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STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

Honolulu, Oʻahu

Accept Findings of Fact and Chairperson's Recommendation to Designate the Lahaina Aquifer Sector Area as both a Surface Water and Ground Water Management Area including the Honokōhau, Honolua, Honokahua, Kahana, Honokōwai, Wahikuli, Kahoma, Kauaʻula, Launiupoko, Olowalu, Ukumehame Surface Water Hydrologic Units and the Honokōhau, Honolua, Honokōwai, Launiupoko, Olowalu, and Ukumehame Groundwater Hydrologic Units, Under the Authority of § 174C-41, HRS, with Designation Proceedings begun on November 28, 2021, Island of Maui, Hawaiʻi

SUMMARY OF REQUEST:

Action; The Chairperson, after consulting with Maui's County Council, Mayor, and Board of Water Supply recommends that the Commission on Water Resource Management (Commission) accept Findings of Fact and designate the Lahaina Aquifer Sector Area (Lahaina ASA) as both a Surface and Ground Water Management Area including the Honokōhau, Honolua, Honokahua, Kahana, Honokōwai, Wahikuli, Kahoma, Kauaʻula, Launiupoko, Olowalu, Ukumehame Surface Water Hydrologic Units and the Honokōhau, Honolua, Honokōwai, Launiupoko, Olowalu, and Ukumehame Groundwater Hydrologic Units.

DESIGNATION PROCESS:

The process to designate a ground and surface water management area (WMA) is described in Hawaiʻi Revised Statutes (HRS) § 174C-41 to -46 and Hawaii Administrative Rules (HAR) § 13-171-3 to -9. The process follows these general steps:

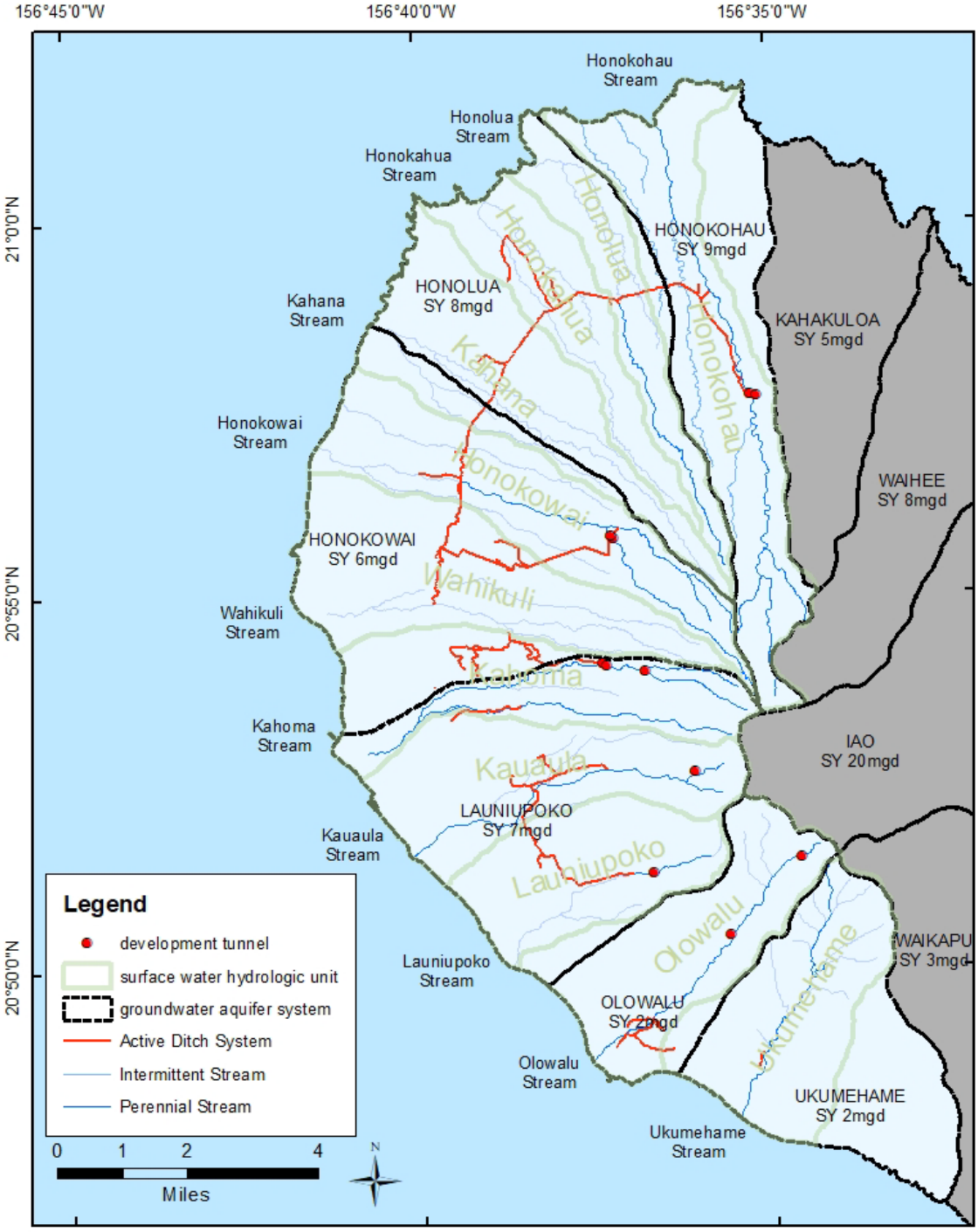
(1) Recommendation to designate by the Chairperson or by written petition for initiation or continuation of investigation of the situation in the proposed management area; HRS § 174C-41(a).
(2) Consultation with county council, county mayor, and county water board concerning the recommendation or petition HRS § 174C-41(b).
(3) Commission action to accept recommendation regarding designation of water management area and to hold public hearing. HRS § 174C-42.
(4) Notice for and Conduct of Public Hearing. HRS § 174C-42.
(5) Commission action to accept findings of fact and accept, deny, or defer recommendation to designate a water management area HRS § 174C-46.

This submittal refers to step (5).

LOCATION MAP:

Figure 1. Lahaina ASA

Ground Water Aquifer Systems Areas and their sustainable yields (SY) for the Lahaina Aquifer Sector with overlaying surface water hydrologic units and their perennial and intermittent streams with development tunnels and active irrigation ditch systems.



CHRONOLOGY:

In 2011, the Commission entered into a joint funding agreement with the U.S. Geological Survey to develop low-flow hydrological characteristics for streams from Ukumehame to Honolua for the purpose of developing interim instream flow standards (interim IFS).[1]

From 2016 to 2021, staff conducted investigation and research on the surface and groundwater conditions in the Lahaina ASA.

On November 29, 2021, the Chairperson initiated designation proceedings and began consultation with the County Council, County Mayor, and County Water Board via formal letter.

On December 7, 16, and 29, 2021, staff received responses from the County Council dated with clarifying questions requesting data and a request to present to the County Council in order to better understand the designation process and timeline.

On December 17, 2021, staff responded with letter dated December 17, 2021.

On December 28, 2021, staff received a response from Maui DWS providing preliminary comments.

On January 18, 2022, staff presented an informational item to the Commission on Chairperson's initiation of designation proceedings for the Lahaina ASA as both a Surface and Ground Water Management Area and responses received from Maui County Council and MDWS. Written and oral public testimony is received.

On January 20, 2022, staff presented at the Maui Board of Water Supply monthly meeting. Subsequently, the Maui County Board of Water Supply unanimously voted to support designation of the Lahaina ASA as a surface and ground water management area.

On February 15, 2022, staff presented an action item to the Commission to accept the Chairperson's recommendation to designate the entire Lahaina ASA as a surface and ground water management area and to notice and hold a public hearing. Written and oral public testimony is received.

On February 22, 2022, staff presented at the Maui County Council's Agriculture and Public Trust Committee meeting.

On March 4, 2022, the Maui County Council adopted Resolution 22-73 "Supporting the Designation of the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area" unanimously (8-0), with reservations by Chair Alice L. Lee.

Public notices of the required public hearing were published in The Honolulu Star-Advertiser and The Maui News issues on March 30, April 6 and 13, 2022.

Commission staff prepared a Draft Findings of Fact document, dated April 21, 2022.

On April 26, 2022, the Commission held a public hearing on the island of Maui at the Kēopūolani Hall at Waiola Church to receive public testimony related to designation of the Lahaina ASA as a

[1] This work resulted in the production of the USGS Scientific Investigations Report (SIR) 2014-5087. https://pubs.usgs.gov/sir/2014/5087/pdf/sir2014-5087.pdf

surface and ground water management area. Seventy-six (76) people signed the attendance sheet. Sixty-two (62) people testified, and sixty-eight (68) provided written testimony.

FINDING OF FACTS EXCERPTS:

A Findings of Fact (FOF) has been prepared for the Commission on Water Resource Management (Commission) in accordance with §§ 174C-43 to -46 of Hawai'i Revised Statutes (HRS) (See Exhibit 1). This document presents the findings relative to the eight (8) ground water designation criteria as specified in HRS § 174C-44, the three (3) surface water designation criteria as specified in HRS § 174C-45, and other factors for the Commission to consider in its decision whether to establish administrative control over the ground and surface waters in the area to ensure protection and reasonable-beneficial use of these public trust resources. This report should facilitate the Commission's decision of designating the Lahaina Aquifer System Area (ASA) as a Surface and Ground Water Management Area.

Below are excerpts from the FOF that included updated information from the January's staff submittal on the Lahaina ASA recommendation to designate.

Table 13. Current (December 2021) 12-month Moving Average (MAV)

Includes reported pumpage and for aquifer systems in the Lahaina Aquifer Sector. development tunnel discharge and existing entitled/authorized planned use (APU) [million gallons per day, mgd]

Aquifer System	SY	2020 12-MAV	2021 12-MAV	Develop. tunnel discharge	APU*	total existing + APU	% SY	other perm. well capacity	total incl. other perm. well capacity	% SY
Ukumehame	2	0.042	0.065	0	1.08	1.145	57%	0	1.145	57%
Olowalu	2	0.082	0.069	0.1	0.003	0.167	8%	0.065	0.167	8%
Launiupoko	**7**	**1.637**	**1.303**	**3.91**	**1.036**	**6.249**	**89%**	**1.433**	**7.682**	**110%**
Honokōwai	**6**	**3.48**	**4.008**	**2.5**	**2.533**	**9.041**	**151%**	**0**	**9.041**	**151%**
Honolua	8	2.131	2.534	0	1.969	4.503	56%	0	4.503	56%
Honokōhau	9	0	0	3.75	0.001	3.751	42%	0	3.751	42%

*Based on email and excel table from County of Maui DWS September 3, 2020. *See also* Section 4.9 Authorized Planned Use.

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Table 20. Current Well Applications Pending Completion

Aquifer System/Well Number	Well Name	Well Owner/Operator	Proposed capacity (mgd)	Proposed daily pumpage (gpd)	Well Use
Ukumehame					
6-4834-002	UKA-4	Ukumehame Water Association, Inc./Uka LLC	0.058	30,000	MUNPR
6-4834-003	UKA-5	Ukumehame Water Association, Inc./Uka LLC	0.504	250,000	MUNPR
Total			**3.058**	**280,000**	
Olowalu					
6-4936-004	Olowalu 2	Olowalu Water Company LLC	0.36	360,000	MUN
6-4936-005	Kahili*	Francis Cornelis & Nadja Cornelis Koole	0.065	9,000	DOM
Total			**0.425**	**369,000**	
Total *			**0.065**	**9,000**	
Launiupoko**					
6-5037-001	Jackson Rancheria*	Larry White (Jackson Rancheria Development Corp)	0.108	75,000	AGRCP
6-5038-001	Rock N Horse*	Ian Hollingsworth	0.115	100,000	DOM
6-5137-002	Maria Lynn Moyer Memorial*	Timothy & Harline Moyer Trust	0.058	5,000	DOM
6-5138-004	Mitchell*	Mitchell Family Trust	0.072	24,000	IRR
6-5138-005	LIC-2*	LIC	0.72	700,000	AGR
6-5139-004	Rogers*	Matthew Rogers (Kahalawai Holdings LLC)	--***	--***	--***
6-5239-001	Ku‘ia Estate*	Gunars Valkirs (Maui Kuia Estate Chocolate Inc.)	0.36	270,000	AGRCP
Total			**1.433**	**1174,000**	
Total *			**1.433**	**1174,000**	
Honokōwai					
6-5639-004	DHHL Honokowai	Maui DWS/DHHL	1.008	680,000	MUN
Total			**1.008**	**680,000**	
Honolua					
6-5839-005	Pulelehua 1	Maui Oceanview, LP	0.864	280,000	MUN
6-5839-006	Pulelehua 2	Maui Oceanview, LP	0.864	280,000	MUN
Total			**1.728**	**560,000**	

*Other permitted well capacity (individual or irrigation wells) not accounted for in authorized planned use
**Not including requested pump installation permit for State Well No. 6-5240-003 Lahaina Shaft B.
***Not provided in well application

Table 21. Current (2022) Well Statistics for Lahaina ASA

Total number of wells, number of wells reporting, total number of production wells, number of production wells reporting, percent of wells reporting, and percent of production wells reporting for the Lahaina Aquifer Sector.

Aquifer system	# of wells (incl. OBS and UNU)	# of wells reporting	# of production wells	# of production wells reporting	% of wells reporting	% of production wells reporting
Honokōhau	4	0	3	0	0%	0%
Honolua	16	9	11	8	53%	72.7%
Honokōwai	42	28	25	19	67%	76%
Launiupoko	31	22	21	19	71%	90.5%
Olowalu	5	4	3	3	80%	100%
Ukumehame	5	4	2	2	80%	100%

Table 23. Maximum Permitted Pump Capacity by Aquifer System Area

Aquifer System Area	Maximum Pump Capacity (mgd)	SY (mgd)	Installed Pump Capacity as % of SY
Ukumehame	4.961	2	248%
Olowalu	8.618	2	430%
Launiupoko	42.856	7	612%
Honokōwai	43.945	6	732%
Honolua	7.752	8	97%
Honokōhau	0.012	9	0.001%

Some of the large capacities identified include all of the former sugar skimming wells, most of which are now unused (Table 24). Skimming wells are mine-like shafts to the basal water table with one of more infiltration tunnels skimming the fresh water off the underlying saltwater. The wells that yielded excessively large volumes of water and also the had highest salt content.[2] Most of the skimming wells in the Lahaina ASA are unused with non-functioning pump equipment and pose a safety and contamination hazard.

[2] Stearns, H.T., 1942, General geology and ground-water resources of the island of Maui, Hawaii: Hawaii (Terr.) Division of Hydrography Bulletin 7, p. 127 https://pubs.usgs.gov/misc/stearns/Maui.pdf

Table 24. Skimming Wells/Shafts by Aquifer System Area

Aquifer System/Well Number	Well Name	Well Owner/Operator	Year Drilled	Installed Capacity (mgd)	Type of Use
Honolua					
6-5839-001	Alaeloa Shaft	Baldwin Packer	1934	0.010	IRR
Total	**1**			**0.010**	
Honokōwai					
6-5541-001	Hahakea Pump G	Kaanapali Land Management Corp.	1923		UNU
6-5640-001	Honokowai Pump R	Pioneer Mill Co., LLC	1952	5.040	UNU
6-5641-001	Kaanapali Pump D	Pioneer Mill Co., LLC	1897	14.010	UNU
6-5641-002	Honokowai Pump F	Pioneer Mill Co., LLC	1921	5.000	UNU
Total	**4**			**24.440**	
Launiupoko					
6-5240-001	Mill Shaft C	Pioneer Mill Co., LLC	1897	10.000	ABN*
6-5240-002	Lahaina Shaft-Pump B	Wainee Land and Homes, LLC	1897	2.000	UNU
6-5240-003	Lahaina Shaft-Pump A	Wainee Land and Homes, LLC	1897	10.000	INDMI
6-5340-001	Kahoma Pump M	Kahoma Land LLC	1933	10.080	UNU
6-5341-001	Wahikuli Pump L	Kaanapali Land Management Corp.	1897	5.040	UNU
Total	**4**			**37.120**	
Olowalu					
6-4837-001	Olowalu Pump O	Olowalu Elua Assoc., LLC	1905	2.995	UNU
6-4937-001	Olowalu Pump N	Olowalu Elua Assoc., LLC	1933	5.198	UNU
Total	**2**			**8.193**	
Ukumehame					
6-4835-001	Ukumehame-Pump P	State of Hawai‘i	1934	4.694	UNU
Total	**1**			**4.694**	
Total Lahaina ASA	**13**			**74.457**	

*Potential unsealed parts remaining

Recently, the owner of Lahaina Shaft-Pump A (State Well No. 6-5240-003), Wainee Land and Homes, demolished the well houses of Lahaina Shaft-Pump A and B (State Well No. 6-5240-002). A new 700 gpm pump was installed in Pump A, which would have a maximum daily production of 1 mgd. Previously since 1942, Pump A has had a 7,000 gpm pump installed with a maximum capacity of 10 mgd and Pump B had a 1,400 gpm pump installed with maximum capacity of 2 mgd. Commission staff notified the well owner in September 2021 that a pump installation permit would be required as well as a pump test to show that there are no adverse impacts to the environment and other existing water users. On April 20, 2022, well owner was required to develop a plan to enclose well heads, run a pump which needs to adhere to added conditions, and report chlorides and quantities pumped. The well owner was also reminded that prior to approval of the pump installation

permit, no water for consumptive uses must be pumped. It is staff's understanding that a replacement would be also requested for Pump B, but it is not known at this time how much quantity will be requested to be withdrawn in total for the Lahaina Shaft Pumps A & B, and whether they would be run at the same time. This construction and proposed water use are part of the PUC Docket 2020-0083 as Wainee Land and Homes has an easement agreement with LIC.

NEW INFORMATION:

Water Quality Assessment by the Department of Health

The Commission requested a determination of actual and threatened water quality degradation in the Lahaina ASA by the Department of Health (DOH) pursuant to HRS § 174C-44 (2) and HRS § 174C-45 (2).

Per consultation with the DOH, there are water quality issues within the Lahaina Aquifer Sector, but overwhelmingly these are problems from isolated legacy contaminants, including:

- 1-2-Dibromo-3-Chloropropane (DBCP)
- Ethylene Dibromide (EDB)
- 1-2-3-Trichloropropane (TCP)
- Hexachlorocyclopentadiene
- Carbon Tetrachloride
- Tetrachloroethylene (PCE)

Per DOH, these contaminants will not be made worse by increased groundwater withdrawals or water diversions. On the other hand, further development of West Maui may cause an increase in groundwater concentration of Nitrate and chlorides. DOH's assessment is that this criterion is only met for Honokōwai Aquifer System.

While DOH's analysis only indicates Honokōwai Aquifer System is approaching the maximum that can be sustained without degradation of water resources, Commission staff believe it's prudent to still manage water as a sector and larger region. Wells will need to shift north and south of Honokōwai that may have further water quality impacts on these adjacent aquifers, with the possible additional discovery of legacy contaminants and increases in chlorides. Commission staff are also concerned that DOH's analysis only attributed rises in chlorides due to increase pumpage in relation to droughts and water shortage, but staff are already seeing a shift to groundwater wells sources, especially in Launiupoko, to meet non-potable needs as IIFS are updated throughout the region.

DOH did not provide any explicit comments related to whether the diversions of stream waters are reducing the capacity of the stream to assimilate pollutants to an extent which adversely affects public health of existing instream uses.

SUMMARY OF TESTIMONY:

In response to the notice of public hearing, staff received sixty-nine (69) written testimonies and heard sixty-two (62) testifiers in person at Waiola Church in Lahaina on April 26th, 2022. The Final FOF contains a compilation and summary of the written testimony and a transcript of the oral testimony. The overwhelming majority supports designation and applauds the Commission for taking a proactive approach to secure Lahaina's water future and protect public trust purposes. Below is a summary testimony received organized by themes, which is pertinent to the designation criteria.

THEMES

Serious Historic and Ongoing Disputes over Current and Planned Uses are Occurring

The written and oral testimony of community members in the Lahaina ASA unanimously referenced serious disputes over water and requested[3] designation as a proactive management at every Commission meeting and again at the public hearing. The community is joined by Lahaina's County Councilwoman Tamara Paltin and West Maui State Representative Angus McKelvey.[4] Testimony by Earthjustice, the Hui Nā Mamo Aloha ʻĀina o Honokōhau, Nā Pāpaʻi Wawae ʻUlaʻula, the West Maui Preservation Association, the Sierra Club Maui Group, and the Hui o Nā Wai ʻEhā also state conflicts over water. The concerns raised are that established IIFS are not being met, water continues to be diverted and prioritized for off stream uses while protected instream uses and Kuleana families do not have sufficient amounts of water.

MLP states that "great strides" have been made in maintenance of and operation of ditch system by HWSC and a relationship has been forged between HWSC and the residents/kuleana community in Honokōhau. The Commission should allow MLP and HWSC to "work with residents and kuleana users to come to reasonable understanding regarding the water." (Emphasis omitted)

KLM asserts that no conflicts exist

Earthjustice's and West Maui Preservation Association's written testimony outlines the historic and ongoing conflicts over water use in Ukumehame, Olowalu, Launiupoko, Kauaʻula, Kahoma, Kanahā, and Honokōhau while highlighting conflicts over surface and groundwater in the Launiupoko aquifer that are part of a proceeding before the Public Utilities Commission (PUC). In particular, residents of Launiupoko's gentlemen estates whose irrigation water is supplied by LIC are crying foul and complaining about the state of their lawns which has been compared to "a war zone,"[5] while Kuleana users are now forced to rely on the operation of plantation-era diversions for the delivery of their water for protected instream uses and public trust purposes such as traditional and customary kalo cultivation and domestic uses.

[3] Oral testimonies by the Guth and Chee ʻohana are not in support of designation because of issues obtaining permits. Staff would like to highlight that these permits are not water use permit, but stream diversion works permits, which both ʻohana are required to file after formal complaints regarding unpermitted stream diversions against them had been filed with the Commission.
[4] See oral and written testimony at public hearing.
[5] Hearing on Launiupoko Irrigation Co. Application for a General Rate Case Increase (PUC Docket No. 2020-0089) available at https://www.youtube.com/watch?v=GxSXlK2SELs

Earthjustice states that conflicts "have persisted for more than a century" and cites to the Hawai'i Supreme Court case *Horner v. Kumuli'ili'i,*[6] a 1895 lawsuit in which the largest sugar plantation in the Lahaina area, Pioneer Mill, sued 60 Native Hawaiians in West Maui over water claims involving Kaua'ula Valley.

Moreover, Earthjustice highlights in their written testimony that conflicts among surface water users have direct implications for ground water use as Maui DWS's drinking water supply is dependent on blending surface and ground water sources to meet current and future demand. "Management decisions that affect one source are likely to have consequences for others. […] [C]ompetition over declining water resources has already led to conflicts over water, and this will only worsen as demand increases and global warming limits the amount of water available," citing to a luxury homes real estate offering in Ukumehame that advertises a "Dedicated Freshwater Stream," which "produces water year round and provides the agricultural subdivision with a low-cost water source."

Maui Tomorrow's written testimony states that balance between protected instream and offstream "is not being achieved in West Maui, in part because such decisions are currently being made independently by self-interested water managers, some of whom repeatedly cut off water from kuleana users, whose needs should have top priority."

Staff response:

The community member's testimony resembles what staff has experienced in the numerous informal and formal complaints in the past decades. To holistically address these serious disputes, staff recommends designating the whole Lahaina ASA as a surface and ground water management area. The Hawaii Supreme Court held that the Commission is the "primary guardian of public rights under the trust. Haw. Const. art. XI, section 7. As such, the Commission must not relegate itself to the role of a mere "umpire passively calling balls and strikes for adversaries appearing before it," 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."[7]

Staff notes that CWRM is not a party in the proceeding before the PUC regarding Launiupoko Irrigation Company's (LIC), LLC request for a rate increase, but has provided extensive public comment to the PUC on LIC's off stream uses, notice to LIC of alleged violation of the IIFS for Kaua'ula stream, and a new pump installation at the Lahaina A/B skimming well (State Well No. 6-5240-002). See Appendix M of the FOF. Staff attended the PUC hearing and witnessed the Launiupoko resident's complaint over her lawn. At every site visit staff has recorded multiple properties in Launiupoko irrigating lawns during midday hours.

Staff recognizes that many kuleana users are lineal descendants of the original defendants in the *Horner v. Kumuli'ili'i* case.

Regarding MLP's testimony, staff does recognize an improvement in the management of the Honokohau ditch system under HWSC. Nevertheless, the "forged relationship" is rooted in decades of conflict and a formal complaint against MLP, which is in the beginning phases of being

[6] 10 Haw. 174 (1895).
[7] *Waiāhole I*, 94 Hawai'i at 143, 9 Pd.3 at 455.

resolved. Designation with its water use permit application provides for the reasonable and beneficial use of all users affected by the Honokōhau ditch system. Staff welcomes and encourages further collaboration between MLP, HWSC, DHHL, and the Honokōhau residents and kuleana users.

Regarding KLM's testimony, staff would note that a public fact gathering meeting was held on September 9, 2019 in which testimony was given that they grew up with Honokōwai Stream flowing in the valley where they grew kalo.[8] There are archeological sites in the valley and terracing that indicates kalo was grown in Honokōwai pre-plantation.

Enhanced protection of the resource and public trust uses

Community members voiced grave concern over the lack of available stream water and streamflow to cultivate loʻi kalo and to exercise traditional and customary Native Hawaiian practices that rely on water in its natural state, mauka to makai flow, and healthy native stream fauna.

With regards to groundwater, oral testimony of community members and the Hui Nā Mamo Aloha ʻĀina o Honokōhau, the West Maui Preservation Association, the Sierra Club Maui Group, the Hui o Nā Wai ʻEhā all stated concern over rising chloride levels in wells, lack of water use reporting of wells, and increased pumping while recharge is uncertain due to the climate crisis.

DHHL's written testimony outlined the benefits of designation for its beneficiaries; the increased legal protection of its surface and groundwater reservations by administrative rule and the requirement that water use permits are subject to the rights of DHHL. Additionally, DHHL's oral testimony also pointed out that the Commission's ability to regulate groundwater is limited to three factors, namely the existence/location of a well, its depth, and the amount of water that can be pumped.

Staff response:

WMA designation expands the tools available to the Commission to proactively protect water resources and regulate reasonable and beneficial uses of water, including public trust uses. The water use permit application process requires water users to disclose the purposes and amounts of their uses, which then are subject to the Commission's determination as to how to protect public trust uses affected by it.

The Hawaiʻi Supreme Court has recognized four public trust purposes; the maintenance of water in its natural state, domestic water uses, water for the Department of Hawaiian Home Lands, and water use in the exercise of traditional and customary Native Hawaiian rights.[29] Private commercial uses are not protected by the public trust and are subject to a "higher level of scrutiny."[310]

Staff recognizes that while the depth and instantaneous pump capacity (gallons per minute) are dictated by the Well Construction and Pump Installation Standards approved by the Commission,

[8] Compilation of Public Review Comments. https://files.hawaii.gov/dlnr/cwrm/ifsar/PR201904.pdf

[9] *See Kauai Springs, Inc. v. Planning Comm'n of Kaua'i*, 133 Hawai'i 141, 172, 324 P.3d 951, 982 (2014).
[10] Id.

management of well location and amount of water use on a daily basis (gallons per day) can only be regulated in a designated WMA.

Constitutional duty to protect before crisis develops

DHHL's written testimony highlights the Commission's constitutional duty to protect the public trust resource water before a crisis develops citing to the 1978 Constitutional Committee Report 77, pages 688-689, "[a]ccordingly, your Committee concluded that the Constitution should specify that the State holds the water resources in trust, with the responsibilities of a trustee to actively protect, control and regulate the development of water resources in the State. This concept implies not only the power to protect the resources but the responsibility to do so long before any crisis develops."

Earthjustice's written testimony echoes that the Commission has a constitutional duty to protect the public trust water resources *before* a crisis develops and highlights that designation would give the "Commission the tools necessary to balance requests for water and ensure that public trust purposes, such as water for kalo cultivation, have priority over private commercial uses, which do not enjoy the same protection."

Staff response:

Staff's research on the legislative history of the Water Code found a similar intent in the House Committee Report No. 348 on House Bill 35, that became Act 45 of the Session Laws of Hawai'i and established HRS Chapter 174C in 1987, "[t]o ensure that the availability of this precious resource will meet the present and future needs of the people, your Committee is of the opinion that the water code should serve as a tool and an incentive for planning the wise use of Hawaii's water resources, rather than as a water crisis and shortage management mechanism."

Scientifically proven facts

Wainee Land and Homes LLC ("Wainee") sent its written testimony on the day of the Commission meeting on January 18, 2022, at 11:27am. Wainee asserts that the Commission has a 'duty to designate based on "scientifically proven facts"' citing *In re Water Use Permit Applications*, 94 Hawai'i at 155, 9 Pd.3 at 467 (2000) "[T]he Code contemplates the designation of the standards based … on scientifically proven facts[.]"

LIC, Launiupoko Water Company, Olowalu Water Company, Kapalua Resort Association, AOAO Golf Villas and one individuals' written testimony allege that the proposed designation is "not based on scientifically proven fact" citing to the table provided in the January 18 staff submittal. The listed points offer no clarity of how the SY is determined, no field measurements of current development tunnel discharge, including double counting of discharge against streamflow and ground water, no publication of the authorized planned use table provided by MDWS and other permitted well capacity, and affects to neighboring aquifers due to permeability.

Staff response:

The quote deployed by Wainee refers to the setting of interim instream flow standards (IIFS) and not the designation of water management areas. The full quote is "[n]or does present inability to fulfill the instream use protection framework render the statute's directives any less mandatory. In

requiring the Commission to establish instream flow standards at an early planning stage, the Code contemplates the designation of the standards based not only on scientifically proven facts, but also on future predictions, generalized assumptions, and policy judgments." This sentence includes footnote 60 of the opinion which also points to the standard for designation that is actually applicable here "[…] cf. HRS § 174C–41(a) (requiring the Commission to designate water management areas "[w]hen it can be *reasonably determined*, after conducting scientific investigations and research, that water resources in an area may be threatened" (emphasis added)). […]"

The listed points in LIC's written testimony had been addressed prior to the public hearing in the Draft FOF published on April 21, 2022. The Draft FOF provided an updated table on the groundwater withdrawals, a table of the latest measurements of development tunnel discharge, the county's authorized planned use table, complete list of all wells in the Lahaina ASA and pending well applications that account for the "other permitted well capacity," and a description of the geology that explains the connectivity between aquifer systems. The Final FOF provides an in-depth explanation of why the development tunnel discharge is accounted for as groundwater.

Staff would also like to highlight that the written testimony provided by LIC was emailed as a template to various larger landowners and businesses prior to the public hearing to solicit testimony in opposition. LIC's attorney Cal Chipchase offered printouts of the template at the public hearing to community members to warn of "the unintended consequences." In contrast, staff acknowledges Earthjustice's oral testimony that "[t]he community is going into this process with eyes wide open, knowing the difficult process that lies ahead. Unlike the big Ag companies and development corporations, they can't afford to hire the expensive attorneys to represent them through this process. But they go forward anyway because they're tired. They're tired of the way our public trust water resources are being mismanaged to the benefit of off stream uses at their expense."

Precautionary Principle

Wainee denounced "the Commission's reliance on a "purported climate crisis" and "Precautionary Principle." MDWS also criticized the Commission's approach as "overzealous" and "too cautions" in its oral testimony.[4]

In contrast Earthjustice's testimony highlights that "the public trust and precautionary principle support presumptions and protections for the benefit of the ground and surface waters in this case. To the extent that scientific uncertainty exists, the Commission should err in favor of protecting the resource."

Many community members have expressed their concerns that there is not enough water resource left for future generations, the time to act is now, and applauded the Commission's proposal to designate both surface and ground water in the Lahaina ASA as water management areas.

Staff response:

The Commission's duties under the constitution and Water Code embody the precautionary principle, which holds that scientific uncertainty should not be a basis for postponing effective

measures to prevent environmental degradation.[5] Rather, the Commission as a trustee has a duty to take anticipatory action to prevent harm to public resources. "[A]t minimum, the absence of firm scientific proof should not tie the Commission's hands in adopting reasonable measures designed to further the public interest."[6] In endorsing the precautionary principle, the Hawai`i Supreme Court rejected the requirement of scientific certainty before acting to protect public trust purposes, noting that to do so will often allow for only reactive, not preventive regulation.

In terms of projections of future rainfall conditions, there are two methods in the published literature which provide a basis for our conclusion that there is a high likelihood of decreased rainfall in the Lahaina ASA: statistical downscaled modeling and dynamical downscaled modeling. These two approaches utilize very different methods, different base periods, and different end-of-century time frames, so their results are inherently different. The results of both methods for both the RCP 4.5 and RCP 8.5 climate pathways for seasonal and annual rainfall are provided by aquifer system. What is clear is that there is general agreement among methods and climate pathways that there will be a decline in annual rainfall in Ukumehame, Olowalu, and Launiupoko watersheds. Three out of four model-pathway combinations also predict a decline in annual rainfall in Kaua'ula, Kahoma, and Honokōwai watersheds. While the dynamical downscaling RCP 4.5 model result has small (e.g., <5%) increases in annual rainfall in these watersheds, the other models resulted in between 3% and 56% decreases in annual rainfall. While such results may appear alarming, they don't even consider that the historical distribution of rainfall has already shifted in recent years to fewer, more intense storm events and declining summer rainfall.[11] Recent data suggest that projected trends in tradewind inversion properties, mean surface temperature, relative humidity, and wind are likely to contribute to a reduction in tradewind inversion base height contributing to reduced dry season rainfall[12] that is likely to negatively affect groundwater recharge.

A majority of public testimony also support the proactive approach being taken here and that concerns over the length of time to get a water use permit should really be taking in context. Kekai Keahi states, "What I like to say is I hear some people talking about the hardship of acquiring one permit to get water and stuff like that and it's a long hard process, but a lot of people got to understand was a hard long process of 100 years of de-watering our streams and fighting to put their water back in the streams. That's a long hard process."

Takings issue

KLMC alleges that designation poses a "fundamental existential challenge" to its vested and entitled property rights because unexercised correlative and riparian rights are extinguished in water management areas.

[11] Frazier, A.G., and T.W. Giambelluca. 2017. Spatial trend analysis of Hawaiian rainfall from 1920 to 2012. International Journal of Climatology, 37(5): 2522-2531.
Luo, X., Wang, B., Frazier, A. G.,& Giambelluca, T. W. (2020). Distinguishing variability regimes of Hawaiian summer rainfall: Quasi-Biennial and interdecadal oscillations. Geophysical Research Letters, 47, e2020GL091260
[12] Xue, L., Wang, Y., Newman, A.J. *et al.* How will rainfall change over Hawai'i in the future? High-resolution regional climate simulation of the Hawaiian Islands. *Bull. of Atmos. Sci.& Technol.* **1,** 459–490 (2020). https://doi.org/10.1007/s42865-020-00022-5

Staff response:

The Hawai‘i Supreme Court has already adjudicated this issue in *Waiāhole I* and held that neither the enactment of the Water Code nor a denial of a water use permit application is an unconstitutional taking.[13] Correlative and riparian rights are usufructuary rights, meaning they do not describe an unqualified right of ownership, but a limited, situational right of *use*.[14] Pursuant to article XI, section 7 of the Hawai‘i constitution, Hawai‘i, like numerous other states, has enacted legislation, here the State Water Code, replacing common law rights with "administrative rights" based on a permit system in the interest of protection and maximum beneficial use of water resources. Only "*existing* correlative and riparian uses" are protected. Furthermore, the Water Code rests on the principle that the state holds all waters of the state in trust for the benefit of its people. The Court reasoned that "the reserved sovereign prerogatives over the waters of the state precludes the assertion of vested rights to water contrary to public trust purposes. This restriction preceded the formation of property rights in this jurisdiction; in other words, the right to absolute ownership of water exclusive of the public trust never accompanied the "bundle of rights" conferred in the Māhele."[15]

Relationship between Maui County's Water Use and Development Plan and Designation

Testimony by the Sierra Club Maui Group, Hui o Nā Wai ‘Ehā, DHHL, West Maui Preservation Association, Earthjustice and several individuals pointed out that the Maui Water Use and Development (WUDP) cannot function as a substitute for designation. There are four other private water companies besides MDWS whose well placement, pumping and water use the WUDP cannot regulate. Only the Commission has the authority to do so in a designated WMA.

Individual testimony shared that public participation in the planning process was for "damage control" to the impacts on public trust uses such as traditional and customary Native Hawaiian practices. Another concern is that MDWS cannot ensure the protection of protected public trust instream uses, especially when the County themselves is not compliant with the IIFS set for Kanahā and has not returned streamflow.

Maui DWS favors a collaborative approach among water purveyors to ensure sustainable water pumpage throughout the aquifer. Maui DWS asserts that its WUDP offers compromises to address community concerns and disputes and aligns with General Plan and the Community Plan to allocate water to planned land use. Additionally, Maui DWS is concerned over the "hasty approach" to designate before exploring solutions in WUDP, including to support collaboration between purveyors in lieu of "state control." Maui DWS suggest that CWRM should give proactive guidance to interpret and utilize available ground water models and monitoring data to ensure adequate pump distributions, asserting these are better tools to enhance and integrate management. MLP asks the Commission to take WUDP into consideration as it contains extensive

[13] See *Waiāhole I*, 94 Hawai‘i 97, 180-182, 9 P.3d, 409, 493-495.
[14] *Id.*
[15] *Waiāhole I*, 94 Hawai‘i at 182, 9 P.3d at 495 citing *Robinson*, 65 Haw. at 677, 658 P.2d at 312.

studies and reflects MDWS' experience and the effects of improved R-1 distribution prior to designation as the county is upgrading its recycled water system.

LIC's, Launiupoko Water Company's, Olowalu Water Company's, Kapalua Resort Association's, AOAO Golf Villas' and one individual's written testimony assert that the WUDP should be implemented and IIFS adopted for priority streams and subsequently enforced by the Commission. The Commission "can monitor and evaluate the changed circumstances. Until that time, regulating powers should remain with the County of Maui."

State Representative McKelvey's written testimony outlines that designation "will not erode the County's Department of Water Supply's plans for future water development but ensure the protection of public trust purposes and resources for future generations. […] In fact, designation of a water management area and its subsequent Water Use Permit Application process will allow for more public and private participation including notice and public hearing requirements." Moreover, State Representative McKelvey highlights that the argument "that additional manpower is needed by the Commission is a red herring because private-public water systems were requested by the County to provide demand projections and did not supply it only speaks to the need for complementary state oversight."

Staff response:

The Commission is *the primary guardian* of water resources in the State. The Hawai'i State constitution called for and the Code established an independent agency that is not also a water developer. The WUDP is a plan and guidance document unlike the enforceable water use permitting regime of the Water Code that ensures due process rights. The plan's purpose and focus are on the "use" of water while the Commission's constitutional duty requires a balance of protection with reasonable and beneficial use, while ensuring that public trust uses are met first. A compromise in the WUDP is not enforceable and does not ensure the protection of public trust purposes as required by the Water Code. The WUDP is complimentary to water management areas and the Code mandates them regardless of designation.

In its WUDP, Maui County also recognizes its limitations to regulate and plan for use of the other private water companies as these systems are not interconnected and each is independently operated and maintained, and is now seeking collaboration. "The private public water systems were requested to provide demand projections but most did not supply information."[16] MDWS's water use only accounts for 35 percent of the municipal groundwater use and 15 percent of municipal surface water use.[917] There are six municipal water systems using either surface water, groundwater or both in the Lahaina ASA, with "public water systems" as defined by the Department of Health (DOH) (systems serving more than 25 people or 15 service connections).

Moreover, designation and the water use permit application provides for an alternative source analysis and improved R-1 distribution will apply to all users.

Additionally, Hawaii Water Service Company, Launiupoko Irrigation Company, LLC (LIC), and Olowalu Water Company provide non-potable water to their respective service areas and are

[16] See Maui WUDP Pg. 76 https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335
[17] See Maui WUDP Pb. 34 https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335

regulated by the Public Utilities Commission (PUC). The non-potable water source is stream water. Staff has sent notices of alleged violation of the IIFS to LIC (Kauaʻula stream), Olowalu Water Company (Olowalu stream), and Maui DWS (Kanahā stream). These potential violations of the IIFSs will be addressed in forthcoming Commission meetings.

Moreover, the Commission has implemented IIFS for all perennial streams in West Maui, except for Honokōwai stream and monitored the changed circumstances the past four years since setting of the IIFS. The County as a water developer and purveyor does *not* have any regulatory powers over water resources pursuant to the constitution and the Water Code. The establishment of IIFS, well construction and pump installation permits, stream diversion and channel alteration permits are all administered by the Commission.

Staff is recommending designation. Staff have invited users and tried to cooperate with purveyors since at least 2011. Designation gives the Commission the ability to truly balance protection of resources with reasonable and beneficial uses of water. Designation is not a "worst case scenario" as perceived, but a proactive and comprehensive tool for stewardship.

Climate uncertainty and the Sustainable Yield

DHHL's oral testimony cautioned that the "sustainable yield (SY) as calculated is the maximum amount of groundwater that can sustainably be withdrawn for future withdrawal, if wells are optimally placed, if recharge is evenly distributed, if wells are at the same depth and pump at the same rate, and recharge does not change over time."[10] In the calculation of the current SY numbers for the aquifers in the Lahaina ASA climate change has not been considered as explicitly stated in Appendix F of the Water Resource and Protection Plan (WRPP) of 2019.

Maui DWS stated in its written testimony that "climate uncertainty, such as drought and decline in rainfall applies throughout aquifer system statewide and is not an isolated Lahaina phenomenon." Maui DWS poses that changes in groundwater recharge should be addressed in the calculations of the SY and Commission staff relied on 2015 and 2017 studies available at the time CWRM updated the WRPP and SY for each aquifer. Allegedly, CWRM "disregards" the wet climate published in the 2019 USGS study which projects an increase in groundwater recharge for Honokōhau, Honolua, Honokōwai, and Olowalu aquifer.

Staff response:

The most recent information provided by the USGS at the Commission's meeting on January 18, 2022 is preliminary, and has not been finalized. Current SY values provided in the FOF are derived from the update to the WRPP approved by the Commission and vetted by the public in a public meeting in 2019. The designation of a WMA must rely on the approved SY values and not some hypothetical potential SY that has yet to be approved. Further, as a precautionary principle policy, where multiple methods to estimate SY produce differing values, the Commission has generally approved the lowest value SY. While staff acknowledge that advances in modeling techniques, data acquisition, and computing power has increased our understanding of groundwater recharge, groundwater hydraulics, and the consequences of groundwater extraction on various aquifer properties, the current SY values are not being modified by this action.

The WRPP does recognize that further investigation in the rate of natural recharge for SY is needed and that Climate change and data from the last 25 years should also be included into recharge analysis. As referenced by U.S. Geological Survey's presentation at the Commission's meeting on January 18, 2022 Item A1, island-wide recharge is expected to decrease for the mid-century and dry-climate scenarios on the islands of Kaua'i, O'ahu, Moloka'i, Lana'i, Maui, and Hawai'i. Reduction in recharge in the Lahaina ASA range between 6.8-67.0 %.

The Commission is looking at climate uncertainty statewide, but the water demand in the Lahaina ASA is projected to increase, while the drought and decline in rainfall are already hampering the ability to meet the existing demand, e.g. the Mahinahina and Lahaina Water Treatment Facilities had to be shut down due to the lack of stream water in the winter month of March.[18] The Lahaina ASA has been in moderate to severe drought since June of 2021.[19] The Commission is taking a proactive approach in the Lahaina ASA to support its efforts to set IIFS, manage conflicts, and deal with drought. Similar focus takes place on other leeward coasts such as Keauhou, Wai'anae, and Southeast Kaua'i. Commission staff has reviewed the latest recharge values of the 2019 USGS study and no adjustment of the SY are warranted at this time, pending the upcoming USGS study that was presented in January. The wet climate scenario was considered, but the Commission is following the precautionary principle to ensure protection and the focus is on the dry climate scenarios.

Tunnel discharge is ground water withdrawal

County of Maui DWS questioned how tunnel discharge is accounted for in relation to sustainable yield, whether there is a "double counting" of discharge against streamflow and groundwater, and argues that counting 100% of tunnel discharge against sustainable yield is inconsistent with the WRPP. Other testifiers including Ron Valenta, Kapalua Resort Association, AOAO Golf Villas, LIC, LWC, OWC, and West Maui Land Company also provided similar testimony. On the other hand KLM, in response to the draft IFSAR developed for Honokōwai Stream, argued that tunnel discharge is ground water and should not be considered in amending the IIFS for Honokōwai Stream.[20]

Staff Response:

In the State of Hawai'i, development tunnel discharge is counted against sustainable yield. "Ground water means any water found beneath the surface of the earth, whether in perched supply, dike-confined, flowing, or percolating in underground channels or streams, under artesian pressure or not, or otherwise." HRS § 174C-3.

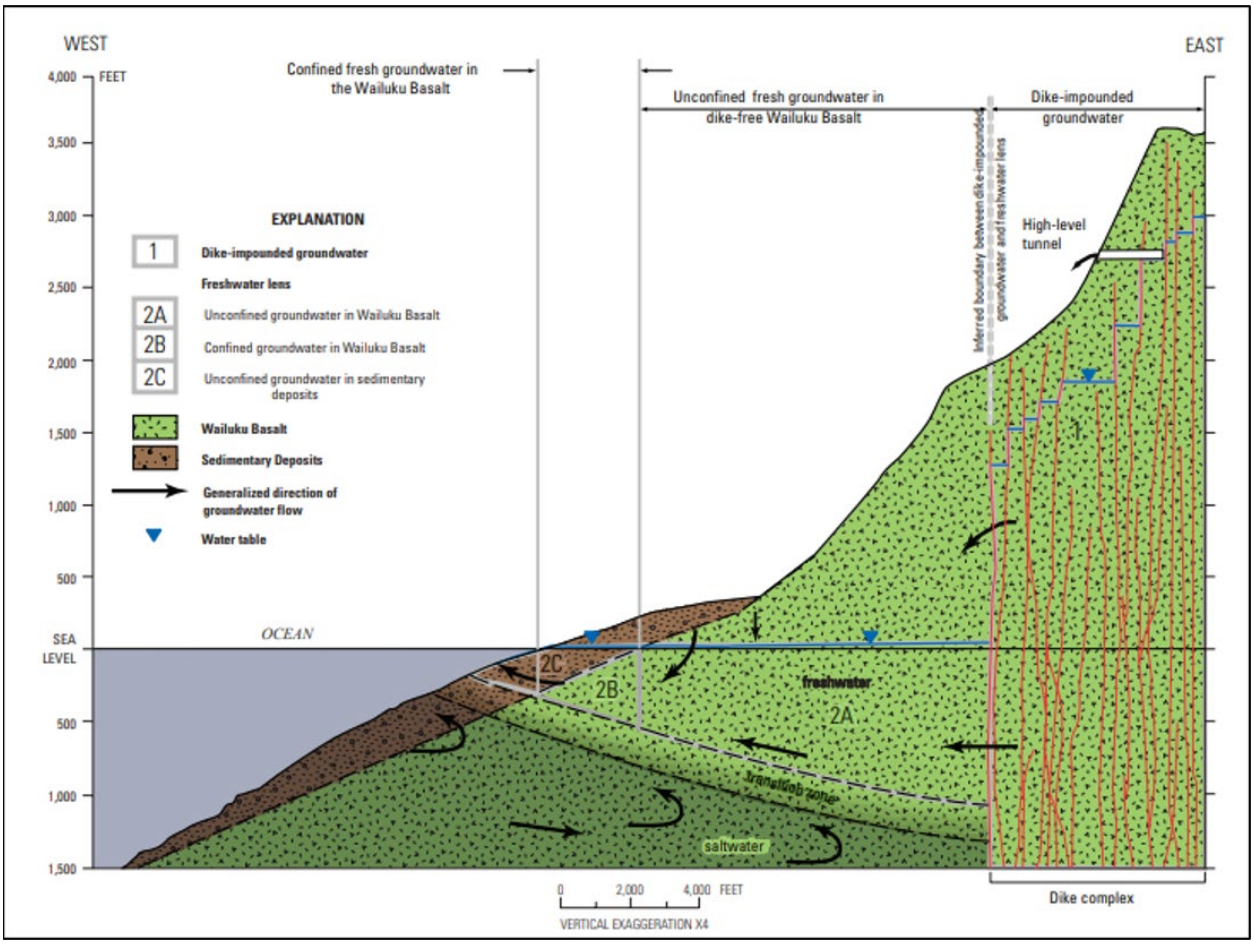
In the Lahaina ASA, development tunnel construction in dike-zones often included numerous laterals and pierced dozens, if not hundreds of dikes, as depicted by Stearns and MacDonald.[21] The construction of these tunnels increased the number of dike compartments hydrologically

[18] See public hearing oral testimony by Maui councilwoman Tamara Paltin.
[19] See https://droughtmonitor.unl.edu/Maps/Animations.aspx and DLNR News Release from March 8, 2022 https://dlnr.hawaii.gov/blog/2022/03/08/nr22-036/
[20] https://files.hawaii.gov/dlnr/cwrm/publishedreports/PR201904.pdf
[21] Stearns, H.T., MacDonald, G.A. 1942. Geology and Ground-water Resources of the Island of Maui, Hawaii. Bulletin of the Division of Hydrography, 7. Figure 34, p. 197

connected to the stream channel, thus increasing the discharge of groundwater into streams. While a portion of the water discharged from high-elevation groundwater sources via development tunnels would have naturally contributed to streamflow as spring sources, some of it is likely to have naturally recharged the basal aquifer as well. If the stream was permitted to flow past the existing diversion and beyond the zone of high-elevation groundwater, it would naturally recharge the basal aquifer. Therefore, the diversion of the combined surface and groundwater flows off-stream via irrigation systems also reduces basal groundwater recharge. The challenge is that most owners of development tunnels fail to report their monthly flows to the Commission as required by statute.

Tunnels in the Honokōhau, Honokōwai, and Launiupoko Aquifer Systems tap into high level ground water that would otherwise discharge naturally as spring sources or discharge into the basal lens. As such, these tunnels, as developed sources of ground water, are counted against sustainable yield.

Figure 11. Lahaina Aquifer Sector High Level and Basal Groundwater Movement



Need for proactive, comprehensive, and integrated approach (Lessons learned)

Written testimony by Earthjustice highlights that freshwater resources in the Lahaina ASA will "only grow scarcer as climate impacts worsen, creating a dire situation if the Commission does not take the necessary steps to proactively and comprehensively manage these precious resources now," and cites the Hawai'i Supreme Court case ruling in *Ko'olau Ag* that the Commission, by virtue of its agency expertise, is "certainly in a better position than the courts to evaluate scientific investigations and research to determine whether a water resource may be threatened by existing or proposed withdrawals and diversions of water."

Testimony by the Sierra Club Maui, Hui o Nā Wai 'Ehā, DHHL, West Maui Preservation Association and several individuals lauded the Commission's comprehensive approach and intent to designate both surface and ground water WMA for all aquifer and hydrologic units in the Lahaina ASA.

The Sierra Club Maui Group highlighted that only designating Honokōwai and Launiupoko Aquifer would not protect the aquifer because there are no geographical barriers in the Lahaina ASA and the aquifer is a thin as it does not hold recharge in place as the 'Īao aquifer.[22]

DHHL's oral testimony specifically provided an example for the need to designate adjacent aquifers; in 2004, shortly after the Commission decided against the designation of the Waihe'e aquifer, which borders the designated 'Īao aquifer, a new well construction permit application was received with the well location being right next to the aquifer boundary.[23]

Maui Tomorrow's written testimony urges the Commission to "put an end to the current situation, wherein the self-interested decisions of individual water managers often ignore the wider impact on underlying aquifers, as well as the relationship of ground water with the streams."

Staff response:

At the 2004 February Commission meeting, the Commission rescinded automatic triggers for the designation of Waihe'e aquifer set in November 2002 and limited the amount of MDWS's pumpage from the Waihe'e aquifer from 4.5 mgd to 4 mgd via a memorandum of agreement (MOA)[24], which then MDWS Deputy Director Jeff Pearson was a part of.[25] Only three months after the Commission's attempt to limit the amount withdrawn from Waihe'e aquifer, the Commission was obligated to approve the new well construction and pump installation permit (WCPIP) of Koolau Cattle Company (Randy Betsill), Waihee Equestrian well (Well No. 5731-06), at its May 2004 meeting because the Waihe'e aquifer was not a designated WMA and the Commission did not have authority to deny this permit request due to correlative rights of the applicant.[26] In the same year Koolau Cattle Company applied for an additional WCPIP, Waihe'e

[22] Oral testimony by Lucienne DeNaie on behalf of the Sierra Club Maui Group.
[23] Oral testimony by Dr. Jonathan Likeke Scheuer on behalf of DHHL.
[24] While minutes reflect an MOA, staff have been unable to locate any MOA document in CWRM files.
[25] *See* Minutes for CWRM Meeting, February 18, 2004, at pages 3-7, https://files.hawaii.gov/dlnr/cwrm/minute/2004/mn20040218.pdf
[26] *See* Minutes for CWRM Meeting, May 19, 2004, at pages 5-8, https://files.hawaii.gov/dlnr/cwrm/minute/2004/mn20040519.pdf

Equestrian II well (Well No. 5731-07). This permit did not come before the Commission due to the Commission's delegation of WCPIP to the chairperson in 1997 to issue WCPIP administratively; the first application was brought to Commission to highlight issues with MDWS MOA and the recent history of the Waiheʻe aquifer system. To date four additional wells have been drilled in the Waiheʻe aquifer with two pending completion approval.

Staff recognizes the limitations from only designating the ʻĪao aquifer as a *"lesson learned"* and strongly recommends including adjacent aquifers for proactive and comprehensive management, especially due to decline in recharge because of the climate crisis.

Additionally, staff would like to highlight that the ditch systems in the Lahaina ASA cross multiple aquifer systems and surface water hydrologic units. In *Waiāhole I*, the Hawaiʻi Supreme Court also held that the Commission can consolidate the regulation of a single system because it comports with the Commission's function of comprehensive water planning and management.[27] The Court ruled that the areas covered by the ditch system are to be considered hydrologically controllable irrespective of hydrologic units under HRS § 174C-50 (h) which deems uses between existing users as competing when water is drawn from a hydrologically controllable area.[28]

Water Shortage

Maui DWS cautions that once Maui DWS reduces diversions from Kanahā stream, where Maui DWS admits to be in violation of the stream's IIFS, there will no longer be a reliable capacity to serve additional customers on the Maui DWS Lahaina system. This would trigger a water shortage declaration per Maui County Code and constitute a de facto building moratorium per Maui DWS administrative rules. Maui DWS is concerned that "[c]ompleting construction of new well sites currently in the works will be further delayed."

Maui Tomorrow's written testimony states that "[d]esignation will incentivize aggressive conservation measures, such as paying for the retrofitting of inefficient water fixtures, paying for low water use landscaping, wastewater reclamation, and other measures. These actions should be a prerequisite for non-instream uses."

Staff response:

Staff notes that Maui DWS has not filed a well construction permit with the Commission for a Maui DWS well in the Launiupoko aquifer and hence "completing" construction of new well sites was not delayed by the Commission or proposed designation. Maui DWS had not acted on its owned funded USGS study on groundwater availability in the Lahaina aquifer in 2012. Maui DWS recognized in its own testimony on the proposed Kanahā IIFS the needed timeframe for well construction in Launiupoko and potential infrastructure updates to connect the Napili-Honokowai subsystem with the Lahaina subsystem.[29]

[27] *Waiāhole I*, 94 Hawaiʻi at 174, 9 P.3d. at 486.
[28] Id.
[29] Maui DWS written testimony November 5, 2018 in PR-2018-09 Compilation of Public Review Comments https://files.hawaii.gov/dlnr.cwrm/ifsar/PR201809.pdf

Alternatively, the staff recognizes that the Commission could amend the IIFS for Kanahā stream. Though the lack of available source emphasizes the need for designation to regulate existing uses with the thorough alternative use analysis of the water use permit application to ensure public trust purpose's needs are met. The alternative use of R-1 is still an option to offset millions of gallons of potable water.

In the Launiupoko aquifer the Commission has received a multitude of individual well permits for irrigation and a proposed new pump installation for an unused skimming well, with a proposed use of 1 million gallons per day (mgd). Designation will ensure that there is enough groundwater resource available for a Maui DWS well. Additionally, designation does resolve obstacles. If uses are not reasonable and beneficial, the Commission can require reduction in use, which would put less strain on existing supplies.

E hoʻi ka nani

West Maui Preservation Association's oral testimony highlighted Maui Komohana's (West Maui) rich cultural history. E hoʻi ka nani i Mokuʻula (Return the beauty to Mokuʻula) is the first in the series of mele (song) first published in Hawaiian newspapers in the 1860's that describes sacred springs, fishponds and Hawaiian royalty at Mokuʻula in Lahaina. Mokuʻula has been covered up because the water resources were depleted. Designation can be a tool to return to this beauty and carve out a better future by "extolling the past through traditional and customary Native Hawaiian practices." [30] Kūpuna have managed surface and ground water comprehensively without drawing artificial lines and boundaries.

Blossom Feiteira provided oral testimony in February 2022 that spoke of the importance the Mokuhinia complex as a vital cultural resource, registered historic site, and a site that the County and community have committed to restoring, but that cannot happen without maintaining groundwater flow in the aquifer. She also highlighted the abundance of limu and nearshore resources that rely on fresh water discharge.[31]

Staff response:

We appreciate sharing of traditional ecological knowledge and lived experiences as a data set. This data will assist the Commission in decision making and helps to ensure that the Commission is meeting its duty of protecting traditional and customary Native Hawaiian rights under the State Constitution and HRS § 174C-101 "Native Hawaiian water rights".

LEGAL AUTHORITY:

Hawaiʻi Constitution and Public Trust

The Hawaiʻi State Constitution mandates the state to "conserve and protect Hawaii's natural beauty and all natural resources [...] and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State." Article XI, Section 1. Additionally, the State "has an obligation to protect, control,

[30] Oral testimony by Uʻilani Tanigawa Lum on behalf of the West Maui Preservation Association.
[31] Oral testimony by Blossom Feiteira at February 2022 Commission meeting.

and regulate the use of Hawaii's water resources for the benefit of its people." Article XI, Section 7.

Article XII, Section 7 proclaims: "The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the rights of the State to regulate such rights."

The Hawai'i Supreme Court examined applicable Constitutional provisions and the Water Code in a series of cases, which clarified the Commission's kuleana in upholding the public trust. The public trust imposes "a dual mandate of 1) protection and 2) maximum reasonable and beneficial use."[32] This establishes an "affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible."[33] The Commission is the "primary guardian of public rights under the trust." Haw. Const. art. XI, Section 7. The Commission, therefore, must not relegate itself to the role of a mere "umpire passively calling balls and strikes for adversaries appearing before it," 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."[34]

The Court has identified a handful of public trust purposes: environmental protection (water in its natural state); traditional and customary Native Hawaiian rights; appurtenant rights; domestic water uses; and reservations for the Department of Hawaiian Home Lands.[35] Public trust purposes have priority over private commercial uses, which do not enjoy the same protection. The public trust dictates that "any balancing between public and private purposes must begin with a presumption in favor of public use, access, and enjoyment" and "establishes use consistent with trust purposes as the norm or 'default' condition."[36] After all, "[u]nder the public trust, the state has both the authority and duty to preserve the rights of present and future generations in the waters of the state."[37] The public trust also requires planning and decision making from a global, long-term perspective.[38]

The public trust also prescribes a higher level of scrutiny for private commercial uses.[39] The Commission, therefore, must closely examine requests to use public resources for private gain to ensure that the public's interest in the resource is fully protected.[40]

At bottom, the public trust provides independent authority to guide the Commission in fulfilling its mandates. The Hawai'i Supreme Court explained:

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[32] *In re Water Use Permit Applications,* 94 Hawai'i, 97, 139, 9 Pd.3, 409, 451 (2000). (*Waiāhole I*)
[33] *Id.* at 141, 9 P.3d at 453.
[34] *Id.* at 143, 9 Pd.3 at 455.
[35] *Id.* at 137-39, 9 P.3d at 449-51; *In re Wai'ola o Moloka'i*, 103 Hawai'i 401, 431, 83 P.3d 664, 694 (2004). (*Wai'ola)*
[36] *Waiāhole I*, 94 Hawai'i at 142, 9 P.3d at 454.
[37] *Id.* at 141, 9 P.3d at 453.
[38] *Id.* at 143, 9 Pd.3 at 455.
[39] *Id.* at 142, 9 P.3d at 454.
[40] *See id.*

> "The Code and its implementing agency, the Commission, do not override the public trust doctrine or render it superfluous. Even with the enactment and any future development of the Code, the doctrine continues to inform the Code's interpretation, define its permissible "outer limits," and justify its existence. To this end, although we regard the public trust and Code as sharing similar core principles, we hold that the Code does not supplant the protections of the public trust doctrine."[41]

Precautionary Principle

The Commission's duties under the constitution and State Water Code embody the precautionary principle, which holds that scientific uncertainty "should not be a basis for postponing effective measures to prevent environmental degradation." [42] Rather, the Commission as a trustee has a duty to take anticipatory action to prevent harm to public resources. "[A]t minimum, the absence of firm scientific proof should not tie the Commission's hands in adopting reasonable measures designed to further the public interest."[43] In endorsing the precautionary principle, the Hawai'i Supreme Court rejected the requirement of scientific certainty before acting to protect public trust purposes, noting that to do so will often allow for only reactive, not preventive regulation.

State Water Code

The State Water Code (Code), HRS chapter 174C, part IV, Regulation of Water Use, provides that the Commission *shall* designate an area once a *reasonable determination* is made – based on scientific investigation and research – that water resources in an area are threatened by existing or proposed withdrawals or diversions of water. Once that determination is made, the Commission shall designate the area for the purpose of establishing administrative control over the withdrawals and diversions of ground and surface waters in the area to ensure reasonable-beneficial use of the water resources in the public interest. HRS § 174C-41(a). (Emphasis added).

There are eight ground water criteria and three surface water criteria that the Commission must consider. HHRS §§ 174C-44, -45.

Case Law on Designation

The Hawai'i Supreme Court held in *Ko'olau Ag.* that the Commission's discretion to designate a water management area is broad.[44] The presence of just one criterion is sufficient to designate. "Regardless of how many or how few of the criteria are applicable, the Commission shall designate an area as a [water management area] when it can be reasonably determined that the water

[41] *Id.* at 133, 9 P.3d at 445.
[42] *Waiāhole I*, 94 Hawai'i at 154, 9 P.3d at 466.
[43] *Id.* at 155, 9 P.3d at 467.
[44] *Ko'olau Agricultural Co., Ltd. v. Comm'n on Water Res. Mgmt*, 83 Hawai'i 484, 490, 927 P.2d 1367, 1373 (1996) ("*Ko'olau Ag*.").

resources in an area may be threatened by existing or proposed withdrawals or diversions of water."[45]

Additionally, the Court further noted that water management area designations do not affect the interests of any potential water users; the impact of such a designation is only that the user's water source is subject to the Commission's regulation, which does not, in and of itself, affect the user's water rights.[46] Hence, the Court held that there is no judicial review of the Commission's decision to designate aquifers as water management areas "because the rights of individual water users are fully protected in the permitting process."[47]

In *Waiāhole I*, the Court acknowledged the direct interrelationship between ground and surface waters and held that the designation of Windward Oʻahu as a ground water management area subjected both ground and surface water diversions from the designated area to the statutory permit requirement.[48]

The Court also held that the Commission could consolidate the regulation of a single ditch system because it comports with the Commission's function of comprehensive water planning and management.[49] The Court ruled that the areas covered by the ditch system are to be considered hydrologically controllable irrespective of hydrologic units under HRS § 174C-50 (h) which deems uses between existing users as competing when water is drawn from a hydrologically controllable area.[50]

ANALYSIS

Constitutional Duty

Even though the Commission fulfilled its primary duty to establish interim IFS in the Lahaina ASA, public trust uses are threatened or remain unfulfilled. For example, community members voiced grave concern over the lack of available stream water and streamflow to cultivate loʻi kalo and to exercise traditional and customary Native Hawaiian practices that rely on water in its natural state, mauka to makai flow, and healthy native stream fauna.

The non-potable water needs of 2 mgd for current and foreseeable development and use of Hawaiian Home Lands as set forth in section 221 of the Hawaiian Homes Commission Act may be impacted by other off-stream non-potable uses in Kapalua and Kāʻanapali.

DHHL's written testimony outlined the benefits of designation for its beneficiaries; the increased legal protection of its surface and groundwater reservations by administrative rule and the requirement that water use permits are subject to the rights of DHHL. Additionally, DHHL's oral testimony also pointed out that the Commission's ability to regulate groundwater in non-water management areas is limited to three factors, namely the existence/location of a well, its depth,

[45] *Koʻolau Ag.*, 83 Hawaiʻi at 490-91, 927 P.2d at 1373-74
[46] *Koʻolau Ag*., 83 Hawaiʻi at 493, 927 P.2d at 1376.
[47] *Koʻolau Ag*., 83 Hawaiʻi at 494, 927 P.2d at 1377.
[48] *Waiāhole I*, 94 Hawaiʻi at 173, 9 Pd.3 at 485.
[49] *Id.* at 174, 9 P.3d. at 486.
[50] *Id*.

and the amount of water that can be pumped. While the depth and instantaneous pump capacity (gallons per minute) are dictated by the Well Construction and Pump Installation Standards approved by the Commission, management of well location and amount of water use on a daily basis (gallons per day) can only be regulated in a designated WMA.

Designation expands the tools available to the Commission to proactively protect water resources and regulate reasonable and beneficial uses of water, including public trust purposes. The water use permit application process requires water users to disclose the purposes and amounts of their uses, which then are subject to the Commission's determination as to how to protect public trust uses affected by it.

Moreover, Maui DWS's assertion that its WUDP should substitute for designation cannot account for the fact that the Commission is the primary guardian of the public trust resources and uses and only the Commission has the authority to regulate well placement, pumping and water use. A WUDP is a plan and guidance document unlike the enforceable water use permitting regime of the Water Code that ensures due process rights. In its WUDP, Maui County also recognizes its limitations to regulate and plan for use of the other private water companies as these systems are not interconnected and each is independently operated and maintained.[51] "The private public water systems were requested to provide demand projections but most did not supply information."[52] Maui DWS's water use only accounts for 35 percent of the municipal groundwater use and 15 percent of municipal surface water use.[53] There are six municipal water systems using either surface water, groundwater or both in the Lahaina ASA, with "public water systems" as defined by the Department of Health (DOH) (systems serving more than 25 people or 15 service connections). Additionally, public testimony raised the concern that Maui DWS cannot ensure the protection of protected public trust instream uses, especially when the County themselves is not compliant with the interim IFS set for Kanahā Stream and has not returned streamflow.

Precautionary Principle

DHHL's written testimony highlights the Commission's constitutional duty to protect to protect water as a public trust resource before a crisis develops citing to the 1978 Constitutional Committee Report 77, pages 688-689, "[a]ccordingly, your Committee concluded that the Constitution should specify that the State holds the water resources in trust, with the responsibilities of a trustee to actively protect, control and regulate the development of water resources in the State. This concept implies not only the power to protect the resources but the responsibility to do so long before any crisis develops." This comports with research on the legislative history of the Water Code found a similar intent in the House Committee Report No. 348 on House Bill 35, that became Act 45 of the Session Laws of Hawai'i and established HRS Chapter 174C in 1987, "[t]o ensure that the availability of this precious resource will meet the present and future needs of the people, your Committee is of the opinion that the water code should serve as a tool and an incentive for planning the wise use of Hawaii's water resources, rather than as a water crisis and shortage management mechanism."

[51] *See* Maui WUDP Draft under 19.5.1. Water Use by Type, Municipal Use at page 34 of the Lahaina ASA.
[52] Maui WUDP Draft under 19.6.4 Population Growth Based Water Demand Projections (20-Year), Private Public Water Systems Demand Projections at page 63 of the Lahaina ASA.
[53] Maui WUDP Draft under 19.5.1. Water Use by Type, Municipal Use at page 34 of the Lahaina ASA.

Additionally, DHHL's oral testimony cautioned that the "sustainable yield (SY) as calculated is the maximum amount of groundwater that can sustainably be withdrawn for future withdrawal, if wells are optimally placed, if recharge is evenly distributed, if wells are at the same depth and pump at the same rate, and recharge does not change over time." In the calculation of the current SY numbers for the aquifers in the Lahaina ASA climate change has not been considered. The WRPP does recognize that further investigation in the rate of natural recharge for SY is needed. "Climate change and data from the last 25 years should also be included into recharge analysis."[54]

Given the data limitations, the time to act and take preventive measures to guarantee resource availability for future generations is now. It can be reasonably determined that there may a risk for the resource and the Precautionary Principle guides the Commission to err on the side of caution and to protect the resource with the enhanced management tools of the designation of a surface and ground water management area designation. Designation of a water management area will also require analysis and use of alternative water sources for non-potable uses, which may lead to a faster adoption of R-1 water use and infrastructure expansion.

Surface Water Designation Criteria

Below are the criteria to be considered in designating an area for surface water use regulation along with staff discussion and conclusion.

> HRS § 174C-45 (1) *Whether regulation is necessary to preserve the diminishing surface water supply for future needs, as evidenced by excessively declining surface water levels, not related to rainfall variations, or increasing or proposed diversions of surface waters to levels which may detrimentally affect existing instream uses or prior existing off stream uses. HRS § 174C-45 (1).*

Discussion:

Subsection (1) can be divided into two parts. The first part deals with the situation where there is evidence of excessively declining surface water levels not related to rainfall variations. The second part concerns increasing or proposed diversions of surface water levels which may detrimentally affect existing instream uses or prior existing off stream uses. "Existing instream uses", for the Lahaina ASA, would be those instream uses existing when the interim instream flow standards were set.

As referenced by U.S. Geological Survey's presentation at the Commission's meeting on January 18, 2022 Item A1, island-wide recharge is expected to decrease for the mid-century and dry-climate scenarios on the islands of Kauaʻi, Oahu, Molokaʻi, Lānaʻi, Maui, and Hawaiʻi. Reduction in recharge in the Lahaina ASA range between 6.8-67.0%. The recharge is comprised of rainfall. The rainfall data for the past decades documents a constant decline of rainfall, which is not just a rainfall variation. Thus, the surface water levels are excessively declining.

[54] Appendix F, WRPP (2019) at page 68.

As for the second part of HRS § 174C-45 (1) there are no increasing or proposed diversions of surface water present in the whole Lahaina ASA. The Commission has set numeric interim IFS for Honokōhau, Honolua, Kahoma, Kanahā, Kauaʻula, Launiupoko, Olowalu, and Ukumehame stream, which lowered the amount that was previously diverted, except for Launiupoko streams.

Conclusion:

Criterion are met.

HRS § 174C-45 (2) *Whether the diversions of stream waters are reducing the capacity of the stream to assimilate pollutants to an extent which adversely affects public health or existing instream uses. HRS § 174C-45 (2).*

Discussion:

DOH did not provide any comments related to this criterion in their response to CWRM's consultation request.

Conclusion:

The Commission staff cannot make a determination if this criterion is met.

HRS § 174C-45 (3) *Serious disputes respecting the use of surface water resources are occurring. HRS § 174C-45 (3).*

Discussion:

Conflicts among water users, stakeholders, and the protection of instream values have persisted for generations. See, e.g., *Horner v. Kumuliʻiliʻi*, 10 Haw. 174 (1895). Starting in 2018, the Commission amended interim instream flow standards for nine perennial streams in the Lahaina District. However, subsequent reductions in the availability of water to meet off-stream demand continue to strain existing water uses, including kuleana tenants and traditional and customary practitioners, and have led to additional conflicts. A number of informal (e.g., phone calls, letters, emails) and five formal complaints have been filed with the Commission regarding the lack of streamflow, the waste of diverted surface water, the delivery of water, and issues with diversion management from Honokōhau, Honokōwai, Kahoma, Kanahā, Kauaʻula, Launiupoko, Olowalu, and Ukumehame since 2018. In 2021 alone, Commission staff have fielded complaints for Honokōhau, Kahoma, Kanahā, Kauaʻula, Olowalu, and Ukumehame streams. The latest formal complaint was filed in December 2021 regarding waste of water in Kauaʻula.

At the Commission's January and February 2022 meetings, the written and oral testimony of community members in the Lahaina ASA unanimously referenced serious disputes over water and requested designation as proactive management. Testimony by the Hui Nā Mamo Aloha ʻĀina o Honokōhau, Nā Pāpaʻi Wawae ʻUlaʻula, the West Maui Preservation Association, the Sierra Club Maui Group, and the Hui o Nā Wai ʻEhā also evidence conflicts over water. The concerns raised include that established IIFS are not being met, water continues to be diverted and prioritized for

off stream uses while protected instream uses and Kuleana families do not have sufficient amounts of water.

West Maui Preservation Association's written testimony outlined the historic and ongoing conflicts over water use in Ukumehame, Olowalu, Launiupoko, Kauaʻula, Kahoma, Kanahā, and Honokōhau while highlighting conflicts over surface and groundwater in the Launiupoko Aquifer that are part of a Docket before the Public Utilities Commission (PUC). In this Docket, LIC requests a rate increase to offset the cost of pumping groundwater, which LIC asserts is required to substitute the reduced available surface water for offstream uses. The Commission is not a party in the Docket, but staff has provided extensive public comment to the PUC on LIC's off stream uses, staff's data that indicate LIC's non-compliance with the IIFS for Kauaʻula stream and Notice of Alleged Violation (NOAV), and a new pump installation at the Lahaina A/B skimming well (State Well No. 6-5240-002).

Of the seven surface water hydrologic units in West Maui, six support loʻi kalo production downstream of former plantation diversions, and many of these streams provide excellent habitat for a number of native aquatic fauna.

In Ukumehame, the original ʻauwai was replaced by the plantation diversion and open ditch system, which has now been converted to pipelines. Two loʻi complexes are currently reliant on the operation of the plantation diversion for the delivery for water. In Olowalu, 12 loʻi managed by Olowalu Cultural Preserve are reliant on the operation of the former plantation diversion for the delivery of water. In Kauaʻula, the former Piʻilani ʻauwai was replaced by Kauaʻula Ditch and the hydropower penstock. Kuleana users who used the ʻauwai are now reliant on the operation of the plantation diversion for the delivery of water. Cultural practices along Kahoma and Kanahā streams are impacted by the operation of former plantation diversions which, despite the establishment of interim IFS, continue to impede cultural practices. As previously discussed, Kanahā stream is relied upon by the Maui DWS as a source of drinking water supply, while lands riparian to the stream continue to support agriculture. These uses are in direct conflict with the maintenance of stream flow for natural and cultural values. The former plantation diversions in Honokōwai remove water in excess of the current agricultural needs, impeding traditional and customary practices downstream. In Honokōhau, the former plantation diversion also removes water in excess of non-instream uses, with negative impacts to natural, cultural, and domestic uses in the stream. In some hydrologic units, households rely on the stream for domestic uses as well.

The latest conflict over LIC's operation of the diversion in Kauaʻula Stream that Kuleana tenants rely on as their only water source for their domestic uses and T&C practices was heard at the Commission April 19, 2022 meeting.

Conclusion:

Criteria is met.

Ground Water Designation Criteria

Below are the criteria to be considered in designating an area for ground water use regulation along with staff discussion and conclusion.

> HRS § 174C-44 (1) *Whether an increase in water use or authorized planned use may cause the maximum rate of withdrawal from the ground water source to reach ninety percent of the sustainable yield. HRS § 174C-44 (1).*

Discussion:

Current and authorized planned uses of the Honokōwai and Launiupoko Aquifer Systems either exceed or approach 90% of sustainable yields and threaten the aquifer due to saltwater intrusion of the freshwater lens.

Conclusion:

> **Criteria is met.**

> HRS § 174C-44 (2) *There is an actual or threatened water quality degradation as determined by the department of health. HRS § 174C-44 (2).*

Discussion:

Per consultation with the DOH, there are water quality issues within the Lahaina Aquifer Sector, but overwhelmingly these are problems from isolated legacy contaminants, including:

- 1-2-Dibromo-3-Chloropropane (DBCP)
- Ethylene Dibromide (EDB)
- 1-2-3-Trichloropropane (TCP)
- Hexachlorocyclopentadiene
- Carbon Tetrachloride
- Tetrachloroethylene (PCE)

Per DOH, these contaminants will not be made worse by increased groundwater withdrawals or water diversions. On the other hand, further development of West Maui may cause an increase in groundwater concentration of Nitrate and chlorides. DOH's assessment is that this criterion is only met for Honokōwai Aquifer System.

While DOH's analysis only indicates Honokōwai Aquifer System is approaching the maximum that can be sustained without degradation of water resources, Commission staff believe it's prudent to still manage water as a sector and larger region. Wells will need to shift north and south of Honokōwai that may have further water quality impacts on these adjacent aquifers, with the possible additional discovery of legacy contaminants and increases in chlorides. Commission staff are also concerned that DOH's analysis only attributed rises in chlorides do to increase pumpage due to droughts and water shortage, but staff are already seeing a shift to groundwater wells sources, especially in Launiupoko, to meet non-potable needs as IIFS are updated throughout the region.

Conclusion:

Criteria is met.

HRS § 174C-44 (3) *Whether regulation is necessary to preserve the diminishing ground water supply for future needs, as evidenced by excessively declining ground water levels. HRS § 174C-44 (3)*

Discussion:

As referenced by U.S. Geological Survey's presentation at the Commission's meeting on January 18, 2022 Item A1, island-wide recharge is expected to decrease for the mid-century and dry-climate scenarios on the islands of Kauaʻi, Oahu, Molokaʻi, Lānaʻi, Maui, and Hawaiʻi. Reduction in recharge in the Lahaina ASA range between 6.8-67.0 %.

This reduction in recharge will most likely lead to diminishing ground water supply for future needs. Currently, there is no evidence for excessively declining ground water levels, but there may be a rise in the transition zone. The data is limited due to the fact that the Commission only has one deep monitoring well in the Lahaina ASA.

Conclusion:

Criteria is met.

HRS § 174C-44 (4) *Whether the rates, times, spatial patterns, or depths of existing withdrawals of ground water are endangering the stability or optimum development of the ground water body due to upconing or encroachment of saltwater. HRS § 174C-44 (4)*

Discussion:

There is evidence that the current withdrawal rates of some wells are causing chlorides to increase from their initial chlorides when the wells were first developed. Maui DWS concedes that chlorides in its Kanaha wells 1 and 2 "directly respond to changes in pumpage" and attempts to explain the increased chloride levels of its well in the Honolua aquifer with the "expectation" to increase as plantation and agricultural irrigation ceased. Most of these wells are spatially located in areas that pull water from the thin basal aquifer that sits above salt water, so the increased chlorides indicate some level of upconing and encroachment of saltwater. As indicated in the reported chloride data relative to pumpage, the time of pumpage is managed to an extent to manage increases in chlorides.

Conclusion:

The Commission staff cannot make a determination if this criterion is met.

HRS § 174C-44 (5) *Whether the chloride contents of existing wells are increasing to levels which materially reduce the value of their existing uses. HRS § 174C-44 (5)*

Discussion:

Based on the 19 wells reporting chlorides in the Honolua, Honokōwai, and Launiupoko hydrologic units, the chloride content of some of these existing wells has increased to levels, surpassing 250 ppm, the maximum for safe drinking water as determined by the US EPA and Department of Health. This has led wells to be either discontinued completely or the pumping rate managed to such a degree as to materially reduce the value of their existing use.

Conclusion:

Criteria is met.

HRS § 174C-44 (6) *Whether excessive preventable waste of ground water is occurring. HRS § 174C-44 (6)*

Discussion:

At this time, investigations are ongoing whether there has been excessive waste.

Conclusion:

Criteria not met.

HRS § 174C-44 (7) *Serious disputes respecting the use of ground water resources are occurring. HRS § 174C-44 (7)*

Discussion:

Conflicts among surface water users also has direct implications for groundwater use. The Maui DWS drinking water supply is dependent on blending surface water and groundwater sources to meet current and future demand as well as limiting the chloride content of water supply to potable standards[55]. Management decisions that affect one source (e.g., an interim IFS) are likely to have consequences for other sources (e.g., groundwater pumpage). Further, streams in West Maui have strong interactions with the groundwater[56]. Dike-impounded water may overflow directly to a stream at the ground surface where stream erosion has breached dike compartments. Once breached to the water table, the percentage of overall contribution to total stream flow depends on the head of the stored water, how deep the stream has cut into the high-level reservoir, the permeability of the lavas between dikes, the size of the compartments as well as connections to other compartments, and the amount of recharge into the breached compartment. Surface water and ground water interactions in these aquifers are assumed to have a one-to-one relationship for management purposes[57]. Streams that intersect the water table of the dike-impounded ground water body are commonly perennial

[55] Maui WUDP 2019 Draft, p. 74.
[56] Cheng, C.L. 2014. Low-flow characteristics of streams in the Lahaina District, West Maui, Hawai'i. U.S. Geological Survey Scientific Investigations Report 2014-5087.
[57] State of Hawaii Water Resource Protection Plan. Adopted July 2019. Appendix F. Inventory and Assessment of Resources, p. 17. http://files.hawaii.gov/dlnr/cwrm/planning/wrpp2019update/WRPP_AppF_201907.pdf

because they are continually recharged by the ground water body.[58] A stream that receives ground water discharge is called a "gaining" stream. In general, the flow increases as one moves downstream within dike zones. The development of a system to capture dike-impounded ground water can affect natural springs and reduce the amount of spring flow that feeds the perennial streams in the upper reaches, resulting in diminished streamflow. An example of where such streamflow impacts have occurred is in the Windward Oʻahu watersheds affected by the Waiāhole Ditch system of tunnels and ditches.[59]

The current PUC Docket, 2020-0089, regarding LIC's rate increase request involves a dispute over the use of ground water in the Launiupoko aquifer to substitute stream flow from Kauaʻula Stream.

Conclusion:

Criteria is met.

HRS § 174C-44 (8) *Whether water development projects that have received any federal, state, or county approval may result, in the opinion of the Commission, in one of the above conditions. HRS § 174C-44 (8)*

Discussion:

The wells refenced as "other permitted well capacity" have received a WCPIP from the Commission and in the completion stage of construction/pump installation. The majority of these wells are not included in the County's authorized planned use calculations due to the factor that most of these wells are either drilled by individual homeowners and/or for non-potable purposes.

The potential full usage of these wells when run at maximum capacity for twenty-four hours needs to be included in the calculation of the existing and planned use under HRS § 174C-44 (1).

Conclusion:

Criteria is met.

Case Law Requirements

Waiāhole I:

- *Commission can consolidate the regulation of a single system because it comports with the Commission's function of comprehensive water planning and management.[60] The Court ruled that the areas covered by the ditch system are to be considered hydrologically controllable irrespective of hydrologic units under HRS § 174C-50 (h) which deems uses*

[58] Oki, D.S. 2003. Surface Water in Hawaii. U.S. Geological Survey Fact Sheet 045-03, 6 p.
[59] Izuka, S.K., and Gingerich, S.B. 1998. Groundwater in the Southern Lihue Basin, Kauai, Hawaii. U.S. Geological Survey Water-Resources Investigations Report 98-4031, 71 p.
[60] *Waiāhole I*, 94 Hawaiʻi at 174, 9 P.3d. at 486.

between existing users as competing when water is drawn from a hydrologically controllable area.[61]

- *Direct interrelationship between ground and surface waters*.[62]

The Honokōhau ditch system crosses multiple surface and ground water hydrologic units, namely Honokōhau, Honolua, Honokahua, Kahana, Honokōwai, and Wahikuli. Honokōhau Stream water is diverted to provide for non-potable needs in these units and to supplement potable needs that the underlying groundwater units of Honokōwai and Honolua cannot provide.

The ditch system also transfers development tunnel water from Kahoma across the ground water hydrologic unit boundary between Launiupoko and Honokōwai. A crossover between surface water hydrologic units also exists between Kahoma and Kaua‘ula and Kaua‘ula and Launiupoko.

Streams in West Maui have strong interactions with the groundwater. Surface water and ground water interactions in these aquifers are assumed to have a one-to-one relationship for management purposes. To accomplish comprehensive water resource management, designation of all hydrologic units, surface and ground is warranted.

Public testimony lauded this comprehensive approach and intent to designate both surface and ground water WMA for all aquifer and hydrologic units in the Lahaina ASA. Additionally, multiple testimony highlighted that only designating Honokōwai and Launiupoko Aquifer would not protect the aquifer because there are no geographical barriers (arbitrary) in the Lahaina ASA and the aquifer is thin as it does not hold recharge in place as the ‘Īao aquifer.

DHHL’s oral testimony specifically provided an example for the need to designate adjacent aquifers; in 2004, shortly after the Commission decided against the designation of the Waihe‘e aquifer, which borders the designated ‘Īao aquifer, a new well construction permit application was received with the well location being right next to the aquifer boundary.[63]

This example describes the 2004 February Commission meeting, where the Commission rescinded automatic triggers for the designation of Waihe‘e aquifer that were set in November 2002 and limited the amount of MDWS’s pumpage from the Waihe‘e aquifer from 4.5 mgd to 4 mgd via a memorandum of agreement (MOA).[64] Only three months after the Commission’s attempt to limit the amount withdrawn from Waihe‘e aquifer due to concerns about well spacing and stress on the aquifer, the Commission approved the new well construction and pump installation permit (WCPIP) of Koolau Cattle Company (Randy Betsill), Waihee Equestrian well (Well No. 5731-06), at its May 2004 meeting because the Waihe‘e aquifer was not a designated WMA and the Commission staff believed that it lacked the authority to deny this permit request due to applicant’s correlative rights.[65] In the same year, Koolau Cattle Company applied for an additional WCPIP, Waihee Equestrian II well (Well No. 5731-07). This permit did not come before the Commission

[61] *Id*.
[62] *Waiāhole I*, 94 Hawai‘i at 173, 9 Pd.3 at 485.
[63] Oral testimony by Dr. Jonathan Likeke Scheuer on behalf of DHHL.
[64] While minutes reflect an MOA, staff have been unable to locate any MOA document in CWRM files.
[65] *See* Minutes for CWRM Meeting, May 19, 2004, at pages 5-8, https://files.hawaii.gov/dlnr/cwrm/minute/2004/mn20040519.pdf

due to the Commission's delegation of WCPIP to the chairperson in 1997 to issue WCPIP administratively; the first application was brought to Commission to highlight issues with MDWS MOA and the recent history of the Waiheʻe aquifer system. To date, four additional wells have been drilled in the Waiheʻe aquifer with two pending completion approval.

The limitations of only designating the ʻĪao aquifer serve as a *"lesson learned"* and further justify including adjacent aquifers for proactive and comprehensive management, especially due to decline in recharge because of the climate crisis.

The case law requirements established by the Hawaiʻi Supreme Court are met.

SUMMARY OF JUSTIFICATION:

Commission staff and the Chairperson have reasonably determined, after conducting scientific investigations and research, that the surface and ground water resources in the Lahaina ASA may be threatened by existing or proposed withdrawals or diversions of water. There is harm to ground water quantity and quality by saltwater intrusion, there's serious historic and ongoing disputes over current and planned uses of water occurring, there's climate uncertainty and potential drought and decline in rainfall and recharge, and there's surface and groundwater interaction and connection that should be managed in an integrated manner.

Additionally, 2 of 3 surface water designation criteria and 6 of 8 ground water designation criteria are met, and the recommended action is consistent with the Commission's Constitutional public trust duties, the precautionary principle, and case law.

Therefore, it is recommended the commission designate the area for the purpose of establishing administrative control over the withdrawals and diversions of ground and surface waters in the area to ensure reasonable and beneficial use of the water resources in the public interest.

RECOMMENDATION:

Accept Findings of Fact and Chairperson's recommendation to designate the Lahaina ASA as both a Surface Water and Ground Water Management Area including the Honokōhau, Honolua, Honokahua, Kahana, Honokōwai, Wahikuli, Kahoma, Kauaʻula, Launiupoko, Olowalu, Ukumehame Surface Water Hydrologic Units and the Honokōhau, Honolua, Honokōwai, Launiupoko, Olowalu, and Ukumehame Groundwater Hydrologic Units, Under the Authority of § 174C-41, HRS, Island of Maui, Hawaiʻi

Ola i ka wai,

M. KALEO MANUEL
Deputy Director

APPROVED FOR SUBMITTAL:

SUZANNE D. CASE
Chairperson

Exhibits: 1. Final Findings of Fact