Historically, odors have been an issue in the sewer collection system and the WWTP. There will be considerations for odor control mitigation measures during the design phase.

Surge Basin No. 1 and the Filter Feed Pump Station

Wastewater will flow from the headworks into the existing Surge Basin No. 1. Surge Basin No. 1 will serve as an equalization basin to dampen the effects of peak flows to the WWTP. A Filter Feed Pump Station located on the south side of Surge Basin No. 1 will pump wastewater to the next process unit, the Primary Filters which will be located on top of Surge Basin No. 1. The Filter Feed Pump Station will be hydraulically connected to Surge Basin No. 1 through a normally open knife gate allowing flows to pass between the two structures. Surge Basin No. 1 will be equipped with mixers to keep the solids in suspension. The need for aeration in Surge Basin No. 1 will be further considered in detailed design. The Filter Feed Pump Station will consist of two submersible pumps controlled by variable frequency drives (VFDs) and will include a shelf spare.

Primary Filters

As part of the Project, a primary filtration pilot-scale study at the Wailua WWTP successfully demonstrated that primary filtration could be used to divert a significant portion of the raw wastewater organic load out of the WWTP biological process directly into the solids handling and disposal process. The study also demonstrated that the filter effluent is biologically equalized, providing a more a stable wastewater to the biological process. The stabilized wastewater with reduced solids will improve the function of the existing aeration basins and increase the flows the WWTP can treat.

The design concept includes two primary filters to be placed aboveground (on top of Surge Basin No. 1), receiving equalized influent flow from the Filter Feed Pump Station. The effluent from the filters will flow by gravity to a proposed anoxic zone. The waste from the primary filters (backwash water, solids waste, and scum) will be pumped to a proposed Solids Equalization Tank where it will be blended with the waste activated sludge (WAS) stream for solids handling

and disposal. The proposed design concept uses cloth media filters such as the Aqua Aerobics Systems, Inc AquaDisk®.

Biological Treatment Process

Computer-based biological process modeling was performed to establish design criteria for the primary filtration and the secondary process and to document the estimated process performance and operating parameters at different loading conditions. The model was used to compare and evaluate between two alternative processes for improving nutrient removal capability. The model determined that the modification of the WWTP to include a Ludzack-Ettinger Process would meet the established water quality goals, in particular regarding nitrogen reduction. The Ludzack-Ettinger process upgrades will require:

- Addition of a primary filtration system, as discussed previously.
- Conversion of Surge Basin No. 2 and 3 to an anoxic and a swing zone, respectively, to provide for denitrification and additional aeration.
- Extension of the return activated sludge (RAS) line back to the anoxic zone to provide for returning RAS flow to the anoxic zone for denitrification and alkalinity recovery. The RAS and WAS pumps will be replaced to accommodate higher capacities and add redundancy so that it will be easier to control and change RAS and WAS flow rates.
- Expansion of blower and diffuser capacity for the aeration basins to support full nitrification for future design flow and loading conditions. The expansion of the blower and diffuser capacity in the aeration basins will be coordinated with Fukunaga and Associates which will be included in their *Wailua WWTP Process, Disinfection and Electrical Improvements Phase 2* project.
- Based on the peak day solids loading rate, each clarifier can handle approximately 1 MGD. As peak day flows approach 2 MGD, the need for a third secondary clarifier and associated return activated (RAS) pump will be considered. The addition of a third clarifier will be coordinated with Fukunaga and Associates which will be included in their *Wailua WWTP Process, Disinfection and Electrical Improvements Phase 2* project.

To support these upgrades, a submersible mixer or jet mixer will be installed in the anoxic zone to provide the required mixing. The swing zone will be operated either as an anoxic or aerobic zone. As such, a jet aspirator or jet aerator will be installed in the swing zone for mixing and/or aeration depending on the type of process needed within the swing zone.

Two submersible pumps (including one redundant pump) will be installed in the swing zone to discharge into the Mix Well.

Effluent Reuse and Disposal

As stated previously, meeting the nitrogen limitations for ocean discharge was determined to be very costly from the capital and operation and maintenance perspective with no long-term guarantee that the requirements would not become more restrictive in the future. Hence, it was

decided that it would be in the long-term best interest of the County to eliminate discharge through the ocean outfall and instead reuse the WWTP effluent as R-2 recycled water for irrigation purposes coupled with surface spreading basins as the backup disposal method.

As such, the existing ocean outfall will be abandoned in favor of the proposed effluent reuse practice of Wailua Golf Course irrigation for typical reuse with three backup surface spreading locations at the Wailua Golf Course, as well as a disposal alternative using a spreading basin at the Wailua WWTP for effluent that does not meet R-2 recycled water standards.

It should be noted that the existing tertiary filter is a key back-up component allowing the WWTP to meet R-2 recycled water standards but there is no redundant tertiary filter. Therefore, when the filter is down for maintenance the Wailua WWTP may run the risk of not producing R-2 recycled water. A redundant tertiary filter is proposed in the *Wailua WWTP Process, Disinfection and Electrical Improvements Phase 2* project being designed by Fukunaga and Associates.

Typical Effluent Reuse

The typical effluent reuse practice will be to continue conveying R-2 recycled water to the Wailua Golf Course's 2 million-gallon holding pond for golf course irrigation use. The irrigation holding pond supplies the irrigation pump station which feeds the golf course sprinkler system.

Backup Effluent Reuse

Backup effluent reuse options will be needed for periods where R-2 recycled water production exceeds golf course irrigation demand, such as during rain events.

Backup effluent reuse of R-2 recycled water will consist of three effluent disposal areas: the Wailua Golf Course Driving Range, the normally dry pond on the 16th hole, and the proposed Sandy Area Disposal Basin near the 17th hole. Manual control valves will be operated by the golf course staff to manage flows as they see fit.

The proposed construction method for the needed pipeline extensions includes horizontal directional drilling (HDD) to install an overflow pipeline from the irrigation holding pond to the sandy area and extending the R-2 recycled water force main from the irrigation holding pond to the Driving Range. A berm will be constructed on three sides of the driving range with gun sprinklers located to disperse the recycled water through spray irrigation, as shown on Figure ES-2.

Figure ES-2: Wailua Golf Course Driving Range Disposal Option

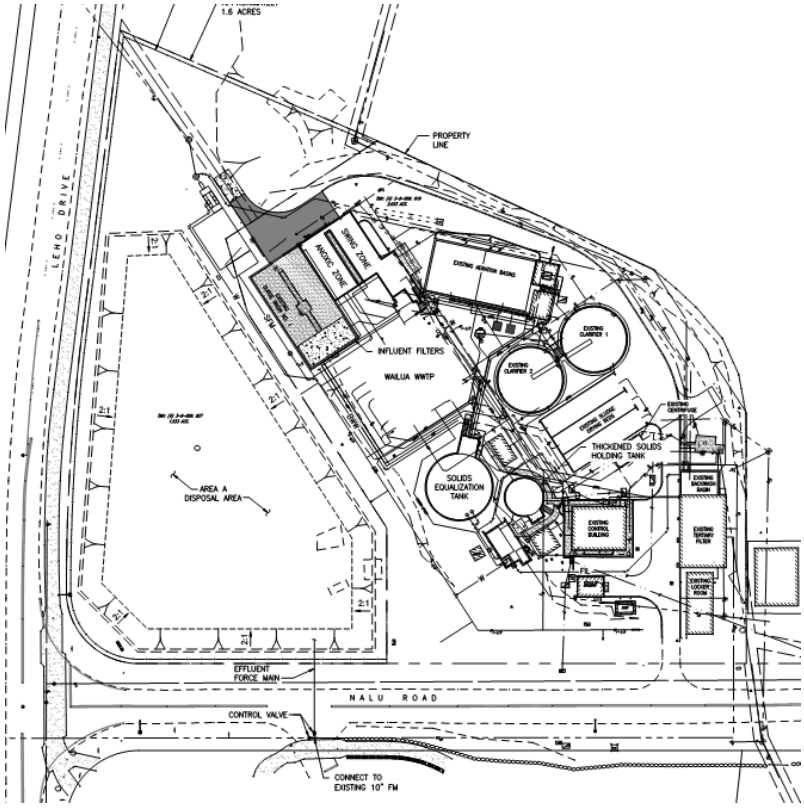
Should the golf course staff choose, valves could be operated to instead divert the flow to the Sandy Area Disposal Basin near the 17th hole. The Sandy Area Disposal Basin is a naturally depressed area that is located away from public accessibility. Because the 17th hole is regarded by the Wailua Golf Course as the signature hole, the Sandy Area Disposal Basin will be set back behind the tree line to limit visibility to the public. The normally dry pond on the 16th hole, will continue to serve as irrigation holding pond overflow. Figure ES-3 depicts 16th and 17th hole disposal options.

Figure ES-3: 16th and 17th Hole Disposal Option

Substandard Effluent Disposal

The effluent disposal system needs to account for periods where the WWTP fails to achieve R-2 recycled water quality effluent. It is not suitable to discharge substandard effluent to the Wailua Golf Course irrigation system. Instead, substandard effluent will be disposed of at Area A located in at TMK: (4) 3-9-006:027 which is owned by the County of Kaua'i by Executive Order. Area A is located just mauka of the Wailua WWTP. The site is currently overgrown with trees and low brush which will be grubbed as needed to promote storage and infiltration. The site will be graded and circumscribed by a berm and secured by fence. Figure ES-4 depicts the proposed Area A disposal option.

Figure ES-4: Area A Disposal Option



Cultural and Historical Concerns

The Wailua region has cultural and historical sites that must be considered in evaluating the proposed effluent disposal practices. The proposed effluent disposal practices were developed in collaboration with WMD and Department of Parks and Recreation leadership to take the cultural and historic resources into consideration. Cultural and historical impacts will be further mitigated through the Environmental Assessment process scheduled to begin as part of the subsequent design work.

Solids Management

The current solids management strategy at the Wailua WWTP requires the hauling of solids to the Kekaha Landfill. The tipping fees alone for landfilling the solids from Wailua WWTP cost the County approximately $42,000 per year. A solids management strategy that diverts the biological solids waste stream away from the landfill to beneficial land application would eliminate these tipping fees along with the other costs associated with the considerable transportation effort. An evaluation performed as part of this project compared the alternative strategy against the current strategy and found that by hauling the biological solids to the Līhu‘e WWTP for digestion and disposal, the County could realize considerable cost savings.

The design concept of the proposed solids management strategy consists of collecting solids from the various WWTP processes including: backwash, solids waste and scum from the primary filters and WAS and scum from the secondary clarifiers and blending these solids streams in the Solids Equalization Tank (repurposed Aerobic Digester). A new rotary drum thickener (RDT) will be installed to replace the existing dissolved air flotation thickener (DAFT) to thicken solids prior to hauling to the Līhu'e WWTP for anaerobic digestion. The solids will be pumped from the Solids Equalization Tank to the RDT, elevated on a platform, to thicken the solids. The thickened solids will be held in the Solids Holding Tank (repurposed DAFT tank) and pumped into a haul truck for transport and disposal at the Līhu'e WWTP.

Estimated Construction Cost

An engineer's estimate of probable construction cost at this conceptual planning stage for the effluent disposal and WWTP process upgrades, is estimated at $17,300,000 with a level of accuracy of -30% and +50% which is consistent with the American Association of Cost Engineers (AACE) for 10% level of design. The level of accuracy will improve with further levels of design per AACE the cost estimating guidelines. Going forward, the project will be divided into two projects, process upgrades and effluent disposal, with the breakdown in cost provided in Table ES-3. Further breakdown with more detail of the process upgrade construction costs is provided in Table ES-4.

Table ES-3: Estimated Construction Cost

	-30%	Total	+50%
Process Upgrades	$10,200,000	$14,500,000	$21,800,000
Effluent Disposal	$2,000,000	$2,800,000[(a)]	$4,200,000
Total	$12,200,000	$17,300,000	$26,000,000

Notes:
(a) Assumes 6" depth of excavation over Area A. Excavation of 2 feet, would result in an additional cost of approximately $1,000,000 for excavation, hauling, disposal, and landfill fees.

Table ES-4: Process Upgrade Construction Cost Breakdown

Component	Total[(a)]
Headworks Upgrades	$3,170,000
Primary Filter and Biological Process Upgrades	$5,330,000
Solids Process Upgrades	$1,670,000
Electrical and Instrumentation Upgrades	$1,830,000
Site Demo and Site Work	$2,500,000
Total	$14,500,000

Notes:
(a) Costs shown here represent costs including mark-ups.

A significant component of the effluent disposal costs is the depth of excavation and disposal of materials from Area A. At this stage of design, there is insufficient information (such as boring logs and infiltration rates) to accurately estimate the required depth of excavation. Presented in this cost estimate, is an assumed six-inch excavation over a 1-acre area representing Area A. Additional excavation up to two-feet would result in an additional $1,000,000 construction cost.

Specifically not included in this project and excluded from the cost estimate is the refurbishing of the existing Wailua Golf Course irrigation pump house, electrical cabinets, and structure.

Note that the estimate does not include an Owner's contingency for unforeseen costs, or costs associated with engineering, construction administration, or permitting.

Rebuttal Statement of Sharon Goodwin
February 17, 2021

Q. Please state your name and the scope of your rebuttal statement.

A. My name is Sharon Goodwin. I am responding to the County of Kaua'i Planning Department's Written Testimony, filed February 10, 2021 (County Testimony) in regard to traffic impacts and the availability of services.

Q. What are the specific statements that you seek to rebut?

A. The County described the availability of basic services, including local traffic conditions, for HoKua Place without discussing the cumulative impacts of Kulana Subdivision. County Testimony ¶24. Kulana Subdivision is planned to have 172 units. Exhibit I-38 (Kealia TIAR).

I went to Kulana Subdivision, entering via Kiliki Street off Olohena Road, and walked around the area. Kiliki Street is less than a mile from the proposed HoKua Place. The area appears developed for construction of housing units. We saw asphalt roadways, at least four fire hydrants, guardrails, speed limit and stop signs, water culverts, and there appear to be infrastructure for other utilities, electricity, water pipes, and cable TV in the small area that we walked. Together and separately, these developments will hugely impact traffic in Kapa'a.

Photo of Kulana subdivision street signs and paved roads, Sharon Goodwin, Feb. 12, 2021

Photo of "water" outlet in Kulana subdivision off Olohena highway, taken by S. Goodwin Feb. 12, 2021

EXHIBIT "I-113"
1

Photo of fire hydrant in Kulana subdivision, Sharon Goodwin, Feb. 12, 2021

Photo of guard rail Kulana subdivision, taken by S. Goodwin Feb. 12, 2021 (right)

Photo of speed limit sign in Kulana subdivision, taken by S. Goodwin Feb. 12, 2021

Photo of Kaua'i Island Utility Cooperative electrical cable infrastructure in Kulana subdivision off Olohena highway, taken by S. Goodwin Feb. 12, 2021

Photo of cable infrastructure in Kulana subdivision, S. Goodwin Feb. 12, 2021

Photo of utility valve access points in Kulana subdivision, S. Goodwin Feb. 12, 2021

Rebuttal Statement of Jim Edmonds
February 17, 2021

This is the chart in Ricky Cassiday's PowerPoint.

769 total units:
☐ 20% (154 Homes) Will Comply with County Affordable Requirements
☐ 6% (46) of Units = up to 80% of HUD Annual Median Income
☐ 8% (62) of Units = 81% - 100% of HUD AMI
☐ 6% (46) of Units = 101% - 120% of HUD AMI

☐ Additional 10% (72 Homes) will also be sold at affordable prices
☐ 3% (21) of Units = 101% - 120% of HUD AMI
☐ 7% (56) of Units = 121% - 140% of HUD AMI
☐ GAP Priced Homes will also be provided (highlight added)

1. *"GAP" housing is undefined* in this presentation and must be more specific as (the way it is presented) it is either irrelevant or misleading. This chart goes to 140% of AMI. That is a major issue since the county recently amended its housing ordinance to limit workforce housing to 120% because their analysis indicated that anything above that limit approaches market rate housing. If the developer states that it is providing an added benefit of GAP housing, there is no indication that it is in this affordability chart considering that the chart goes up to 140% AMI.

Just for a frame of reference, a 3 bedroom house at 140% AMI sells for $737,850. At 120% AMI a 3 bedroom home sells for $624,850. According to the chart below, in Mr. Cassiday's presentation, the proposed starting selling price for single family market rate units are $750,000 for the large lots and $650,000 for the small lots. If the developer chooses to call the low-end, proposed market rate homes "GAP housing", that chart should specify the percentage of AMI and the LUC should include such representations in the conditions of approval.

LUC CONDITIONS OF APPROVAL

- What enforcement powers does the LUC have once it approves the petitioner's request for a change in land use designation from rural to urban? If there are none, this will likely be an exercise in futility.
- Can the LUC require that the affordability requirements be added as Conditions of Approval? And *are such conditions enforceable through the entitlement process at the County level?*

This is a critical question because, if the project is zoned R-10 or above, there is *no affordability requirement* at the County level. Based upon their recently passed Bill 2774 . . . none. With no "teeth" to enforce affordability, the developer could abandon any representations of affordability made at the LUC level when seeking County approval for the project.

EXHIBIT "I-114"

The affordability chart provided by the consultant (below) comports with the *minimum prior requirements at the county level which were recently amended to have no affordability for projects in zone R-10 or above. If the developer follows the minimum requirements under the County Code currently, zero affordability is required.*

HOKUA PRODUCT SALES PRICE PROJECTION

Housing Produced	Total Units	Retail Price Per Unit	Home Site Only Prices
A House Lot Package, Large Lots (10,000 sf)	36	$750,000-$1,250,000	$225,000-$250,000
A House Lot Package, Medium Lots (7,500 sf)	50	$650,000-$850,000	$200,000-$235,000
Multi-Family Dwellings (4 Plex, 8 DU/Ac)	452	$350,000-$425,000	
Affordable Housing Dwellings (12 DU/Ac)	231	$225,000-$325,000	

CAN THEY BUILD HOMES THIS INEXPENSIVELY?

Conditionally the answer is yes, depending on cost of the land and horizontal improvements. If the cost of land and horizontal infrastructure is approximately $100,000, it is theoretically possible. Habitat for Humanity (HFH) builds homes at 80% AMI and these homes are priced in the same range as this proposed project. However, HFH very effectively uses a huge amount volunteer labor on each house, whereas the developer is not, which raises his costs and convinces me that he cannot match those prices.

The developer could sell the lots to HFH, PAL or other affordable housing developers, but the land cost must still be around $100k per unit, including infrast for the units to sell at 80% AMI.

Even with higher land costs, the developer could seek public subsidy, partnerships with non-profit developers, or use the net returns from the sales of market rate homes to subsidize affordable units.

DOES THIS CHANGE MY ANALYSIS ?

In terms of our crucial discussion of the loss of agricultural land, it does not. But in summary:

1. The developer states that, as an added benefit, it is providing GAP housing. *This needs to be defined more clearly*.

2. Note that the construction of affordable units is spaced out over 5 years. We are facing a crisis which is worsening daily. I strongly suggest that the developer be required *to build the affordable units first or over a period of much less than 5 years (the need is NOW).*

3. If approved, affordability restrictions *must be included in the conditions of approval and recorded against the title of the land so that the County affordability regulations will NOT apply*.

4. Affordable homes sold on Kaua'i will do almost no good because they will be bought by recent arrivals unless the buyers are selected based on "Priorities and Preferences" which are based upon the length of time they have lived on the Island and the proximity of the home to their place of work.

PAL ~ KAUA'I

PERMANENTLY AFFORDABLE *LIVING*

IT'S HOUSING . . . AND SO MUCH MORE !

A 501(c)(3) NON PROFIT CORPORATION

PAL-KAUAI.ORG (808) 738-6796

Kauai County AMI Limits for Workforce Housing, Monthly Payment at 30% DTI, Mortgage Amount, & Full Time Hourly Wage Necessary

Household Size:	1	30% DTI	Mortgage	Hourly	2	30% DTI	Mortgage	Hourly
HUD Income Limits*:								
30% Limits (Extremely Low)	$20,450	$511	$118,159	$10	$23,350	$584	$135,039	$11
50% Limits (Very Low)	$34,000	$850	$196,546	$16	$38,850	$971	$224,525	$19
60% Limits	$40,850	$1,021	$235,856	$20	$46,620	$1,166	$269,616	$22
80% Limits (Low)	$54,400	$1,360	$314,474	$26	$62,200	$1,555	$359,565	$30
Workforce Housing Income Limits*:								
100% Limits	$71,300	$1,783	$412,285	$34	$81,450	$2,036	$470,787	$39
120% Limits	$85,550	$2,139	$494,604	$41	$97,800	$2,445	$565,361	$47
140% Limits	$99,800	$2,495	$567,922	$48	$114,050	$2,851	$659,241	$55
Gap Group Income Limits*:								
160% Limits	$114,050	$2,851	$659,241	$55	$130,300	$3,258	$753,352	$63
180% Limits	$128,300	$3,208	$741,790	$62	$146,600	$3,665	$847,463	$70

Kauai County AMI Limits for Workforce Housing, Monthly Payment at 30% DTI, Mortgage Amount, & Full Time Hourly Wage Necessary-2

Household Size:	3	30% DTI	Mortgage	Hourly	4	30% DTI	Mortgage	Hourly
HUD Income Limits*:								
30% Limits (Extremely Low)	$26,250	$656	$151,687	$13	$30,130	$753	$174,117	$14
50% Limits (Very Low)	$43,700	$1,093	$252,736	$21	$48,550	$1,214	$280,715	$23
60% Limits	$52,450	$1,311	$303,144	$25	$58,300	$1,458	$337,135	$28
80% Limits (Low)	$69,950	$1,749	$404,424	$34	$77,700	$1,943	$449,282	$37
Workforce Housing Income Limits*:								
100% Limits	$91,650	$2,291	$529,751	$44	$101,800	$2,545	$588,484	$49
120% Limits	$110,000	$2,750	$635,886	$53	$122,200	$3,055	$706,412	$59
140% Limits	$128,300	$3,208	$741,790	$62	$142,550	$3,564	$824,109	$69
Gap Group Income Limits*:								
160% Limits	$146,600	$3,665	$847,463	$70	$162,900	$4,073	$941,806	$78
180% Limits	$164,950	$4,124	$953,599	$79	$183,250	$4,581	$1,059,271	$88

Kauai County AMI Limits for Workforce Housing, Monthly Payment at 30% DTI, Mortgage Amount, & Full Time Hourly Wage Necessary-3

Household Size:	5	30% DTI	Mortgage	Hourly	6	30% DTI	Hourly	Mortgage
HUD Income Limits*:								
30% Limits (Extremely Low)	$35,280	$882	$203,946	$17	$40,430	$1,011	$19	$233,775
50% Limits (Very Low)	$52,450	$1,311	$303,144	$25	$56,350	$1,409	$27	$325,805
60% Limits	$63,000	$1,575	$364,189	$30	$67,650	$1,691	$33	$391,012
80% Limits (Low)	$83,950	$2,099	$485,355	$40	$90,150	$2,254	$43	$521,196
Workforce Housing Income Limits*:								
100% Limits	$109,950	$2,749	$635,655	$53	$118,100	$2,953	$57	$682,826
120% Limits	$132,000	$3,300	$693,694	$63	$141,800	$3,545	$68	$819,715
140% Limits	$154,000	$3,850	$890,241	$74	$165,400	$4,135	$80	$956,142
Gap Group Income Limits*:								
160% Limits	$175,950	$4,399	$1,017,187	$85	$188,950	$4,724	$91	$1,092,338
180% Limits	$197,900	$4,948	$1,144,133	$95	$212,550	$5,314	$102	$1,228,764

Kauai County AMI Limits for Workforce Housing, Monthly Payment at 30% DTI, Mortgage Amount, & Full Time Hourly Wage Necessary-4

Household Size:	7	30% DTI	Hourly	Mortgage	8	30% DTI	Hourly	Mortgage
HUD Income Limits*:								
30% Limits (Extremely Low)	$45,580	$1,140	$22	$263,604	$50,730	$1,268	$24	$293,201
50% Limits (Very Low)	$60,250	$1,506	$29	$348,234	$64,100	$1,603	$31	$370,664
60% Limits	$72,300	$1,808	$35	$418,066	$76,900	$1,923	$37	$444,658
80% Limits (Low)	$96,350	$2,409	$46	$557,036	$102,600	$2,565	$49	$593,109
Workforce Housing Income Limits*:								
100% Limits	$126,250	$3,156	$61	$729,766	$134,400	$3,360	$65	$776,938
120% Limits	$151,550	$3,789	$73	$876,136	$161,350	$4,034	$78	$932,788
140% Limits	$176,800	$4,420	$85		$188,200	$4,705	$90	$1,087,944
Gap Group Income Limits*:								
160% Limits	$202,000	$5,050	$97	$1,167,719	$215,050	$5,376	$103	$1,243,101
180% Limits	$227,250	$5,681	$109	$1,313,626	$241,900	$6,048	$116	$1,398,488

Rebuttal Statement of Anne Thurston, Ph.D., OBE
February 17, 2021

Q. Please state your name and the scope of your rebuttal statement.

A. My name is Anne Thurston. I am responding to the County of Kauaʻi Writtten Testimony in Support of Petition, filed February 10, 2021 (County Testimony) in regard to the Wailua Wastewater Treatment Plant (WWTP) to various ongoing developments in East Kauaʻi.

I am also responding to Petitioner HG Kauaʻi Joint Venture, LLC's Exhibit No. 11, the presentation of Jacob Bracken in regard to commitments to construct a sewage collection system and transmission line to the Wailua WWTP.

Q. What are the specific statements that you seek to rebut?

A. The County stated that its Wastewater Division is working on two capital improvement projects (CIPs) that will increase the capacity of the Wailua WWTP to the original average daily flow of 1.5 MGD and that a "possible option would be for the developer to invest in the projects needed to increase the capacity of a County system. An agreement could be made with the County that would include reserving a specific amount of capacity as part of the investment." County Testimony ¶24.

According to the County of Kauaʻi Wastewater Division's Preliminary Design Report Wailua Wastewater Treatment Plant Alternative Effluent Disposal System Design, dated October 2018 (Exh. I-112), proposed upgrades to the Wailua WWTP for processing upgrades and effluent disposal would cost between $12.2 million and $26 million, with a predicted total of $17.3 million. Exh. I-112 at ES-XI. This cost estimate does not include refurbishing the Wailua Golf Course to receive and disperse treated wastewater and any unforeseen costs. *Id.* at ES-XII.

According the Wastewater Division's Preliminary Design Report, as peak day flows approach 2 MGD, the need for a third secondary clarifier and associated return activated pump will need to be considered. Exh. I-112 at ES-VI. Piecemeal solutions seem very risky, which is why the Alternative Effluent Disposal System Design was developed.

Also, the current solids management strategy at the Wailua WWTP requires the hauling of solids to the Kekaha landfill which is near to reaching capacity. Exh. I-112 at ES-X. The tipping fees alone for landfilling the solids from the Wailua WWTP are approximately $42,000 per year so long as it has capacity. Building a strategy for increasing capacity at the WWTP requires looking at this factor.

The County also stated that the Petition Area is "closer to a 5-minute walk from Kapaʻa Town, which is designated as a Neighborhood Center." County Testimony ¶12. This statement would not be correct. It may be a 5-minute walk for students leaving from Kapaʻa Middle School to reach Kapaʻa town, but it would not be a 5-minute walk for any of the HoKua Place residents. The fact that the proposed petition area is a hillside property will also lengthen the travel time when walking uphill.

EXHIBIT "I-115"

Rebuttal Statement of Liko Martin
February 17, 2021

Q. Please state your name and the scope of your rebuttal statement.

A. My name is Liko Martin. I am responding to Petitioner HG Kauaʻi Joint Venture's (Petitioner) Exhibit 15, Nancy McMahon Presentation, filed February 10, 2021 titled "Archaeology and Native Hawaiian Practices."

I am also responding to the Petitioner's Exhibit 22, a memorandum from Tom Nance to Jake Bracken, concerning "Assessment of an Onsite Well to Provide the Water Supply for the Hokua Place Project in Kapaa, Kauai."

Q. What are the specific statements that you seek to rebut?

A. Petitioner's exhibit 15 states, "No Native Hawaiian customary or traditional practices on Project site" and "Development of HoKua Place would have no adverse impact on historic sites, burial sites, or Native Hawaiian cultural practices."

It is not precisely accurate that the project site area is not a place for gathering practices. I have gathered moa, uhaloa, and white koale - a morning glory medicinal plant, which is found in the petition area for HoKua Place although that is not my primary gathering spot.

More importantly, this Commission's decision to forward the HoKua Place development would have impacts on historic sites, including the loʻi nearby and on the parcel, and the practices I engage as a kanaka maoli. McMahon's approach to kanaka maoli traditional and customary practices suffers from myopia. Tradition and custom affect more levels of engagement with the land than gathering particular items. Tradition and custom are collective enterprises that concerns how we live and in what configuration with the land and each other. What makes me identify as a Hawaiian national and a kanaka maoli traditional and customary practitioner is not only dependent on my use of native plants and species. It includes aloha ʻāina and caring about the health of our lands and waters.

I am concerned about the use of groundwater aquifer for drinking water. The well test results show many kinds of "analyte" chemicals in the water produced by the well, including nitrates, which I understand are associated with cesspool sewage. Petitioner's Exh. 22 at PDF 11, 13. Kapaʻa and Wailua are a Department of Health "priority area" for cesspools and nitrate. Exhibit I-111 at 12.

EXHIBIT "I-116"

Rebuttal Statement of JoAnn Yukimura, Esq.
February 17, 2021

Q. Please state your name and the scope of your rebuttal statement.

A. My name is JoAnn Yukimura. I am responding to Petitioner HG Kauaʻi Joint Venture, LLC's Exhibit No. 31, a presentation by Ricky Cassiday, filed February 10, 2021 (Cassiday presentation) in regard to the proposed HoKua Place development and how it will provide affordable housing.

Q. What are the specific statements that you seek to rebut?

A. The Cassiday presentation attempts to demonstrate that the HoKua Place development will fulfill its *raison d'etre* or primary purpose (see Pet. Amended Petition, paragraph 19) "to serve Kauai's growing population and to alleviate the unmet need for housing." *See* Cassiday Presentation Slide No. 6, "Project Affordable Supply vs. Potential Demand, by AMI."

Given that the burden of proof is on Petitioner to show how alleviating the unmet need for housing for those who are counted as the "population" of Kauaʻi will be practicably accomplished, the presentation raises more questions than answers.

In regard to proposed HoKua Place affordable housing, the Cassiday presentation fails to provide a practical plan for ensuring that Kauaʻi residents will be able to secure long term affordable housing at HoKua Place, whether through for-sale or rental housing.

If the affordable housing will be for-sale units, Cassiday does not elaborate as to whether there will be a 50-year buyback clause, the entity to which the interest would revert or other consequence if the property is sold before 50 years, any income restrictions on buyers of resold units, or the condominium association fees to be associated with housing units.

If the affordable units are to be rentals, which we have pointed out are much more practical for households ≤ 100% AMI, there is no detail as to how the units are to be managed and owned and for how long they would be affordable.

The Cassiday presentation states that "GAP Priced Homes will also be provided." Cassiday Presentation, Slide 5. This statement fails to define "gap group" by AMI, leaves open the number of units available to gap group households, the pricing of those units, and whether those will be rentals or for-sale units. With respect to Gap Group housing, the most important thing will be to ensure that the local families who want a primary home in which to live and work in the Kapaʻa area are able to buy these homes rather than investors and other third-parties just trying to make money by getting in at the ground level. In my original testimony, I suggested various conditions by which to assure that Petitioner's stated housing goals would be met.

Cassiday reports an affordable housing price range starting at $225,000, which excludes all families lower than 80% AMI. But even for families at 80% AMI, purchase of units will be difficult because they not likely to have a downpayment or be able to qualify for a loan. If units are for-sale condos, the association and maintenance fees would likely render the units unaffordable. It's noteworthy that the recently completed 2019 Hawaii Housing Planning Study shows that 57% of Kauaʻi's housing need is ≤ 80% AMI (see chart below).

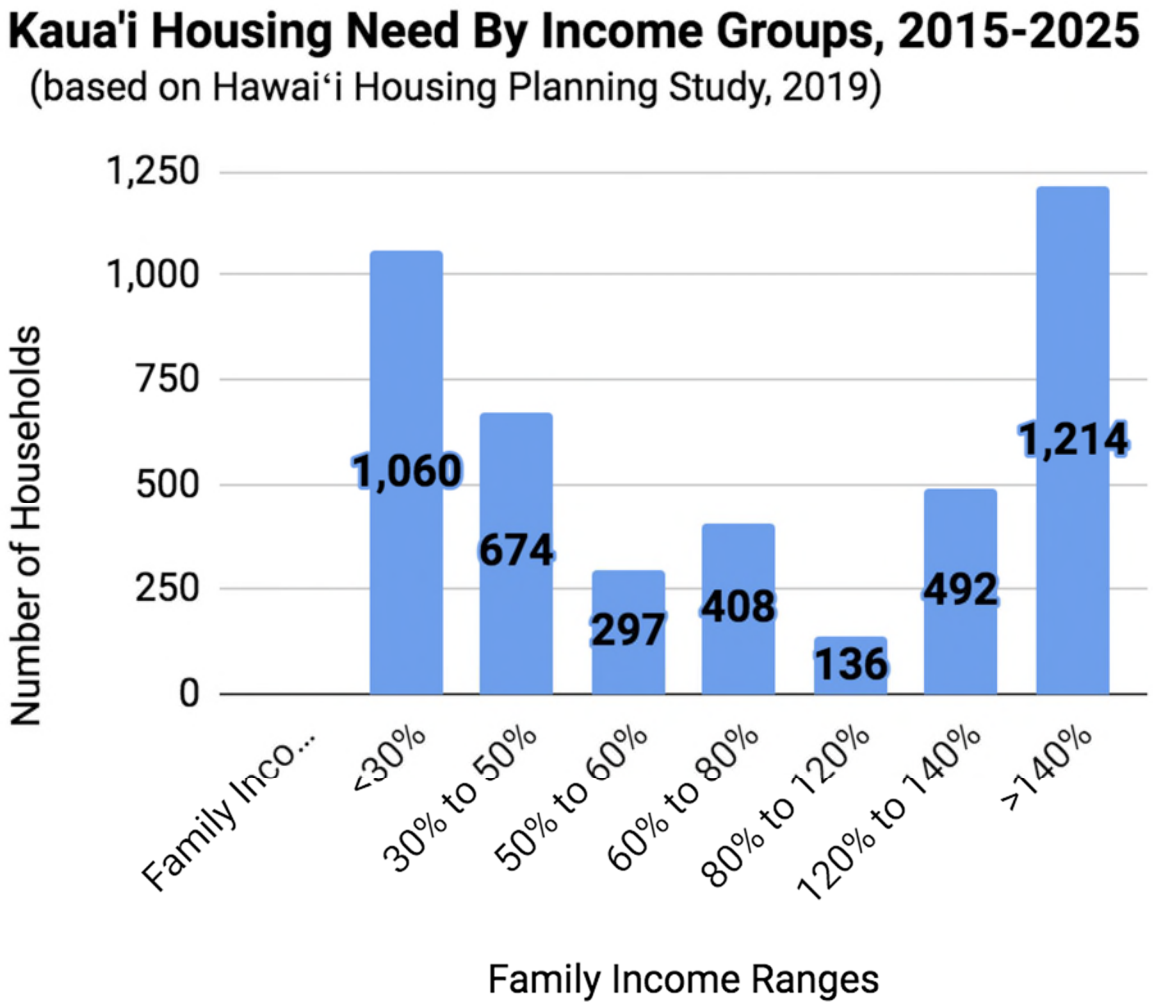
The Cassiday presentation does not address the great difficulty that families in the ≤ 80% - 100% AMI would have in qualifying for a loan to buy a for-sale unit. Under an unrealistic plan, it is unlikely that 46 families with incomes up to 80% AMI will secure housing in Hokua Place on a long term basis.

EXHIBIT "I-117"

More specific information is needed to assure that the HoKua Place homes will go to new homeowner and are not subject to speculation ofr"flipping" that drives the price of housing beyond the reach of local residents.

The Cassiday Presentation also indicates construction costs for the HoKua project are expected to be $301,336,400. Yet, lot sales projections appear to fall between $229.4 million, assuming the lower range of price projections, and $314.18 million, assuming all lots are sold at the highest price of the ranges provided. The "construction costs" figure does not appear to account for salaries of the many involved, legal fees, dedications to county to provide infrastructure, and other expenses associated with HoKua Place. These slim margins counsel exacting scrutiny on the project to better determine whether and how it will help meet Kauaʻi's affordable housing needs.

Whatever the projected economic benefits may accrue from the construction and ancillary activities of HoKua Place, the community will not benefit in the long run if the main reason for the project, as stated by Petitioner--alleviating the unmet need for housing for local residents--is not met, while the burden on the community in terms of the increased difficulty and cost of traffic congestion, water pollution and the usurpation of water and sewage is incresed to the benefit of offisland and investor interests.



Rebuttal Statement of Bridget Hammerquist
February 17, 2021

Q. Please state your name and the scope of your rebuttal statement.

A. My name is Bridget Hammerquist. I am responding to Petitioner HG Kauaʻi Joint Venture, LLC's (Petitioner) Exhibit No. 25 (HoKua Place water analysis), and the County of Kauaʻi Planning Department's Written Testimony, filed February 10, 2021 (County Testimony) in regard to the availability of water services for the proposed HoKua Project.

Q. What are the specific statements that you seek to rebut?

A. Petitioner represents that it will install a new water system either through an agreement with the County of Kauaʻi Department of Water (KDOW) or a private water system. Petitioner Exh. 25 at 10. Petitioner describes a County water storage project that "may be available" for the residential development of HoKua Place Phase 2. *Id.* Petitioner further describes plans to submit a water master plan to be approved by the County Water Resources and Planning Division. *Id.* Petitioner's water analysis is silent on water storage solutions for the project in the event that the County does not agree to provide storage for the project. *Id.* The County is entirely silent on the availability of county water systems for the proposed HoKua Project. County Testimony ¶24.

The Petitioner's potential use of County water system raises significant concerns. As described by Intervenor's witnesses, wells drawing from groundwater in the Līhuʻe basin may fail to be productive because of the unique geologic qualities in this area. Exh. I-51 (Dr. Asquith witness statement at 3-4); Exh. I-107 (Matt Rosener witness statement, at 2). Once the well fails, if it is ever even productive, the HoKua Development will be dependent on County water system sources.

HoKua Place lies within the County's Wailua-Kapaʻa water system, which uses resources of Wailua streams. Exh. I-119 (CWRM schematic map of the Wailua water system). These streams are diverted and sent to Grove Farm's Waiahi Surface Water Treatment Plant, where they are treated and then distributed through the County's water lines. Each component of the County's Wailua-Kapaʻa system is beleaguered. Grove Farm, the water purveyors, lacks a lease or permit to divert water and have not been subject to environmental review through preparation of environmental review documents as required by state law.

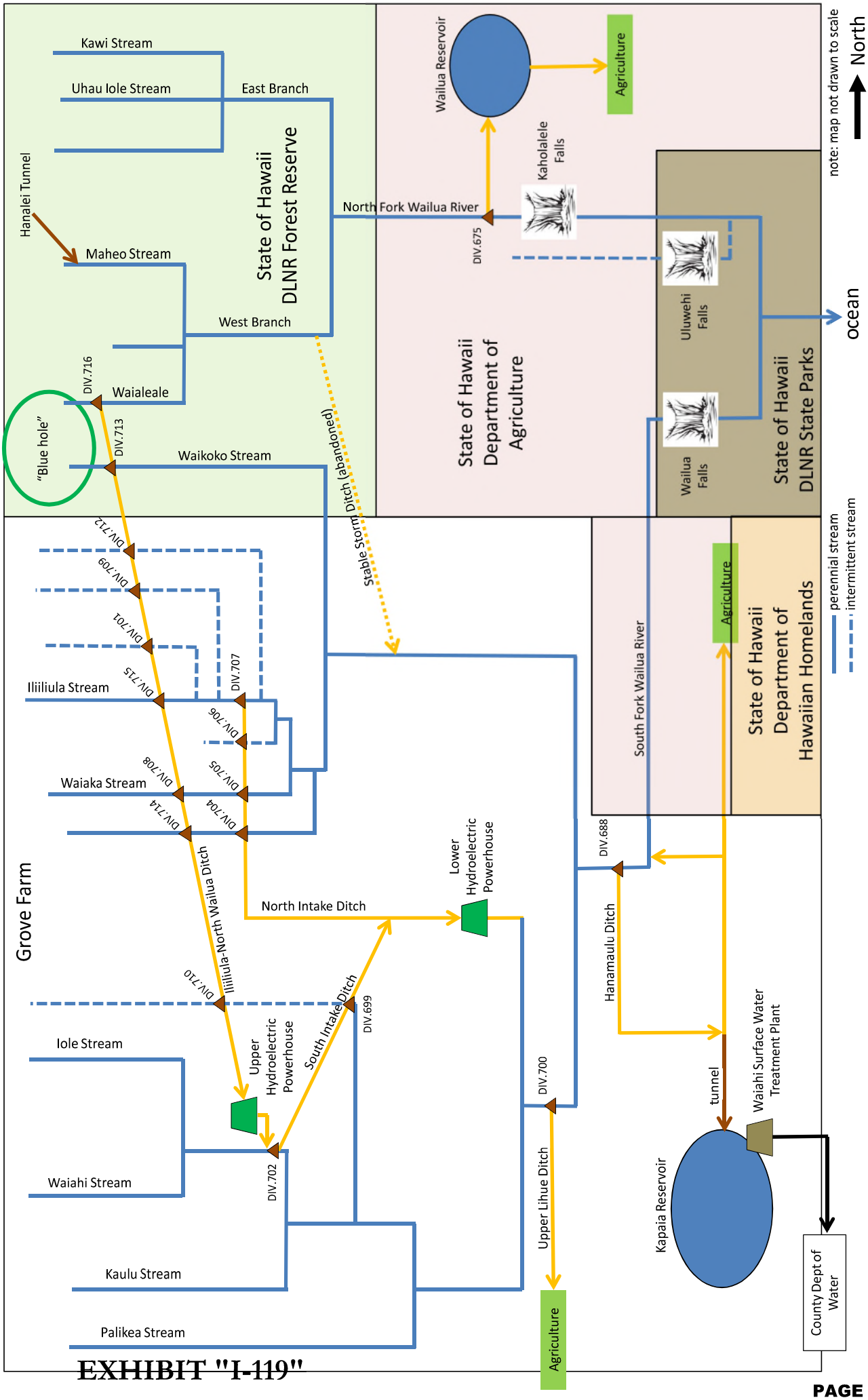
In April 2019, KDOW engineer Dustin Moises provided comments on Grove Farm's Waiahi water treatment plant and advised that it began its surface water treatment operation without proper permits or environmental review, making the following relevant points (Exh. I-121, Moises email):

- Water in the reservoir comes from State land Streams
- Wai`ale`ale and Waikoko streams are both in a conservation district
- Grove Farm failed to apply to use diverted stream water resources as required by HRS §§171-58 and 343, yet has been selling the water to the County.
- No environmental review has occurred despite County funds and State land involved in the Waiahi water treatment plant.

The County has been trying to expand the capacity of their Wailua-Kapaʻa system but without undergoing proper environmental review. The Friends of Māhāʻulepū and Kiaʻi Wai o Waiʻaleʻale filed complaints against the County based on their noncompliance with environmental review requirements for expanding the water systems that distribute Waiahi water treatment plant

water. The Department of Health had terminated the Waiahi water treatment plant NPDES permit on April 30, 2016, yet they have continued to operate without one. We also provided comments to the Department of Health on a proposed NPDES permit for the Waiahi surface water treatment plant in light of their frequent violations and requested a contested case on these permit proceedings. Exh. I-122 (NPDES comment to DOH, Nov. 29, 2020). In those comments, we noted the permit application was insufficient and failed to address the disposal of aluminum-laden sludge solids, amongst other failings.

The Petitioner's amended district boundary amendment application, environmental impact statement documents, and exhibits provided on February 10, 2021 continue to provide for a scenario under which the HoKua Place project will connect to the KDOW water system. The KDOW system lacks capacity in the foreseeable future (Exh. I-26, 2018 Kaua'i General Plan at 141) and is beleaguered with myriad environmental, cultural resource, and compliance issues. Any potential option under which HoKua Place connects to the KDOW water system should be met with a negative finding as to the availability of water services and the Petitioner required to establish whether and how, financially and physically, it will provide storage and other infrastructure for a private water system.


Kawi Stream
Uhau Iole Stream
East Branch
Hanalei Tunnel
Maheo Stream
West Branch
State of Hawaii
DLNR Forest Reserve
North Fork Wailua River
Wailua Reservoir
Agriculture
Kaholalele Falls
DIV.675
Uluwehi Falls
Wailua Falls
State of Hawaii
Department of
Agriculture
State of Hawaii
DLNR State Parks
ocean
note: map not drawn to scale
North
DIV.716
Waialeale
DIV.713
"Blue hole"
Waikoko Stream
Stable Storm Ditch (abandoned)
DIV.712
DIV.709
DIV.701
DIV.715
DIV.707
Iliiliula Stream
DIV.706
DIV.705
DIV.708
Waiaka Stream
DIV.704
DIV.714
Iliiliula-North Wailua Ditch
South Fork Wailua River
Agriculture
State of Hawaii
Department of
Hawaiian Homelands
perennial stream
intermittent stream
Grove Farm
Lower
Hydroelectric
Powerhouse
North Intake Ditch
DIV.688
Hanamaulu Ditch
DIV.710
South Intake Ditch
DIV.699
Upper
Hydroelectric
Powerhouse
Iole Stream
DIV.700
tunnel
Waiahi Surface Water
Treatment Plant
Waiahi Stream
DIV.702
Upper Lihue Ditch
Kapaia Reservoir
Kaulu Stream
Agriculture
County Dept of
Water
Palikea Stream

MANAGER'S REPORT No. 19-42

January 25, 2019

Re: Discussion and Receipt of Update regarding Status of Water Treatment and Delivery Agreement with Grove Farm Properties, Inc.

FUNDING: N/A

BACKGROUND:
The Department entered into the attached Water Treatment and Delivery Agreement (henceforth "Agreement") with Grove Farm Properties, Inc. on February 19, 2004. As stated on page 4 of the Agreement, "…this Agreement, unless earlier terminated in accordance with Section 17, shall terminate fifteen (15) years after the effective date or upon dedication of the Facility to BWS, whichever occurs first, except to the extent specifically provided to the contrary in this Agreement. If the Facility has not been dedicated to BWS within the initial fifteen (15) year term of this Agreement, the term of this Agreement shall be automatically extended for successive two (2) year periods (the "**Renewal Term(s)**") unless and until (i) the Facility is dedicated to BWS, (ii) either part delivers to the other written notice of such party's election to terminate this Agreement at least ninety (90) days prior to the conclusion of the initial term or any successive two (2) year term (the "**Termination Notice**") or (iii) the parties mutually agree to terminate this Agreement. In the event a timely Termination Notice is given, this Agreement shall terminate at the conclusion of the initial (15) year term or Renewal Term during which the Termination Notice is given.

The Kapaia Surface Water Treatment Plant (SWTP) treats and delivers an average of 2.4 Million Gallons of water per day (MGD) and provides a consistent supply of water for the Department's Puhi-Līhu'e-Hanamā'ulu system, which is interconnected with the Wailua-Kapa'a system. Per the 3rd Amendment to the Agreement executed on December 23, 2016, the Department currently pays $1.90 per 1,000 gallons of Delivered Water per the Agreement, for an approximate total of $140,000 per month or $1.7M per year. By comparison, the Department's current water rates for a 5/8-inch meter are $3.80 for the first tier (1,000 gallons), $4.85 per thousand gallons for the next (1,000-7,000 gallons), and so on. The Department has not recommended action to the Board because Sec. 2b of the Agreement requires the submission of documentation which Grove Farm has not yet provided.

Section 2.b. Control of Surface Water System of the Agreement is as follows:

b. Control of Surface Water System Grove Farm, its stockholder ALPS LLC, a Delaware limited liability company, Visionary and LLCO are each independent, but related, companies with common ownership. One or more of these companies (1) own or control the Hanamā'ulu Ditch System, which feeds Kapaia Reservoir and the stream diversion facilities (the "**Stream Diversion Facilities**") for the South Fork Wailua River (the "**Stream**"), which can divert over 30 million gallons of water per day into the Hanamā'ulu Ditch System and (2) act as diversion works operator under a Stream Diversion Registration of Works and Declaration of Water Use, dated May 24, 1989, filed with the Commission on Water Resource Management for the Stream by LPCO. To facilitate the performance of this Agreement, Grove Farm will enter into an agreement or agreements (the "**Authorizing Agreements**") with LLCO: (i) permitting Grove Farm access to allowing Grove Farm to operate the Stream Diversion Facilities, (ii) allowing Grove Farm to secure limited water from Kapaia Reservoir, (iii) securing for Grove Farm an easement or license over the Water Delivery System Easement Area, (iv) securing for

4398 Pua Loke Street Līhu'e, HI 96766 Phone: 808-245-5406 Fax: 808-245-5813 Operations Fax: 808-245-5402

Grove Farm an easement or license of the Treatment Plant Site and (v) permitting Grove Farm to construct the Facility. Such authorizing agreement shall contain a provision binding the successors and assigns of Grove Farm and LLCO. Grove Farm shall provide copies of the Authorizing Agreements to BWS by December 31, 2003."

The Department has previously requested a copy of the agreements referenced in Section 2.b. Control of Surface Water System, but to date has not received them. Without a copy of these agreements, the Department cannot properly evaluate the possibility of acquiring the SWTP. Without documentation regarding Grove Farm ownership rights to the source water (for e.g. appurtenant and riparian rights), the ditch system, and its obligations to other parties with whom it may have water agreements, the Department cannot ensure the continued supply of water as a transferee of these "rights."

The Department will continue to work with Grove Farm to obtain the information necessary to properly evaluate the dedication option whereby the Department would assume ownership, operate, and maintain the SWTP. It is in the best interest of the Department and its ratepayers to continue utilizing the SWTP by allowing the Agreement to automatically extend beyond the upcoming February 19, 2019 termination date.

BW/ein

Attachments: Water Treatment and Delivery Agreement dated February 19, 2004 with Grove Farm Properties, Inc.
3rd Amendment to Water Treatment and Delivery Agreement, dated December 23, 2016

Mgrrp/January 2019/19-42/Discussion and Receipt of Update regarding Status of Water Treatment and Delivery Agreement with Grove Farm Properties, Inc. (1-25-19):ein

From: Moises, Dustin
To: "Mahealani Krafft"
Subject: RE: DHHL Comments & preliminary DEA draft comments
Date: Wednesday, April 10, 2019 11:13:00 AM

[redacted]

Dustin Moises, P.E.
Civil Engineer - Chief of Construction Management
Construction Management Team Leader
Phone:808-245-5459
Fax: 808-245-5813

Managers do things right, Leaders do the right thing. – Warren Bennis

Department of Water County of Kaua'i

From: Mahealani Krafft [mailto:mkrafft@kauai.gov]
Sent: Wednesday, April 10, 2019 10:58 AM
To: Moises, Dustin <dmoises@kauaiwater.org>
Subject: FW: DHHL Comments & preliminary DEA draft comments

From: Moises, Dustin <dmoises@kauaiwater.org>
Sent: Monday, July 31, 2017 4:09 PM
To: Michael Dahilig <mdahilig@kauai.gov>
Cc: bill@kodani.com; Kirk Saiki <ksaiki@kauaiwater.org>; Aoki, Keith <KAoki@kauaiwater.org>; Krafft, Mahealani <mkrafft@kauaiwater.org>; Mahealani Krafft <mkrafft@kauai.gov>
Subject: RE: DHHL Comments & preliminary DEA draft comments

Howzit Mike,

I'm not typically involved with EA reviews anymore since I only oversee construction but I have done EA's in past so here's my comments per your request to help you evaluate the situation. I wanted to get you my comments today so you can prep for Wednesday accordingly.

First, the DHHL letter dated June 30, 2017 is by procedure, in response to the preconsultation letter

EXHIBIT "I-121"

sent in May 2017 by KAE. The general scope and map of the preconsultation letter doesn't detail much about the project so a response like this would likely come from someone with history to the project or they are referencing the old DEA that got cancelled. Also, the draft EA I received last week doesn't include a response to this letter because KAE said the letter actually came last week after DEA was submitted to DOW although the date of DHHL letter is June 30, 2017. Regarding the DEA, this letter should be addressed before the DEA is published. That being said, here's my comments related to DHHL letter.

Comment #1 – There are administrative criteria for significance. Of the 13, this comment could be related to "Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in HRS 344" & "substantially affects the economic or social welfare of the community or State". The DEA should be addressing DHHL's concern related to their projects in the State Water Projects Plan as it relates to CWRM approvals. The original SWTP was rated for 3 MGD + train expansion. The May 6, 2003 Final Engineering Report states plan can go from 3.0 MGD to 4.0MGD with plant capacity firm rates of 3.35 mgd to 4.46 mgd. The new pipeline will allow transmission of more water from the Waiahi Treatment Plant expansion from where it is now. Being that it is known this pipeline will allow expansion (increased withdrawal from Kapaia Reservoir) of SWTP, the argument could be made to that point. The DEA should provide a narrative related to this to ensure the pipeline project will not have a significant impact regarding CWRM source since having the water available is much different than DHHL being able to provide the infrastructure to get the water to their development. Again, this goes back to the flow that was approved with initial plant build in 2005 and capacity by DOH.

Comment #2 – Their comment is right out of the OEQC guide to implementation of HEPA. Similar to item 1, the new pipeline will allow more water transmission from the Reservoir if/when SWTP expanded. I did not do the engineering calcs but if the 18" main can transmit more (increase capacity for water delivery) than the original SWTP MGD approval, then this would be a valid comment since it would be increased withdrawal of Wailua fork water that goes to Waiahi reservoir. That being said, is it necessary to examine the tributaries above the SWTP reservoir? I would say that if the surface water feeding the reservoir will not be changed with expansion (reservoir will have lower level at equilibrium), then maybe not but the safer route would be to study the situation and verify with the DEA. KDOW has no control over diversions but if the 18" allows for more transmission than the current SWTP capacity, I would say the significance should be studied and a conclusion derived in the DEA regarding any impact to tributaries feeding the existing reservoir. Finally, I think their statement "No environmental assessment or statement was prepared for Grove Farm SWTP operations and the DEA should include this assessment within its scope," is the biggest one of this comment. The original treatment plant did not have an EA done and since the very first trigger for HEPA is use of "county funds", one could question validity of the existing SWTP development since KDOW paid 2/3 of the cost with GF and will own it. It would have been helpful to have that done then to fall on now but without one that I am aware of, I would say that should be revisited now with pipeline DEA. From there, the 13 administrative criteria for significance should be evaluated which basically overrides everything I said earlier had you separated STWP from transmission line. This poses a big issue for KDOW a decade later. This is something that should be considered to protect the Board's current and future interests/liabilities at Waiahi.

Comment #3 – Similar to comment #1 as it relates to DHHL planned developments. The DEA can address detailed description of the proposed uses for the increased water delivery (Water Resource & Planning) could help with determining what the 18" main will allow (DHHL and non DHHL planned developments) and work with KAE if they haven't already. I think the comment related to public trust is very broad and something I wouldn't feel needed to be addressed if an EA was conducted a decade ago. With no EA, I question whether or not it should be dealt with now.....see response to next comment.

Comment #4 – I think this is more of a CWRM item and anything related to water use/permits, etc. is CWRM. First, on the engineering side of things, if the 18" waterline capacity is calculated to allow more than the original SWTP design intent, then "proposed increase water withdrawals" should be evaluated with DEA. However, CWRM is the body that deals with the original 3MGD usage. Assuming (with emphasis), the 3 MGD was approved by CWRM a decade ago, I don't see any issues with the 3 MGD or anything approved by CWRM back then if in line with the PER done in early 2000's.....but then I keep coming back to my comment in #2 above. Since no EA was ever done for original SWTP construction, do we address it now? Outside of that, KDOW has no control of diversions. I would say we stay out of that as related to the 18" main.....but goes back to what I said in comment #2. If you increase transmission capacity, which will increase reservoir withdrawals, you need to assess that you can do it without increasing flow into reservoir which should be addressed by confirming yes or no in DEA.

Comment #5 – the cultural impact should be assessed but whether it should be "extensive" or what is deemed "extensive" is in question. Regarding the 18" main construction itself, I would say the area should be evaluated during DEA via guidance for assessing cultural impacts by OEQC. At a glance, I would agree that the project is located in a relatively developed area and one would assume that the waterline construction itself will likely not affect cultural resources but the only way to assure that is to conduct a cultural assessment with a qualified cultural expert. That being said, you it goes back to what I've been saying all along. If the 18" waterline increases capacity which relates to increased SWTP flow, then you would have to do a more "extensive" study upstream of the new waterline is my take.

I have not read the DEA in detail yet but based on DHHL letter and a skim of the DEA provided to me on Friday, I would recommend the approach below.

1. Define the project clearly. What is the pipeline for? What development will it serve (Hanamaulu Triangle, Grove Farm developments, ADU, ARU, etc.)? Is it a pipeline that will increase the capacity (backed up by engineering calcs) above the original SWTP flows that were approved in 2003? If yes, I think you have to evaluate upstream of the pipeline and possibly upstream of the SWTP. If no, then you stay within the pipeline area and it is easy.

   [This is the most important task. Verbage can be used to say both but in the end, use the engineering calcs. Private water system or not, if you increase the size of the pipeline and it allows more transmission capacity, you allow the increase of transmission of water for development. From there, if you know the SWTP will be expanded and will not be able to without the 18" main here (Maalo Road deemed insufficient), I think you have to connect

the dots and draw correlation as I stated above to disclose everything.] If SWTP expansion within original approved limit, I wouldn't worry about the 18" main upstream but it should be confirmed and disclosed.

The draft DEA page 3 states "The capacity of the Waiahi SWTP will not increase due to the installation of the 18-inch water transmission main.". Is this a true statement? If the 18" main were to not occur, could Waiahi SWTP be expanded beyond current flows to anticipated flows with current infrastructure? There is a paragraph right after the statement about Waiahi SWTP being modified in the future. There are modifications that are known at this time such as expansion (going above 3 MGD under existing foot print per Final engineering report 5/6/2003)and potentially outside of existing footprint which should be disclosed now in the DEA. If you are not doing with this EA, does that mean expansion under existing footprint and/or future expansion will be done with a separate EA even if KDOW does not expend funds? I think this should be clearly narrated so it is not a play on words. "Any future expansion of the SWTP is not a necessary action for the proposed 18-inch water transmission main as the proposed project provides the needed transmission capacity for the existing KDOW with or without future SWTP expansion." Okay, but what about reverse? Can future SWTP that is known to be happening occur without the 18" main? If so, this is fine and KDOW is protected in the long term. If not, I think it should be disclosed clearly regarding at minimum the upcoming train expansion being designed by ATA via recent PER.

The natural/cultural impacts should be evaluated by someone deemed knowledgeable. I don't see who did it in section 7.1 & 7.8
Section 7.3, 7.4 , & 7.6 should be addressed to deal with DHHL letter
Section 7.9. – Will the 18" main not involve a commitment (allowance) to larger actions development wise? The project itself will not but do you correlate to bigger developments as a domino? Just be clear on this one.
7.10 – I had to do a Nene study for DOW building. Being this is near Waiahi, how did you determine this? (Bill check numbering)

2. How do you address the EA not being done a decade ago as related to DHHL comment #2 when DOW funds were used the same way the EA was triggered for this pipeline? SWTP is a private system so we have to separate ourselves from that and diversions but we can't separate from the 2/3 DOW $. I think this is the biggest issue related to the EA comments. We don't have anything to stand on from a decade ago to help us now.

3. KAE in drafting it with KDOW should be transparent to the community and disclose anything that could be an issue related to EA whether involves GF, County or KDOW. In doing so, evaluate the 13 administrative criteria for significance and determine CWRM vs KDOW vs others responsibilities during the process. Utilize the OEQC guide for HEPA implementation.

I know this might have made things more confusing but item 1 is really what sets the framework moving forward. Then how you deal with item 2.....then just do by item 3. Let me know if any questions.

Dustin Moises, P.E., CISEC, DSO III
Civil Engineer
Chief of Construction Management
Construction Management Division Head
Phone:808-245-5459
Fax: 808-245-5813

"You're never wrong to do the right thing", Mark Twain

-----Original Message-----
From: Michael Dahilig [mailto:mdahilig@kauai.gov]
Sent: Friday, July 28, 2017 11:53 AM
To: Krafft, Mahealani <mkrafft@kauaiwater.org>; Mahealani M. Krafft <mkrafft@kauai.gov>
Cc: bill@kodani.com; Saiki, Kirk <ksaiki@kauaiwater.org>; Moises, Dustin <dmoises@kauaiwater.org>; Aoki, Keith <KAoki@kauaiwater.org>
Subject: DHHL Comments

Howzit Mahea,

[redacted]

[redacted]

[redacted]

Thanks,
Mike

November 29, 2020

Elizabeth A. Char, Director
Alec Wong, Director CWB
Darryl Lum,
Supervisor of the Engineering Section, Clean Water Branch
State of Hawai'i Department of Health
2827 Waimano Home Road, Room 225,
Pearl City, Hawai'i 96782
VIA EMAIL: cleanwaterbranch@doh.hawaii.gov, alec.wong@doh.hawaii.gov, libby.char@doh.hawaii.gov

Subject: Comment, Request for Public Hearing, and Complaint for Contested Case on Proposed Water Pollution Control Permit for Waiahi Surface Water Treatment Plant, Līhu'e, Island of Kaua'i NPDES Permit No. HI 0021894, Docket No. HI 0021894.

Dear Director Char and Staff,

Please accept the following comment, request for public hearing, and complaint for contested case from the Friends of Māhā'ulepū, a non-profit corporation and Kia'i Wai o Wai'ale'ale, an unincorporated association, both based on Kaua'i. Our comment and complaint concern the proposed Water Pollution Control Permit for Waiahi Surface Water Treatment Plant, Līhu'e, Island of Kaua'i NPDES Permit No. HI 0021894 (permit). The Friends of Māhā'ulepū and Kia'i Wai o Wai'ale'ale request a contested case on the Department of Health's (Department) consideration of the NPDES permit application pursuant to Hawai'i Administrative Rules (HAR) §11-1-22(b).

The Department is proceeding on the Waiahi Water Company NPDES permit application pursuant to Hawai'i Revised Statutes (HRS) §342D-6 (permits), HAR §§11-55-03, -04, -08, -12, -13, and -36, and applicable EPA laws. As detailed further below, Friends of Māhā'ulepū and Kia'i Wai o Wai'ale'ale disagree with, contest, and would be substantively and procedurally aggrieved by the Department's grant of the NPDES permit application. Friends of Māhā'ulepū and Kia'i Wai o Wai'ale'ale request that the NPDES permit application be denied as incomplete and the applicant required to bring forth a new application based on plans that fully address sludge disposal and aluminum removal from effluent.

Officers and supporters of the Friends of Māhā'ulepū and Kia'i Wai o Wai'ale'ale utilize waters that are affected by discharges from Applicant Grove Farm's Waiahi Surface Water Treatment Plant (Waiahi treatment plant) into Kapaia reservoir, including the Wailua and Hanamā'ulu streams (also Kapaia stream)[1] and other receiving waters for domestic, recreative, gathering, and traditional and customary practices.

1. The Department has heightened duties in regard to the permit. The Department is obligated to affirmatively protect water public trust resources. Hawai'i Const. art. XI, §§1, 7. "[M]ere

[1] The application submitted lists only Kapaia Reservoir as a receiving water, but fails to indicate the connection of this reservoir to Hanamā'ulu and Wailua streams.

EXHIBIT "I-122"

compliance by [agencies] with their legislative authority is not sufficient to determine if their actions comport with the requirements of the public trust doctrine. The public trust doctrine at all times forms the outer boundaries of permissible government action with respect to public trust resources." *In re Water Use Permit Applications*, 94 Hawai'i 97, 132, 9 P.3d 409, 444 (2000) *quoting Kootenai Envt'l Alliance v. Panhandle Yacht Club, Inc.,* 671 P.2d 1085, 1095 (Idaho 1983). "This view is all the more compelling here, in light of our state's constitutional public trust mandate." *Id.* The Department's public trust duties have been specifically enunciated with regard to water quality permitting.

> As guardian of the water quality in this state, DOH then "must not relegate itself to the role of a 'mere umpire' . . . but instead must take the initiative in considering, protecting, and advancing public rights in the resource at every stage of the planning and decision-making process." [citation omitted]. Thus, "the state may compromise public rights in the resource pursuant only to a decision made with a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state." [citation omitted]. Such a duty requires DOH to not only issue permits after prescribed measures appear to be in compliance with state regulation, but also to ensure that the prescribed measures are actually being implemented after a thorough assessment of the possible adverse impacts the development would have on the State's natural resources. This duty is consistent with the constitutional mandate under article XI, section 1 and the duties imposed upon DOH by HRS chapters 342D and 342E.

Kelly v. 1250 Oceanside Partners, 111 Hawai'i 205, 231, 140 P.3d 985, 1011 (2006) quoting *In re Water Use Permit Applications*, 94 Hawai'i at 143, 9 P.3d at 456 (emphases omitted). "In Hawaii, this court has recognized . . . a distinct public trust encompassing all the water resources of the State." *Kauai Springs, Inc. v. Planning Comm'n of the Cnty. of Kaua'i*, 133 Hawai'i 141, 170-71, 324 P.3d 951, 981-82 (2014) quoting *Waiahole I*, 94 Hawai'i at 133, 9 P.3d at 445. "[T] he public trust doctrine applies to all water resources without exception or distinction." *Id.* "The public trust is, therefore, the duty and authority to maintain the purity and flow of our waters for future generations and to assure that the waters of our land are put to reasonable and beneficial uses." *Kaua'i Springs,* 133 Hawai'i at 171, 324 P.3d at 982 quoting *Waiahole I*, 94 Hawai'i at 138, 9 P.3d at 450.

The Department's procedures in handling the permit application are subject to heightened scrutiny as a consequence of these public trust protections. As discussed further below, the proposed permit and the procedures utilized to address it fall far below these heightened standards. We urge the Department to terminate the permit process and require the Applicant to resubmit a valid permit application with appropriate supporting information.

2. Department's tentative determination is procedurally and substantively defective. The October 30, 2020 notice of its tentative determination to grant the NPDES permit did not include the information required pursuant to HAR §11-55-08. Supporting documents for the permit application do not include the proposed determination, proposed effluent limitations, proposed schedules of compliance, monitoring requirements, or any proposed special conditions. *Id.*(a). No draft permit was included in the supporting documents noticed on October 30, 2020. Instead, the documents appear to indicate past enforcement actions and past violations. Without notice of the Department's proposed action, FOM and the public are handicapped in their ability to comment.

To the extent the document titled, "06015EBT.20. Grove Farm Waiahi Water EBP Approval. HI0021894 (part 2) - signed (003)" is intended to disclose the Department's proposed determination,

proposed effluent limitations, proposed schedules of compliance, monitoring requirements, or any proposed special conditions, the document raises more questions than it answers. According to these terms, Applicant Grove Farm is required to submit certain reports and pay scheduled fines upon violation of certain effluent standards. These administrative consent decree provisions, however, do not meet the requirements of HAR §11-55-08.

3. Applicant did not submit a valid permit application. FOM's director notified the Department of Health (Department) that the October 30, 2020 notice directed members of the public to electronic documents in the linked folder,[2] which folder did not include a new permit application. Department representatives informed FOM that no new application had been received and the Applicant is relying on a permit application submitted in 2016 by a different company under a terminated/expired permit number.

The linked folder includes a 13-page EPA Form 2C NPDES application dated and signed February 2016 for permit to discharge wastewater for existing manufacturing, commercial, mining, and silviculture operations (Form 2C). The Form 2C was approved under OMB No. 2040-0086 and states "Approval expires 3-31-98." EPA's 47-page updated Form 2C was revised and approved on March 5, 2019 under OMB No. 2020-0004 and is materially different from the outdated form now being relied on by the Department.[3] The Clean Water Branch's website titled, "Forms to be used in E-Permitting Portal for the National Pollution Discharge Elimination System (NPDES) Program" directs viewers to the current EPA permit application.[4]

Applicant's use of the incorrect form is material to the contents disclosed to the public and the Department. As discussed below in Part 4, the Waiahi treatment plant generates sludge for which no disposal plan is disclosed. The current EPA NPDES application Form 2C requires, for each outfall, information identifying "(4) the applicable treatment code(s) from Exhibit 2C–2 (see end of instructions); and (5) the ultimate disposal of any solid or fluid wastes that are not discharged to the receiving water." EPA's Exhibit 2C-2 lists 23 types of sludge treatment and disposal processes in addition to activated sludge biological treatment processes. This important information is withheld from the public and the Department consequent to the Applicant's use of an invalid permit application form.

Applicant's renewal application, which appears to have been posted into the Department's googledoc folder on or after the October 30, 2020 public notice, is invalid because there was no permit to "renew." Renewal applications must be submitted at least 180 days prior to the expiration of the previous

---

[2] DOH published a Notice of Proposed Water Pollution Control Permit for Waiahi Surface Water Treatment Plant, Līhuʻe, Island of Kauaʻi NPDES Permit No. HI 0021894, Docket No. HI 0021894, in *The Garden Isle* (Oct. 30, 2020). DOH's notice included the following link: https://health.hawaii.gov/cwb/cleanwater-branch-home-page/public-notices-and-updates/. The website refers the public to Waiahi Surface Water Treatment Plant DOH Notice of intent to issue NPDES permit *available at*: https://drive.google.com/file/d/1qjmCN_ilb67R9X4WRfVl2BjllokdAglF and, Supporting Documents for DOH Notice of Intent *available at*: https://drive.google.com/drive/folders/1pLtZtXa9rJxDmNqX5HbMIbhb6NF9hEYe.

[3] *See* EPA Form No. 3510-2C (approved Mar. 5, 2020) *available at*: https://www.epa.gov/sites/production/files/2020-04/documents/form_2c_epa_form_3510-2cr.pdf.

[4] *See* Clean Water Branch, State of Hawai'i Department of Health (accessed Nov. 12, 2020) *available at*: https://health.hawaii.gov/cwb/clean-water-branch-home-page/forms/

permit. HAR §11-55-27(a). The previous Waiahi treatment plant permit expired on April 30, 2016. Applicant's renewal application appears to have a date of "5/22/2020" and anyway includes supporting documents dated "2020March13_Letter to DOH-Request.pdf." The renewal application is untimely and cannot be processed as such.

4. Application fails to disclose sludge disposal methods. According to the Applicant's supporting study from the University of Central Florida, "[p]roper maintenance of the existing discharge basin, with regular sludge handling is required to reduce risk of inclement weather kicking up sludge and increasing the solids (and the therefore total recoverable aluminum) content in the water flowing over the weir and into the outfall."[5] Nowhere in the application is a discussion of Applicant's plan for handling and disposing of sludge from its detention basins.

This omission is suspect for reasons including that in July 24, 2017, Grove Farm consultants indicated that the sludge would be placed on drying beds and the DOH Solid and Hazardous Waste Branch advised that if the dried solids were not hazardous or regulated solid waste, the solids could be taken to Kekaha landfill.[6] We have been unable to find any further discussion of the disposal of Waiahi treatment plant sludge through public record requests.

The application was required to contain information complaint with 40 C.F.R. §§122.21(f) through (1) and (r) "to determine in what manner the new or existing treatment works or wastes outlet . . . will be constructed or modified, operated, and controlled." HAR §11-55-04(b); *see also* HAR §11-55-02(c) (requiring all permits to "be at least as stringent as those required by 40 CFR §123.25(a)"); 40 CFR §123.24(a) (incorporating relevant provisions of 40 C.F.R. §122.21).

40 C.F.R. §122.21(f)(7) requires submission of a map "extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures [and] each of its hazardous waste treatment, storage, or disposal facilities." More specifically, 40 C.F.R. §122.21(g)(3) requires "a description of the treatment the wastewater receives, including the ultimate disposal of any solid or fluid wastes other than by discharge." The Waiahi application does not include this map or any discussion of disposal facilities for hazardous sludge or any "solid or fluid wastes[,]" which would include the sludge. These omissions are material to the Department's ability to assess the permit's impacts on public trust resources.

Applicants are required to "submit a complete NPDES permit application" pursuant to HAR §11-55-04(a). The Waiahi treatment plant application is incomplete for reasons including that it fails to disclose sludge disposal methods and should be denied on these grounds.

5. Department's changed position on total recoverable aluminum renders sludge disposal all the more important. Applicant's consultant collected samples from the "discharge basin" of the Waiahi

---

[5] Steven J. Duranceau, University of Central Florida, "Waiahi Water Treatment Facility Ultrafiltration Backwash Water Settling and Residual Aluminum Analysis, Preliminary Technical Memorandum," prepared for Aqua Engineers, Inc., at 7 (Mar. 12, 2020).

[6] Email from William Eddy, Kodani Associates, to Jennifer Nikaido, Department of Health, Subject: FW: PWS No. 400, Lihue-Kapaa Waiahi WTP Upgrades (Jul. 24, 2017) (Filename: Waiahi-WTPUpgrades-SludgeDispOptionsEmail-2017-07-24 (obtained via UIPA request to WWB dated April 3, 2019)).

treatment plant on November 12, 2019 and "while on site on January 10, 2020 through January 16, 2020."[7] Consultant reported discharge from the concentrate stream of the process (after time in a detention basin) contains a dissolved aluminum concentration between 8 and 26 μg/L and water collected from the reservoir itself has a dissolved aluminum content of between 30 and 120 μg/L. By contrast, the application reports a maximum daily value concentration of aluminum as 3,100 μg/L and a long term average value concentration of 1,980 μg/L. These measurements were premised on 12 analyses. Application, page V-2.

The plan for Waiahi treatment plant compliance with water pollution standards appears to be premised on the Department's decision to assess only the dissolved fraction of aluminum as opposed to the total recoverable aluminum. Such a decision renders the disposal of the sludge, which Applicant represents will hold most of the aluminum, an even more important issue. Deferring consideration of Waiahi treatment plant sludge disposal is contrary to the plain requirements of the Department's rules and the Department's obligations as public trustees.

6. Supporting documents for the "application" are confusing and irrelevant. Documents provided do not assist the public in understanding Applicant's proposal. For instance, the link includes Grove Farm's April 18, 2017 letter requesting $100,000 from the State Commission on Water Resources Management (CWRM) for construction of off-site detention basins. Yet, CWRM's Water Security Advisory Group never recommended Grove Farm's project for funding and CWRM did not approve any funding at its June 2017 meeting. As presented, this information rather alerts the public that Grove Farm lacks funding to implement its proposed permit.

7. The Department's review is handicapped by the absence of any environmental review documents for the Waiahi treatment plant. Although it was constructed in significant part with county funds and is the basis for water delivery contracts with the county, the Waiahi treatment plant operation evaded environmental review prior to its construction in 2001. The omission of environmental review disclosure documents beleaguers the Department's review of the NPDES permit application, which concerns use of surface waters, the retention and disposal of aluminum-laden sludge, and impacts of returning treatment plant wastewater to the Kapaia reservoir and the streams to which it is connected. Because the Department cannot, as would ordinarily have been the case, refer to an environmental impact statement in assessing the NPDES permit application, a more scrutinous inquiry into the Waiahi treatment plant's compliance with clean water and procedural regulations is warranted.

8. A public hearing is needed to address myriad questions that surround Waiahi treatment plant operations, its discharges to Kapaia reservoir, and the procedures employed for permit HI0021894. Grove Farm/ Waiahi Water Company has been illegally operating the Waiahi treatment plant without a permit or administrative extension for over four years now and should be answerable to the public that is affected by its actions.

FOM and its officers and supporters request a public hearing on the Waiahi treatment plant NPDES permit application pursuant to HAR §11-55-13. A public hearing is warranted to address the irregularities of the Waiahi treatment plant permitting procedures, Grove Farm/ Waiahi Water Company's nearly two decades of apparent noncompliance with water quality requirements, heretofore undisclosed plans to

[7] Duranceau, *supra* at 2.

dispose or treat sludge byproduct that may be hazardous, and for other reasons supporting an increase in public confidence in the Department's permitting processes.

For the foregoing reasons, the Friends of Māhā'ulepū and Kia'i Wai o Waialaeale request that the Department reverse its tentative determination to approve the Waiahi treatment plant permit application, deny the application, hold a public hearing to address extant issues and to better inform the community of issues surrounding Grove Farm's operation of the Waiahi treatment plant, and/or grant our request for a contested case hearing. Please contact me with any questions.

Yours truly,

Bridget Hammerquist, President
Friends of Māhā'ulepū
P.O. Box 1654
Koloa, Hawai'i 96756

North Shore Hydrological Services

Matt Rosener, MS, PE, Principal

Memo

To: Bianca Isaki

From: Matt Rosener

Date: February 15, 2021

Re: HoKua Place Drainage Analysis review

I have reviewed the Drainage Analysis for HoKua Place, prepared by Bow Engineering and Development, Inc., dated February 2021, and I offer the following comments for your consideration.

1. The methodology utilized to analyze site drainage for existing and proposed future conditions can be described as standard engineering practice. However, the decision to compare a larger drainage area for pre-development (125.44 acres) vs. post-development (91.49 acres) conditions made the evaluation a bit confusing (see Table A). The reason for performing the analysis in this way is unknown, but if the same drainage areas had been compared for pre- and post-development, the increase in runoff (as a percentage of existing) would have been larger than what was presented in the report.

2. For the hydrologic analysis of existing conditions, 5 separate drainage basins were delineated (A-E), and portions of Basins A and B include areas outside of the proposed HoKua Place development, mainly in the Kapa'a Middle School property. These same areas were not included in the post-development calculations which does not allow for direct comparison of pre- and post-development runoff flow rates and volumes.

3. The general drainage plan seems to include the capture of surface runoff from all developed areas in catch basins, routing stormwater through pipes and existing gullies to two large detentions basins, and then attenuating peak flows through storage volume in these basins. As you know, this is a common drainage improvement scheme to keep post-development runoff at or below pre-development levels.

4. It should be noted that runoff in the unnamed stream near the western property boundary is projected to be reduced by the development's drainage improvements. This is due to stormwater in a portion of drainage Basin A being routed away from this unnamed stream towards Detention Basin 1, located near the southwest corner of the proposed Hokua Place development. 100-year flow estimates for this unnamed stream are 213.29 cfs for existing conditions and 57.51 cfs for proposed conditions, but note that the latter estimate does not include runoff from the off-site drainage area that contributes flow to this stream (Kapa'a Middle School area).

5. The report explicitly states that the runoff evaluation for existing and proposed conditions "is not a direct comparison since the existing condition flows also include the offsite runoff from the middle school and the proposed condition flows do not", adding that the analysis is "sufficient for concept planning purposes" (pg. 11). At this point, two runoff comparisons are made. The first compares the combined runoff from Basins B and D for existing conditions with the proposed flows to Detention Basin 2, even though these proposed flows would be generated from substantial portions of Basins C and E as well. The second comparison is between flows from existing Basin

P.O. Box 1189, Hanalei, HI 96714 / P.O. Box 4032, Port Angeles, WA 98363
(808) 639 2640

EXHIBIT "I-123"

E and proposed flows to Detention Basin 1. This is also a tricky comparison as runoff from a portion of Basin A would also be routed to Detention Basin 1, according to Figures 3 and 4. It is clear that the analysis presented here is more "proof-of-concept" than a final evaluation of changes to runoff volumes and patterns from the proposed development.

6. For the 100-year storm design scenario, modeled runoff from the 5 drainage basins A-E totaled 611 cfs (Table 1). This includes off-site runoff from the Middle School campus. For the proposed future conditions, the modeled runoff from the HoKua Place site only is 961 cfs (Table 4). If all runoff from the developed area is routed to the two detention basins as planned, the modeled peak outflows from these basins is 94 cfs for Detention Basin 1 and 196 cfs for Detention Basin 2. Other runoff leaving the proposed project area would include 57.5 cfs in the unnamed stream on the project's western boundary and an unknown amount from undeveloped areas on the eastern margin of the property. Again, because of differences in the pre- and post-development drainage areas used for the analysis, it is not possible to make a direct comparison. But, it seems that the modeled post-development 100-year runoff would at least be "in the ballpark" of existing conditions.

7. At a conceptual level, the analysis seems to show that the two detention basins could be used to mitigate post-development stormflows from the site to pre-development levels. I am not familiar enough with the terrain to say for certain, but there may be issues fitting Detention Basin 1 into the proposed location. I haven't noticed much low-gradient terrain in this area, meaning that extensive excavation would likely be required at the base of the steep hill along the Bypass Road, along with a sizeable berm that would impound stormwater in the gully bottoms. The terrain near the proposed Detention Basin 2 appears to be more gently-sloped from the existing ground topo (Figure 1).

8. The bigger question is where these proposed detention basins would discharge to. Table 1 lists various discharge points for the existing drainage pattern. These include Greenbelt 1/Unnamed Stream (for Basin A), Greenbelt 2 (Basin D), Greenbelt 3 (Basin B), Olohena Road (Basin C), and the Kapa'a Bypass Road (Basin E). With the overall drainage plan routing all surface runoff from the proposed development to the two detention basins, it seems important to know how and where outflows are routed to downstream receiving waters.

9. The proposed location of Detention Basin 2 is near a spur channel of the Waika'ea Drainage Canal, so it would make sense to route outflows under the Bypass Road to this drainage feature through a culvert. It is unknown if any culverts presently exist in this area. For the proposed location of Detention Basin 1, the logical outlet point would be the nearby Kainahola Stream that flows under an existing bridge on the Bypass Road. From personal observations, I am aware of dense Hau Bush thickets that clog the Kainahola Stream channel, limiting effective drainage through the stream corridor in this area. It is possible that some of the runoff from existing drainage Basin E crosses over (by sheet flow) or under (through culverts) the Bypass Road in the area of the Cavalry Church. If runoff from all of Basin E is routed through Detention Basin 1 as indicated in this drainage analysis, this could result in higher flows at the Kainahola Stream / Kapa'a Bypass Road crossing where existing drainage conditions are severely degraded by the thick Hau Bush.

I appreciate the opportunity to review the drainage analysis for the proposed HoKua Place development, and I hope that the feedback from my review is helpful to your understanding of the proposed drainage improvements. If you have any questions about the information presented here, please do not hesitate to contact me at (808) 639 2640 or at laminarmatt@gmail.com.

BEFORE THE LAND USE COMMISSION OF THE

STATE OF HAWAIʻI

In the Matter of the Petition of:	)	DOCKET NO. A11-791
	)	
HG KAUAI JOINT VENTURE, LLC	)	CERTIFICATE OF SERVICE
	)	
	)	

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this date a true and correct copy of the foregoing document was served on the following via email pursuant to the Executive Director's email dated December 15, 2020:

Dawn Takeuchi Apuna, Esq.
Department of the Attorney General
dawn.t.apuna@hawaii.gov

Counsel for STATE OF HAWAIʻI LAND USE COMMISSION

William W.L. Yuen
Janna Wehilani Ahu
Dentons US LLP
william.yuen@dentons.com

Attorneys for HG KAUAI JOINT VENTURE, LLC

Jodi Higuchi Sayegusa
KAUAI COUNTY PLANNING DEPARTMENT
jhiguchi@kauai.gov

Chris Donahoe, Esq.
County of Kauaʻi, Corporation Counsel
cdonahoe@kauai.gov

Rodney Y. Funakoshi
STATE OF HAWAII, OFFICE OF PLANNING
rodney.y.funakoshi@hawaii.gov

DATED: Honolulu, Hawaiʻi February 17, 2021

Bianca Isaki

LAW OFFICE OF LANCE D. COLLINS
LANCE D. COLLINS
LAW OFFICE OF BIANCA ISAKI
BIANCA ISAKI
Attorneys for Intervenor LIKO MARTIN