STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

October 18, 2022

Find that Olowalu Water Company, LLC, Owner and Operator of Diversion 961
Violated the Interim Instream Flow Standard on Olowalu Stream, and
Impose Fines and Order Modifications to Diversion 961,
Olowalu Surface Water Hydrologic Unit, Lahaina, Maui

SUMMARY OF REQUEST

Staff is requesting that the Commission on Water Resource Management (Commission) impose a fine of $470,050 to Olowalu Water Company, LLC (OWC) for a violations of the interim instream flow standards (interim IFS) on Olowalu Stream at Diversion 961 on TMK 4-8-003-1008 on 548 days from January 1, 2019 to March 29, 2022 and on five additional days from April to October, 2022, and recommend improvements to the system to meet the interim IFS and reduce system loss.

LEGAL AUTHORITY

Hawai‘i Revised Statutes (HRS) 174C-15 provides for fines up to $5,000 for violations of any provisions the chapter or any rule adopted pursuant to the chapter. For a continuing offense, each day during which the offense is committed is a separate violation. Subsection (d) authorizes the Commission to recover administrative fees and costs.

Hawaii Administrative Rule (HAR) § 13-167-10 provides for fines of up to $5,000 for any violation of any provision of Title 13, any permit condition or limitation established pursuant to Title 13, or for negligent or willful failure to comply with any final order of the Commission. For a continuing offense, each day during which the offense is committed is a separate violation. HAR §13-169-3 provides that any violation of any provision of the chapter on protection of instream uses of water or any permit condition or who fails to comply with any order of the Commission may be subject to a fine up to $5,000 imposed by the Commission. For a continuing offense, each day's continuance is a separate violation.

On October 1, 2014, the Commission approved its Administrative and Civil Penalty Guideline (G14-01)[1] to provide a logical and consistent means to assess penalties and guide the settlement of Commission enforcement cases. The guidelines are non-binding.

HRS §174C-71(2) and HAR §13-169-30(b) direct the Commission to establish instream flow standards on a stream-by-stream basis whenever necessary to protect the public interest in waters of the State. The staff of the Commission monitors and regulates these established instream flow standards to ensure the protection of instream uses and adequate sharing of this limited resource for non-instream purposes.

BACKGROUND

On March 20, 2018, the Commission approved an amendment to the interim instream flow standard (interim IFS) for the hydrologic unit of Olowalu (ID: 6005), as follows:

"The interim IFS, near an altitude of 130 feet as measured at the abandoned USGS gaging station 16646200, shall be 3.6 cubic feet per second (2.33 million gallons per day). This is based on USGS estimates of total flow Q_{60} of 5.2 cubic feet per second (3.36 million gallons per day) at the upper diversion, an estimated flow of 4.1 cubic feet per second (2.65 million gallons per day) at the lower diversion, an estimated seepage loss (1.1 cubic feet per second; 0.71 million gallons per day) between the two diversions, and further seepage loss between the lower Olowalu diversion, near altitude of 190 feet, and the abandoned USGS station 16646200. Due to the uncertainty of existing hydrogeologic conditions of Olowalu Stream, should an estimated flow of 3.6 cubic feet per second not be sufficient to meet the instream habitat needs, the interim IFS may be revised by a future Commission action. This interim IFS allows Olowalu Water Company to meet their 0.196 mgd agricultural water demand and 0.141 mgd landscaping water demand at least 50-percent of the time."[2]

In the recommended implementation, Commission approved a process where:

- Staff shall continue to coordinate with Olowalu Water Co. to identify and determine appropriate actions with regard to attaining the proposed interim IFS values
- Staff shall continue to assess existing conditions and the status of all diversions to determine if any modifications are possible to improve habitat conditions for stream biota.
- Any party diverting water from a stream shall be responsible to maintain system efficiencies, minimize off-stream water losses, and minimize impacts to the natural stream resource.

In the recommended monitoring, Commission approved a timeline where:

- Within 100 days, OWC, in coordination with Commission staff, shall develop a monitoring plan to provide data on the amount of water diverted from the stream and distributed by the irrigation system to kuleana users. This shall include identifying existing gaging stations and the possible installation of additional gaging stations.

[1] https://files.hawaii.gov/dlnr/cwrm/planning/wrpp2019update/WRPP_AppP_201907.pdf
[2] https://files.hawaii.gov/dlnr/cwrm/submittal/2018/sb20180320B1.pdf

- Staff shall monitor stream flow by installing and maintaining stream gaging stations at the proposed interim IFS locations.

On May 15, 2018 Commission ordered a fine for construction of a stream diversion works and diverting water without a permit at Diversion 961 as required by HRS §174C-93 and HAR §13-168-32. As part of the order, the Commission required OWC to submit a remediation plan that addresses concerns that Commission staff and staff from the Division of Aquatic Resources (DAR) have with the current diversion construction.

Follow up actions from the 2018 commission action

Commission staff met with representatives of OWC over the phone and in person multiple times in 2018 and 2019 to implement the Commission's order. Staff explained that there was continuous monitoring in the stream and that when streamflow dropped below the Q_{60} flow of 3.6 cubic feet per second (2.33 million gallons per day), streamflow should not be diverted. Staff explained that the interim IFS was being monitored at the former USGS gaging station 16646200, as identified in the submittal.

During a site visit on June 22, 2018, Commission staff:

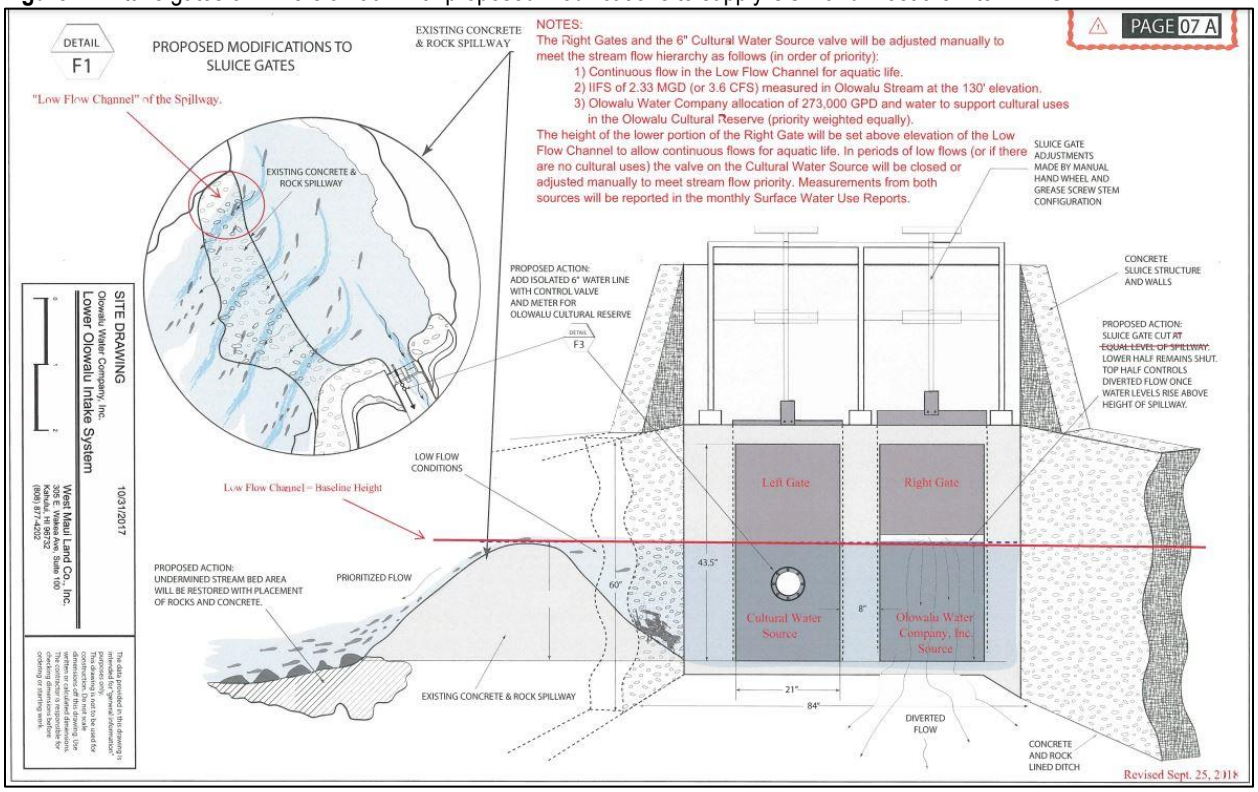
- Recommended a location and method to monitor the quantity of water diverted by Diversion 961 at the Lower Olowalu Ditch
- Recommended a separate pipeline to support the Olowalu Cultural Reserve's water needs
- Recommended modifications to the intake at Diversion 961 to ensure compliance with the interim IFS
- Recommended modifications to the dam in Olowalu Stream at Diversion 961 to ensure a wetted path for native amphidromous aquatic biota

On June 25, OWC submitted a follow-up letter that identified the outcomes of the June 22 site visit. A remediation plan was then submitted on August 9, 2022 and then a revised plan submitted on September 25, 2018 by OWC. As part of the plan, OWC was to build a low-flow channel to provide for fish passage, modify the intake to only divert flows greater than the instream flow standard, and install a V-notch weir to monitor the diverted flow. Commission staff held discussions with OWC on a timeline of approximately 6 months (from July 2018) to make system modifications. The proposed modifications to the intake on Diversion 961 as submitted by OWC are identified in Figure 1.

Prior to Commission action, Olowalu Cultural Reserve (OCR) received water directly from the Lower Olowalu Ditch. Following the Commission action, Commission staff met with OWC to determine the most effective way to meet the non-potable demands of OCR. Staff suggested that OWC install a metered pipeline separate from OWC to supply OCR directly from the stream. This was installed in November 2019. The end users of the Lower Olowalu Ditch are non-public trust uses that include landscape irrigation and small amounts of diversified agriculture. The traditional and customary practice of growing kalo and restoring native vegetation in the Olowalu ahupua'a are considered public trust uses of water.

Monitoring of flow diverted by Diversion 961 into Lower Olowalu Ditch began in September 2020 following the installation of a V-notch weir at the location discussed in June 2018.

Figure 1. Intake gates on Diversion 961 with proposed modifications to supply OCR and meet the interim IFS.



During extreme low-flows, there is leakage underneath the reconstructed dam, but no streamflow is maintained over the dam (Table 1).

Table 1. Diversion 961 on Olowalu Stream at Lower Olowalu Ditch. Top) no flow passing over diversion as viewed from left bank (left photo) and from right bank (right photo). Bottom) leakage from beneath the dam can be observed

DETERMINATION OF NON-COMPLIANCE WITH INTERIM INSTREAM FLOW STANDARDS

The Commission may amend an interim IFS in order to establish the minimum amount of stream flow that at a particular point in space and time in order to protect instream uses of water[3]. The interim IFS might be defined as a fixed value, a value that changes with pre-defined seasons (seasonal value), or a variable value based on the amount of water naturally flowing in the stream.

For interim IFS values, the amount of water remaining in the stream or released back to the stream past a stream diversion is controlled by the diversion operator (operator). Stream diversions build by commercial plantations were frequently designed to take 100% of the stream base flows and some portion of the excess runoff. To comply with a Commission established interim IFS, the operator either decreases the amount of water removed from the stream or increases the amount of water released back to the stream to meet the IIFS. In order to meet a variable interim IFS value, a stream gage must measure the amount of water above the diversion and the operator must either alter the amount of water removed from the stream or alter the amount of water released back to the stream to meet the interim IFS.

Compliance of an interim IFS is determined based on the stream flow measured by the interim IFS monitoring station below the stream diversion. There are two potential scenarios where stream flow does not meet the established interim IFS:

Scenario 1: Depending on the design of the diversion, the operator either (1) does not limit the amount of water removed from the stream by the stream diversion; or (2) release sufficient water back to the stream past the stream diversion;

Scenario 2: There is not enough water naturally flowing in the stream above the stream diversion to meet the interim IFS. In such a situation, no water should be diverted by the operator.

To differentiate these two scenarios, either a stream gage above the diversion or an index station on a nearby stream is used to establish natural flow conditions. An index station is a continuous-record streamflow gaging station that measures natural flow and has a sufficient length of record for estimating streamflow characteristics representative of long-term conditions. An index station is usually located in a nearby stream valley that is hydrologically and geologically similar to the interim IFS gaging station. A hydrologically similar stream has the same probability of rainfall as well as similar geology and groundwater conditions. The flow duration curve for the index station represents low-flow characteristics under natural (unregulated) streamflow conditions. A flow-duration curve is a cumulative-frequency distribution that shows the percentage of time that specified discharges at a location in a stream are equaled to or exceeded over a given period of record.

If the stream gage at the index station indicates that natural stream flow was below a particular threshold (the specific magnitude of flow that occurs for a given frequency of time) used to

[3] Hawaii Revised Statues §174C-71 Protection of instream uses

establish the interim IFS, then it is expected that there is not enough water naturally occurring in the stream to meet the interim IFS.

In scenario 1, the stream gage at the index station indicates that natural stream flow was above the threshold used to establish the interim IFS, then there is enough water naturally occurring in the stream to meet the interim IFS and the diversion operator has failed to make the necessary adjustments to the diversion to meet the interim IFS. Failure to meet the interim IFS falls on the operator.

In scenario 2, there is insufficient streamflow available to divert water at the diversion. Zero water should be diverted. Failure to meet the interim IFS falls on the operator.

If a variable interim IFS is established, the operator should install real-time data collection to meet the interim IFS based on current stream conditions. Failure to meet the interim IFS falls on the operator.

MONITORING THE INTERIM INSTREAM FLOW STANDARD ON OLOWALU STREAM

Streamflow at the Interim IFS

Commission staff have maintained a continuous-record monitoring station on Olowalu Stream below Lower Olowalu Ditch (CWRM 6-121; interim IFS station) since 2017 (see Figure 2 and Figure 3). Staff calculated mean daily flow (MDF) from this continuous record and identified when mean daily flow was below the Q_{60} interim IFS of 3.6 cfs (2.33 mgd). On days when the flow in the stream below Diversion 961 is below the interim OWC must reduce the intake of stream water at Diversion 961. Staff considers the period from January 2019 to the present to be the enforcement period.

For the period from January 1, 2019 to March 29, 2022 (1184 days), there were at least 548 days (46.3%) where the mean daily flow on Olowalu Stream, measured below Diversion 961 at the Lower Olowalu Ditch, violated the interim IFS. This occurred while OWC continued to divert water for non-public trust uses. the days when mean daily flow at the interim IFS monitoring station was below the Commission ordered interim IFS, the orange line in Figure 1. In the 26 site visits to Diversion 961 since the Commission amended the interim IFS on March 20, 2018, there has always been a continual flow of water diverted into the Lower Olowalu Ditch of at least 0.325 cfs (0.21 mgd) and as much as 0.703 cfs (0.454 mgd), despite the interim IFS not being met.

Following the November 2019 installation of a separate pipeline and meter for OCR, the flow distributed to OCR has averaged 0.088 cfs (0.057 mgd) during Commission staff site visits (Table 2).

Diverted flow at Diversion 961

For the period from March 2018 to October 2021, OWC reported the monthly average of flow diverted from Olowalu Stream into Lower Olowalu Ditch at Diversion 961 (not including the OCR diverted flow) of 0.65 cfs (0.42 mgd). From November 2020 to October 2021, the same value was reported for every month despite site visits by Commission staff observing differing diverted flow values, indicating potentially erroneous reporting. Instantaneous flow measurements at gage 6-143 on Lower Olowalu Ditch during Commission staff site visits indicate that OWC is frequently diverting a flow greater than the monthly reported average (Table 2). The quantity of water diverted from Olowalu Stream and then pumped to the Upper Olowalu Reservoir has averaged 0.25 cfs (0.160 mgd) (Figure 4).

From January 1, 2019 to October 3, 2022, staff made 22 flow measurements in Olowalu Stream below Diversion 961 and only eight of the measurements met the interim IFS, while 14 were in violation (Table 2). At the same time, water continued to be diverted at Diversion 961 (Table 2).

The mean size of the violation was 2.65 cfs (1.72 mgd) with a standard deviation of 0.95 cfs (0.62 mgd). Small quantities (< 0.11 cfs, 0.07 mgd) of water used by OCR, as identified in Table 2, did not affect the ability of OWC to meet the interim IFS.

PROPOSED MODIFICATIONS TO DIVERSION 961 TO LOWER OLOWALU DITCH

Following the Commission action to amend the interim IFS on Olowalu Stream on March 20, 2018, and Commission action to approve fines for a violation of HRS §174C-93, and HAR §13-168-32 and an after-the-fact stream diversion works permit on May 15, 2018 (see Appendix 4), Commission staff and staff from the Division of Aquatic Resources met with representatives from OWC on June 22 in the field at Diversion 961 to discuss modifications to the system in order to meet the interim IFS and provide for fish passage. Staff proposed that OWC connect a pipe directly from diversion 961 to the Olowalu Cultural Reserve to support traditional and customary practices and that a meter be installed such that an accurate accounting of the water use by OCR may be reported. This modification was completed in November 2019 as shown in the photo on Table 3A, left gate.

In September 2018, Olowalu Water Company proposed to modify the right intake gate on Diversion 961 such that all low flows below the interim IFS remain in the stream and only flows greater than the interim IFS may be diverted into the ditch (Figure 1). To date, this modification has not been made. There is substantial leakage underneath the dam due to it being hastily rebuilt following the 2016 flood which may need to be repaired (Table 3B). While the leakage contributes to downstream flows, it does not provide connectivity for aquatic biota as discussed during the June 2018 site visit with OWC, Commission staff, and staff from DAR.

Table 2. Measured streamflow (million gallons per day, mgd) in Olowalu Stream above Diversion 961 (Lower Olowalu Ditch), Olowalu streamflow below lower diversion flow at Diversion 961, Lower Olowalu Ditch flow, metered flow to Olowalu Cultural Reserve, and pumped flow from Olowalu Ditch to Upper Olowalu Reservoir during various site visits from 2019 to 2022 [see Figure 2 for locations map]

Date	Olowalu Stream abv Lower Diversion 961	Olowalu Stream blw Lower Diversion 961	Diverted Flow at Lower Olowalu Ditch	Olowalu Cultural Reserve meter	Olowalu Ditch Pump to Upper Reservoir	Notes
03/08/2019		23				Met the interim IFS
06/04/2019	5.02	3.36				Met the interim IFS
09/09/2019	1.25	0.32	0.78		0.16	Violation
03/02/2020	8.71	8.53				Met the interim IFS
06/22/2020	2.80	0.58				violation
10/26/2020	1.47	0.23			0.144	Violation
01/08/2021	1.99	1.61	0.34	0.072	0.166	Violation
03/19/2021		26				Met the interim IFS
07/22/2021	2.26	1.40	0.283	0.072	0.144	Violation
11/02/2021	1.15	0.56	0.294	0.042	0.158	Violation
11/15/2021	0.99	0.44	0.261	0.043	0.161	Violation
12/08/2021	7.53	6.81	0.425	0.042	0.158	Met the interim IFS
01/31/2022	2.28	1.63	0.33	0.071	0.174	Violation
03/23/2022	3.55	2.83	0.41	0.063	0	Violation
03/29/2022	1.37	0.36	0.454	0.049	0.164	Violation
07/11/2022	0.82	0.23	0.294	0.050		Violation
07/15/2022	6.87	6.25	0.318	0.052		Met the interim IFS
07/18/2022	3.52	2.92	0.283	0.065		Met the interim IFS
07/20/2022	3.89	3.32	0.25	0.065		Met the interim IFS
09/16/2022	0.76	0.19	0.294	0.029	0.163	Violation
09/22/2022	0.71	0.10	0.21	0.041	0.167	Violation
10/03/2022	1.15	0.70	0.24	0.061	0.171	Violation
10/07/2022	0.83	0.40	0.21	0.088		Violation

Figure 2. Mean daily flow (million gallons per day, mgd) on Olowalu Stream below Lower diversion (diversion 961) and at the index station USGS 16647000, Ukumehame Gulch nr Olowalu, Maui, HI, with the interim IFS and dates where flow was below the interim IFS of 2.33 mgd.

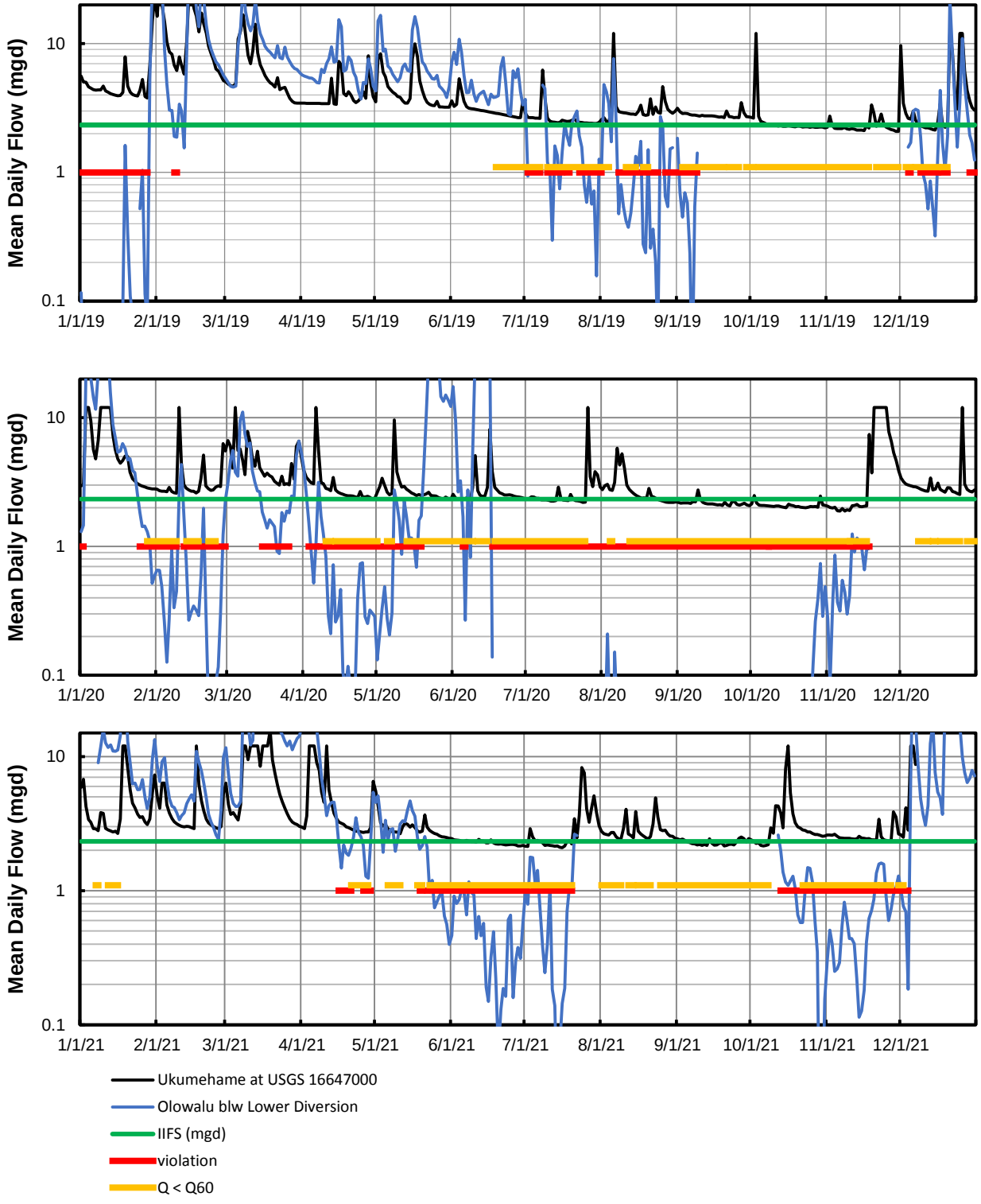


Figure 3. Map of stream and ditch gaging station locations near the Lower Olowalu Ditch including the existing interim IFS station (6-121) and the proposed new interim IFS station (6-329).

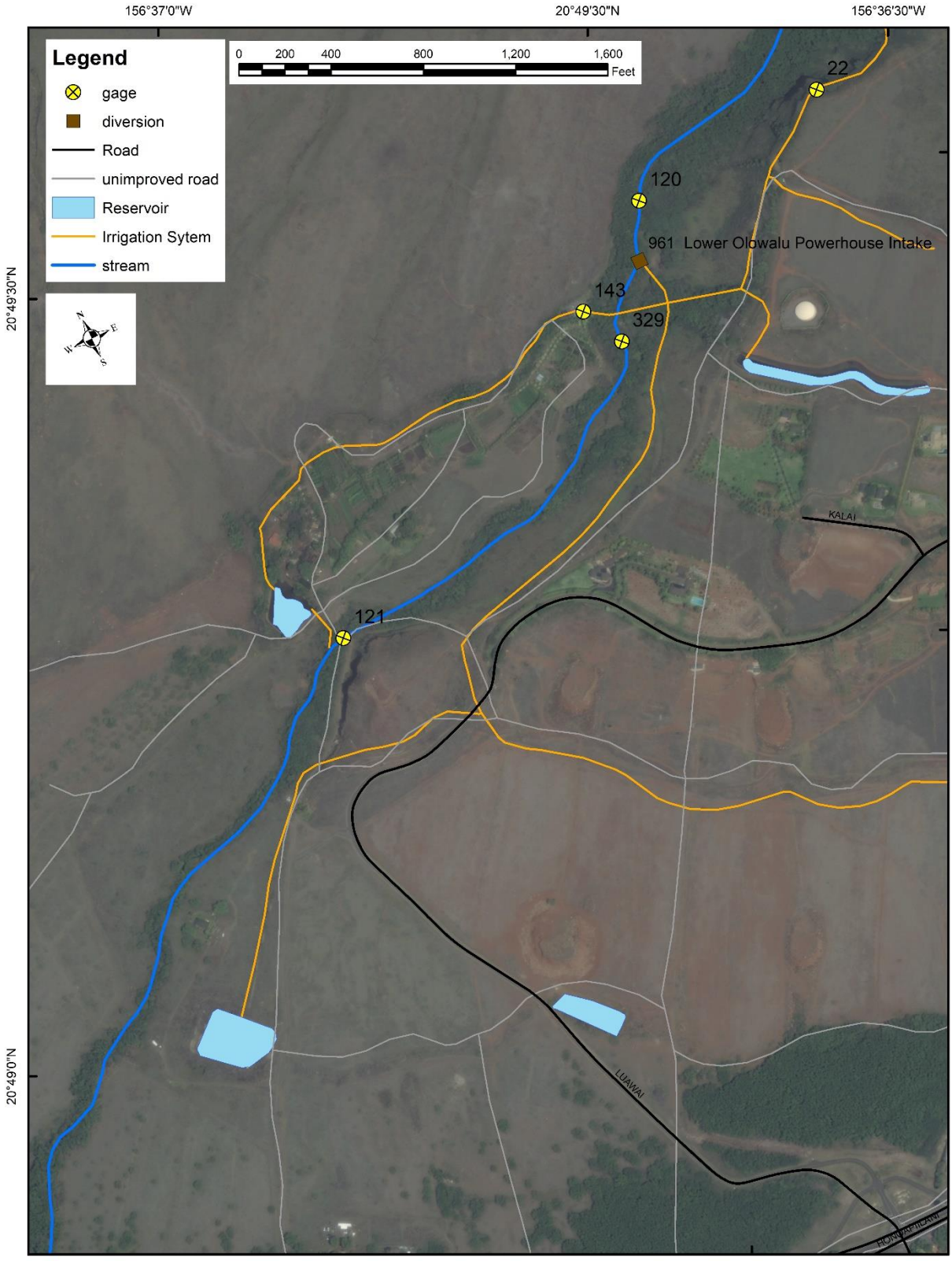


Figure 4. Schematic diagram of stream and ditch gaging station locations near the Lower Olowalu Ditch including the existing interim IFS station (6-121) and the proposed new interim IFS station (6-329).

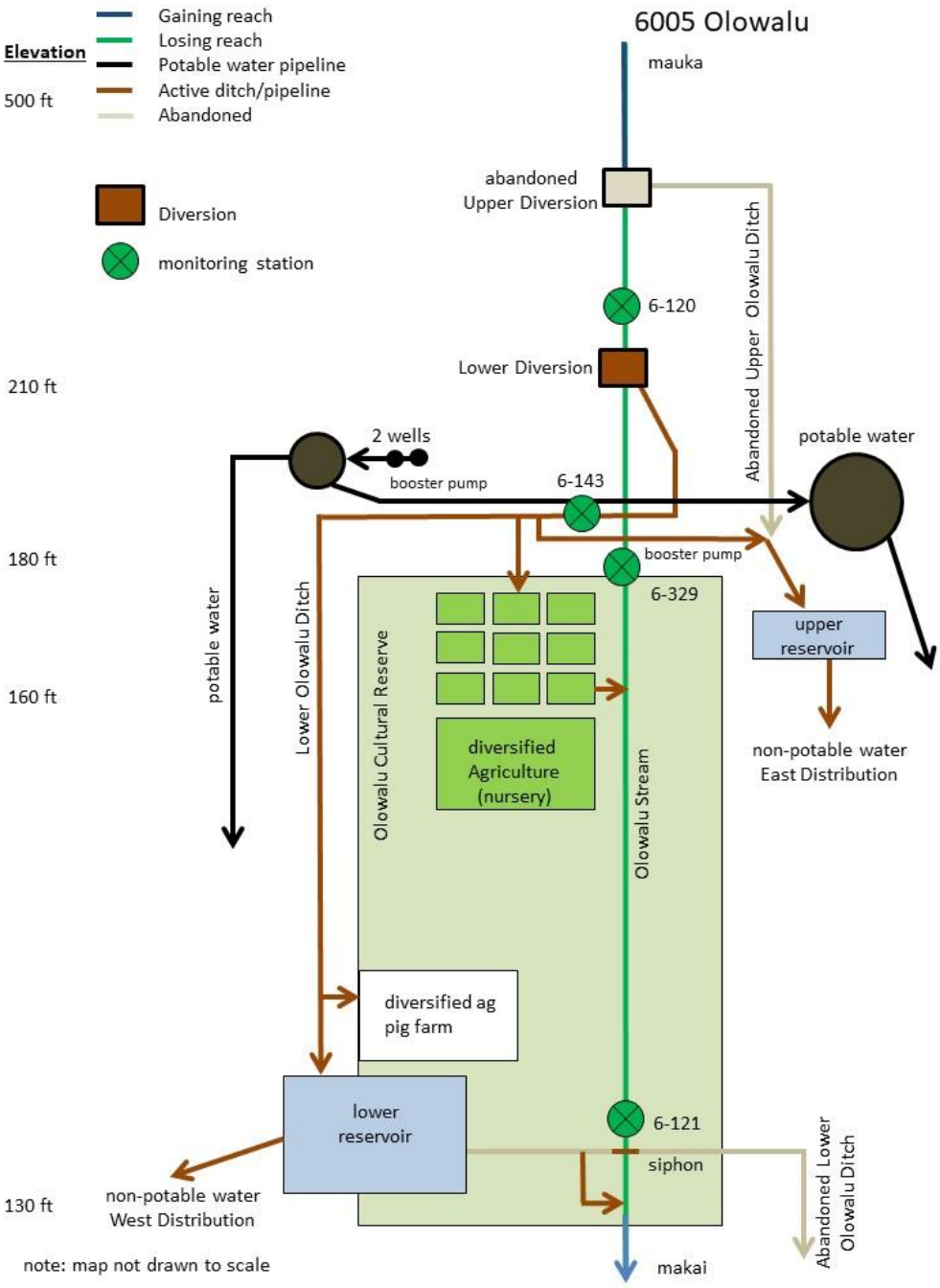

Elevation
500 ft
210 ft
180 ft
160 ft
130 ft
Gaining reach
Losing reach
Potable water pipeline
Active ditch/pipeline
Abandoned
Diversion
monitoring station
6005 Olowalu
mauka
abandoned
Upper Diversion
Abandoned Upper Olowalu Ditch
6-120
Lower Diversion
2 wells
booster pump
6-143
potable water
booster pump
6-329
upper
reservoir
non-potable water
East Distribution
potable water
Lower Olowalu Ditch
Olowalu Cultural Reserve
diversified
Agriculture
(nursery)
Olowalu Stream
diversified ag
pig farm
lower
reservoir
6-121
siphon
non-potable water
West Distribution
Abandoned Lower
Olowalu Ditch
makai
note: map not drawn to scale

Table 3. Diversion 961 on Olowalu Stream at Lower Olowalu Ditch. A) Diverted flow at Lower Olowalu Ditch to Olowalu Cultural Reserve (pipe on left gate) and to Olowalu Water Co (right gate). B) Diversion dam from right bank with intake on left bank.

A)

B)

LEAKAGE FROM LOWER OLOWALU DITCH

On July 11, 2022, during a site visit with staff from OWC, Commission staff pointed out three areas where diverted water was leaking out of Lower Olowalu Ditch: at the former gravel trap; on the flume across Olowalu Stream; and on the OCR pipeline (Table 4). In the implementation of the March 20, 2018 decision to amend the interim IFS, the Commission ordered "any party diverting water from a stream shall be responsible to maintain system efficiencies, minimize offstream water losses, and minimize impacts to the natural stream resource." To date (October 2022), these leaks have not been resolved.

FAILURE TO REPORT DIVERTED FLOW

Commission staff understand that installation and maintenance of monitoring equipment can be financially burdensome. However, Commission staff have requested that the streamflow diverted by Diversion 961 be reported in a timely manner. From 2019 to 2020, OWC failed to report diverted flow for 16 months. Since October 2021, OWC has failed to report a single value for diverted flow (Exhibit 6).

NOTICE OF ALLEGED VIOLATION

On April 12, 2022, Commission staff sent OWC a notice of alleged violation (NOAV) of the interim IFS with the request for a response within 30 days via email and certified mail. See Appendix 3.

On May 12, 2022, OWC's counsel requested a two-week extension to respond to the NOAV, which was granted with the new deadline being May 26, 2022.

On May 27, 2022, Commission received a response from OWC. See Exhibit 4. OWC asserts that "OWC understood that it would be allowed to divert up to 273,000 gpd and still meet the IIFS" based on the March 20, 2018 staff submittal on amended interim IFS for Ukumehame, Olowalu, Launiupoko, and Kauaʻula, OWC's after-the-fact SWDP and subsequent discussions with Commission staff. Furthermore, OWC asserts that after the "receipt of the NOAV, OWC began working with Commission staff on potential modifications to its system, including constructing a V-notch weir at the Lower Olowalu intake, readjusting the gate, and installing real time gages to monitor flows. Additionally, or alternatively, OWC may seek to establish an alternative source of non-potable water by reactivating its N-pump." OWC also scheduled a site visit with Dr. Strauch in July 2022. This site visit occurred on July 11, 2022.

In their response, OWC identified that their average consumption was 0.228 mgd based on their billed amounts. In their response, OWC also reported the volume of water diverted from the stream and then returned to the stream at the end of their system, which is downstream of the interim IFS monitoring station. The average per day returned flow ranged from 29,614 to 1,869,304 gallons.

Table 4. System leakages identified during site visits with Olowalu Water Co. in July 2022.

a) Water leakage from Lower Olowalu Ditch flume

b) water leakage from Lower Olowalu Ditch sluice gate.

c) Leakage from Olowalu Cultural Reserve pipeline below meter

The March 20, 2018, staff submittal on amended interim IFS for Ukumehame, Olowalu, Launiupoko, and Kaua‘ula clearly stated the Code’s definition of an instream flow standard as a “quantity or flow of water or depth of water which is required to be present at a specific location in a stream system at certain specified times of the year to protect fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses,” and the Commission's intent to restore streamflow for Olowalu stream for suitable instream habitat and continuous mauka to makai

streamflow. The staff submittal explicitly stated that "[t]his interim IFS allows Olowalu Water Company to meet their 0.196 mgd agricultural water demand and 0.141 mgd landscaping water demand **at least 50-percent of the time**." Thus, there is no reason for OWC to have an understanding that OWC was "allowed to divert up to 273,000 gpd and still meet the IIFS."

Furthermore, OWC has been represented by counsel at the Commission meeting on March 20, 2018, and May 15, 2018, with regards to OWC's after-the-fact SDWP. At both meetings it was made clear that a SWDP is a construction permit and not a water use permit.[4] Thus, the stated amount of water that can be diverted is in reference to the diversion structure and height of the sluice gate and not an allowance to use this amount of water. OWC in its original application for a SWDP had requested 646,000 gpd. Staff lowered this amount to match the amount of OWC's Certificate for Public Necessity and Convenience with the Public Utilities Commission, which was assumed for full built out of 600 acres of Olowalu Elua.

The construction of the V-notch weir to monitor diverted flow in Lower Olowalu Ditch was completed before the 2022 NOAV, and not in response to it, as part of the requirements to operate a stream diversion works and report water use.

During the July 2022 site visit with Commission staff, modifications to the diversion intake were again discussed, real-time monitoring of the Lower Olowalu Ditch and streamflow were discussed, and alternative sources of water were discussed. During the site visit, the obvious points of leakage were identified in the system that should be resolved. Since that site visit, no improvements have been made.

Additionally, OWC has not been reporting its surface water use of Olowalu stream on a monthly basis but submitted a report of each month's surface water use in January 2020 for the monthly use in 2019 and February 2021 for the monthly use in 2020. The last reporting received was in December 2021 for the month of January to October 2021. Since then, OWC has not reported its use.

Based on the monitoring data, if OWC had not diverted volumes in excess of their need, they would have met the interim IFS more regularly. Therefore, Commission staff recommends that the intake on Diversion 961 be modified, as previously discussed, to ensure only flows greater than the interim IFS be diverted.

PREVIOUS VIOLATION

On May 15, 2018, the Commission has found that OWC violated HRS §174C-93, and HAR §13-168-32, by constructing a 30-foot long by 12-foot wide by 5-foot high concrete dam/spillway in the Olowalu Stream and diverting two mgd without authorization and imposed a fine of $1,000 and assess $500 in administrative fees pursuant to HRS §174C-15 and HAR §13-168-3, and the Administrative and Civil Penalty Guideline. See Appendix 5.

At the same meeting, the Commission approved OWC's after-the-fact Stream Diversion Works Permit (SDWP.4722.6) application for the construction of a concrete dam/spillway and set the

[4] Minutes CWRM Meeting March 20, 2018 https://files.hawaii.gov/dlnr/cwrm/minute/2018/mn20180320.pdf and Minutes CWRM Meeting May 15, 2018. https://files.hawaii.gov/dlnr/cwrm/minute/2018/mn20180515.pdf

gate height sufficient to divert 273,000 gpd and an amount sufficient to support cultural uses in the cultural preserve subject to the Commission's standard permit conditions and the following special conditions:

1. A Remediation Plan shall be developed by the Applicant/Landowner in consultation with and subject to final approval by the Commission staff within six months;

2. The Remediation Plan shall restore the stream to a more natural condition for the purpose of protecting stream ecology. Remediation shall consist of the installation of an aquatic animal access channel by creating a lower channel in the spillway to allow for continuous flow, redesign the dam/spillway to reduce erosion that hinders upstream migration of aquatic animals, and restore the eroded area at the bottom of the spillway using boulders and rocks to help dissipate energy in high water flows. Alter the intake sluice gates to prioritize water flow to the stream and aquatic animal access channel. Remove broken concrete, rebar, and other construction debris to improve public safety.

To date, modifications to the intake related to the remediation plan have not been made.

ASSESSMENT OF FINES

PENALTY POLICY:

HRS Section §174C-15, as amended, provides for fines up to $5,000 per day for any violation of any provision of HRS §174C. The Commission adopted an Administrative and Civil Penalty Guideline (G01-01) in 2001, and subsequently amended the Guideline in October 2014 (G14-01)[5], to provide a logical and consistent means to assess penalties and guide the settlement of Commission enforcement cases. The Guideline includes Initial Minimum, Gravity, Mitigative, and Duration Components. Gravity and Duration Components can increase the initial minimum penalty while Mitigative Components can decrease the initial minimum penalty.

FINE CALCULATION:

Violations:
There are 548 violations between January 1, 2019 and March 29, 2022 of the interim IFS for Olowalu Stream established by the Commission on March 20, 2018, and an additional 5 violations to the interim IFS during follow up site visits following the NOAV. Pursuant to HRS §174C-71 (2):

> *Violation 1: Diverting water without sufficient stream flow present to meet the interim IFS – Olowalu Water Company)*

[5] This guideline is only for use by Commission personnel. The guideline is not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party in litigation with the Commission on Water Resource Management, Department of Land and Natural Resources or the State of Hawaii. The Commission's staff reserves the right to act at variance with this guideline and to change it at any time without notice.

Administrative Fee:
An administrative fee of $500 shall be assessed with the issuance of a written notice of violation.

Applicability to violation:

The Commission staff finds that upon issuance of a notice of violation, an administrative fee of $500 shall be assessed.

Violation 1: $500

Minimum Components:
The minimum fine component established by the Commission's penalty policy is $250 minimum per violation. The initial minimum components include the following:

Component 1: Finding of violation = $250 per day/incident
Component 2: Occurring in Water Management Area = $250 per day/incident
Component 3: Repeat Violation = $250 per day/incident

(A repeat violation is deemed to occur when the party has previously been found to be a violator by the Commission. A repeat violation is tied to the party involved and is irrespective of the nature of the violation.)

Applicability to violation:

The Commission staff finds that there were 553 days that the interim IFS was not met based upon the continuous flow measurements, measured below the Lower Olowalu Ditch intake (Diversion 961). On August 6, 2022, the Lahaina Aquifer Sector Area, which includes the Olowalu hydrologic unit, was designated as a surface and ground-water management area. Four of the violations occurred after the designation date. See Table 1.

Component 1:	*$250 x 553 =*	*$138,250*
Component 2:	*$250 x 4 =*	*$ 1,000*
Component 3:	*$250 x 553 =*	*$138,250*

Therefore, staff recommends a minimum penalty total of $277,500.

Gravity Component:
Gravity factors can be considered in the recommendation of any fine or alternative penalty. The gravity component can increase the minimum component up to a cap of $5,000 per violation and initiate daily fines.

Gravity factors include but are not limited to:

G1 – Significant risk to the resource
G2 – Actual damage or harm to resource
G3 – Multiple or repeat violations of the code or regulations
G4 – Evidence that the violator should have known about the violation
G5 – Refusal to correct the violation once noticed
G6 – Failure to meet deadlines as set by the Commission or its staff

Applicability to violation:

The Commission established the interim IFS for Olowalu stream to fulfill its affirmative duty under the public trust[6] to restore stream flow that maintains mauka to makai connectivity critical for aquatic species survival, recruitment and reproduction, provide for the recreational needs of the community, and provide water for the traditional and customary Native Hawaiian practices that depend on streamflow. OWC has not followed the Commission's March 20, 2018 interim IFS order to modify its stream diversion works and continued to divert water from the stream when the flows were too low to divert any water and meet the interim IFS. During periods when the interim IFS was not being met, mauka to makai connectivity was not accomplished. This violation has negatively affected the availability of habitat downstream of Diversion 961 with consequences for nearshore ecosystems. After receiving the NOAV, OWC has continued its practice to divert even in low flow situations, as staff's point measurements demonstrate. (See Table 1).

Staff recommends that gravity factors be considered and a fine of $5000 per day/incident for significant risk to the resource (G1), for actual damage or harm to resource (G2), for multiple or repeat violations of the code or regulations (G3) and refusal to correct the violation once noticed (G5)

The Commission staff finds that following the NOAV, the interim IFS below Diversion 961 on the Lower Olowalu Ditch was not met on five additional site visits and that OWC has not made any attempt to make corrective actions:

Component G1	*$250 x 553 =*	*$138,250*
Component G5:	*$5,000 x 5 =*	*$ 25,000*

Therefore, staff recommends a gravity penalty total of **$163,250**.

[6] As the Hawai‘i Supreme Court has held in its "Waiāhole I" opinion, "instream flow standards serve as the ***primary mechanism*** by which the Commission is to discharge its duty to protect and promote the entire range of public trust purposes dependent upon instream flows." *In re Water Use Permit Applications*, 94 Hawaii 97, 148, 9 P.3d 409, 460 (2000) (emphasis added).

Mitigation Component:

Mitigative factors can be considered in the recommendation of any fine or alternative penalty. The presence of one or more mitigative factors can reduce or eliminate the minimum penalty component fine or alternative penalty recommendation.
Mitigative factors include but are not limited to:

M1 – Insignificant impact on the resource
M2 – Attempt to remedy the violation without notice
M3 – Good faith effort to remedy violation once noticed
M4 – Self reporting in a timely manner
M5 – Diligent and speedy effort to remedy the violation once noticed
[M6] – Emergency situations (not mentioned in the current penalty policy)

Applicability to violation:

As discussed in the legal authority section of the submittal, the maximum fine for violations of provisions of the water code, rule, or order of the Commission is $5,000. For a continuing offense, each day during which the offense is committed is a separate violation. Each day the interim IFS on Olowalu Stream below Diversion 961 is not met is continuing offense and separate violation. The interim IFS was not met 553 days from January 2019 to March 2022. Utilizing the maximum fine amount, the assessed fine would total **$2,765,000 ($5,000 x 553 days)**.

Commission staff recognize that more timely and regular communication to the diversion operator about interim IFS violations could have potentially reduced the violations. However, implementing the modifications to the intake suggested by Commission staff at the June 2018 site visit would have eliminated any potential violation. Recent communication with the diversion operator has increased, although no steps towards modifications have been made. However, Olowalu Water Company, LLC. is a repeat violator.

Therefore, in lieu of the maximum possible fine, staff recommends the following reasonable assessment of fines:

1. At the request of diverter, a real-time monitoring station was installed at a different elevation to monitor the interim IFS with costs and supplies totaling **$29,300**:

CWRM station 6-329 on Olowalu Stream below Flume	
Cost for equipment and installation	$ 4,000
Cost for monitoring and measurements	$ 22,500
Cost for data transmission and processing	$ 2,800
	$ 29,300

2. Total violation fine of **$440,750**.

Violations	548 days from January 1 to March 29 1 days from March 30 to August 4 4 days from August 5 to October 7 553 total days		
Administrative Fee	$500/violation		= $ 500
Violation Component 1	$250/day (553 days)	553 x $250	= $138,250
Violation Component 2	$250/day (4 days)	4 x $250	= $ 1,000
Violation Component 3	$250/day (553 days)	553 x $250	= $138,250
Component G1	$250/day (553 days)	553 x $250	= $138,250
Component G5	$5,000/day (5 days)	5 x $5000	= $ 25,000
		Total	= $441,250

Alternative Penalty Settlement:

The penalty guideline allows that in lieu of the total monetary fines, the violator may be offered an alternative sanction. Considerations that guide staff in offering such an alternative are:

1. A minimum $500 fine in addition to the alternative offered.
2. The alternative must not be something the violator was required to do anyway because of legal or other obligations.
3. The alternative must result in new information, education, or other benefit to the water resources of the state.
4. The alternative must be completed within a specified timeframe and failure to do so will result in reinstitution of total recommended fines.

Applicability to violation:

On October 5, 2022, counsel for OWC reached out to the Commission staff for the purpose of a potential settlement.

On October 6, 2022, counsel for OWC emailed the Deputy Director Manuel and staff the following requesting "Staff's support in resolving the NOAV dated April 12, 2022 as follows:

1. To meet the IIFS, OWC installed a v-notch weir to monitor the Lower Olowalu Ditch at the intake. Each month, OWC will submit a report of the daily diverted flows to CWRM staff.

2. To meet the IIFS, OWC will modify the gate so that the gate bottom is lowered to the concrete floor and a window is opened above the gate so that available water flows over the gate into the ditch.

3. OWC will purchase a real-time gage. CWRM staff will install the gage in a ditch on [OWC] property. [OWC] will grant to CWRM staff a right of entry for the installation and access thereafter.

4. The collected data from the real-time gage will be hosted by CWRM. The data will be shared with OWC.

5. The Commission will enter an order to comply with the above by XX. Additionally, OWC will submit a report to Staff documenting its compliance by XX. In consideration of the above and OWC's response to the NOAV dated May 27, 2022, no fines will be imposed on OWC and no additional regulatory action associated with the NOAV will be taken."

On October 7, 2022, Deputy Director Manuel informed OWC that at this time staff is not recommending a settlement and will be taking the violations for action to the Commission, recommending a fine as well as orders for modifications to the system, reporting, and monitoring.

The alternatives offered by OWC would constitute compliance with the Commission orders from March 20, 2018, and the gaging and reporting requirements under HAR § 13-168-9[7]. Thus, OWC's alternative did not offer anything that OWC was not required to do because of legal or other obligations. Staff is not recommending an alternative settlement.

[7] HAR § 13-168-7 provides that (a) The owner or operator of any well or stream diversion works from which water is being used ***shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage or a monthly*** (calendar or work schedule) basis. If a well or stream diversion works is one of a battery of interconnected water sources, a centralized measuring device or facility may be approved by the commission.
(b) The owner or operator of any well or stream diversion works or battery of such water sources ***shall file a report of total water usage on a regular monthly (calendar or work schedule) basis to the commission on forms provided by the commission on or before the end of the month following the month for which water usage is to be reported***. The reports may include other use-related information such as type of use, salinity, and water level, as may be deemed appropriate and reasonable by the commission. (Emphasis added)

RECOMMENDATIONS

Staff recommends that the Commission order the following:

1. Find that Olowalu Water Company violated the interim IFS on Olowalu Stream for 553 days.

2. Impose administrative costs and violation fines of $441,250 against Olowalu Water Company LLC owner and operator of Diversion 961.

3. Order modifications of Diversion 961 to meet the interim IFS by modifying the control gate and dam such that the interim IFS remains in the stream and that during low-flow conditions, no water is diverted into Lower Olowalu Ditch via OWC's intake. The separate pipeline that supplies water to OCR may continue to divert the small volumes (< 10% of OWC total diverted flow) intended for traditional and customary practices.

4. Order OWC to eliminate leakage from the ditch, pipeline, and flume as noted in the July 11 site visit.

5. Report monthly the daily flow diverted by Diversion 961 into the Lower Olowalu Ditch.

6. Submit the mitigation plan as ordered by the Commission following the May 15, 2018 violation for an unpermitted stream channel alteration within 90 days.

Ola i ka wai,

M. KALEO MANUEL
Deputy Director

Exhibits:

1. Olowalu Instream Flow Assessment Report (*available online*)
   https://files.hawaii.gov/dlnr/cwrm/ifsar/PR201802-6005-Olowalu.pdf

2. March 20, 2018 Commission approved staff submittal to amend the interim IFS for Olowalu Stream (*available online*)
   https://files.hawaii.gov/dlnr/cwrm/submittal/2018/sb20180320B1.pdf

3. April 12, 2022 Notice of Alleged Violation to Olowalu Water Company

4. May 27, 2022 Olowalu Water Company Response to Notice of Alleged Violation

5. May 15, 2018 Commission approved staff submittal to issue a fine for violating HRS §174C-93, and HAR §13-168-32 (*available online*)
   https://files.hawaii.gov/dlnr/cwrm/submittal/2018/sb20180515B1.pdf

6. Olowalu Water Company Reported diverted flow for Gage 6-143 Lower Olowalu Ditch

APPROVED FOR SUBMITTAL:

SUZANNE D. CASE
Chairperson

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

April 12, 2022

Ref.: CWRM.5882.6

CERTIFIED COPY MAIL IS FORTHCOMING
RETURN RECEIPT REQUESTED

Peter Martin
Olowalu Water Company, LLC
305 East Wakea Ave., Suite 100
Kahului, HI 96732

Aloha Mr. Martin:

NOTICE OF ALLEGED VIOLATION
Interim Instream Flow Standard
Olowalu Stream, Lahaina, Maui

Notice is hereby given by the Commission on Water Resource Management (Commission) that Olowalu Water Company, LLC (OWC) may be in violation of the following:

1. The measurable interim instream flow standard (interim IFS) for Olowalu Stream, below the lower diversion (REG.961.6) near an altitude of 130 feet, established by the Commission on March 20, 2018, in the amount of 3.6 cubic feet per second (2.33 million gallons per day) based on U.S. Geological Survey (USGS) estimates of total flow Q_{60}.

Hawaii Revised Statutes §174C-71(2) and Hawaii Administrative Rules §13-169-30(b) directs the Commission to establish instream flow standards on a stream-by-stream basis whenever necessary to protect the public interest in waters of the State. The staff of the Commission monitors and regulates these established instream flow standards to ensure the protection of instream uses and adequate sharing of this limited resource for non-instream purposes.

According to HRS §174C-15, HAR §13-168-3, and Administrative and Civil Penalty Guideline (G14-01), any person who violates any provision of this chapter, or any rule adopted pursuant to this chapter, may be subject to a fine imposed by the Commission. Such fine shall not exceed **$5,000 per violation. For a continuing offense, each day's continuance is a separate violation.**

According to Commission gaging records (Gage 6-121), the data indicates that from January 1, 2019 to March 29, 2022 (1184 days), there were at least 548 days (46.3%) where the mean daily flow on Olowalu Stream, measured below the Lower Olowalu Ditch intake (Diversion 961), violated the interim IFS while Olowalu Water Company continued to divert water for non-public

EXHIBIT 3

trust uses. Commission gage 6-121 is a continuous stream gaging station and is located below Diversion 961. For the period from September 1, 2019 to March 29, 2022, OWC reported that a monthly average of 0.263 mgd was diverted from Olowalu Stream at Diversion 961. Staff measurements at Commission gage 6-143 on Lower Olowalu Ditch indicate that more flow is frequently diverted (Table 1).

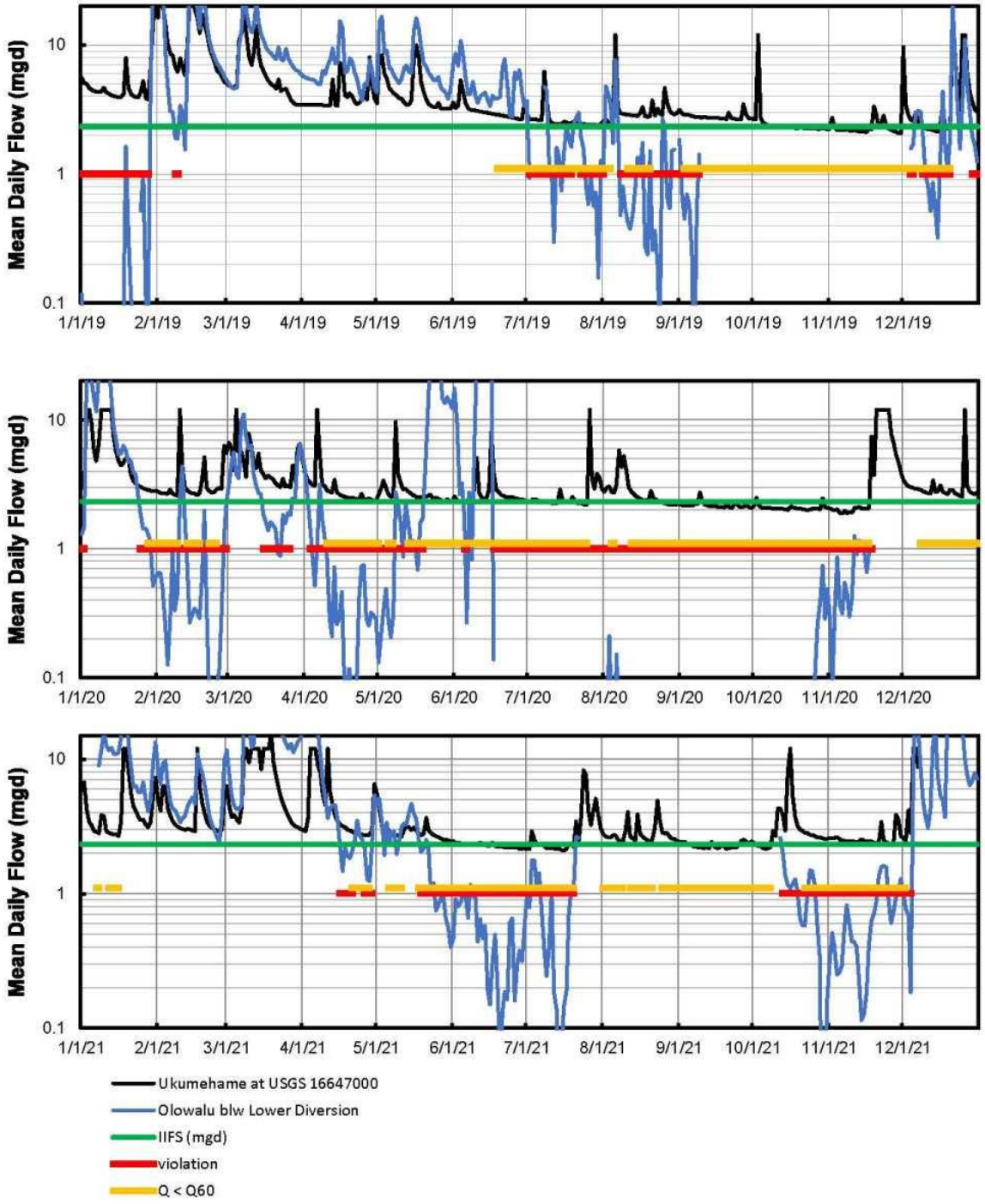
From June 2019 to March 2022, staff made 14 flow measurements in Olowalu Stream below Diversion 961 and only five of the measurements met the interim IFS, while water continued to be diverted at Diversion 961. Following the installation of a separate pipeline and meter for Maui Cultural Lands, the flow distributed to Maui Cultural Lands has averaged 0.057 mgd during site visits while the flow pumped up from the Lower Olowalu Ditch to the upper Olowalu Reservoir has averaged 0.143 mgd.

Table 1. Measured Olowalu streamflow above Lower Olowalu Ditch Diversion (lower diversion), Olowalu streamflow below lower diversion flow at Diversion 961, Lower Olowalu Ditch flow, metered flow to Maui Cultural Lands, and pumped flow from Olowalu Ditch to Upper Olowalu Reservoir during various site visits from 2019 to 2022. [All values are in million gallons per day (MGD)]

date	Olowalu Stream abv Lower Diversion	Olowalu Stream blw Lower Diversion 961	Diverted at Lower Olowalu Ditch	Maui Cultural Lands meter	Olowalu Ditch Pump to Upper Reservoir
6/4/2019	5.02	3.36			
9/9/2019	1.25	0.32	0.78		0.16
3/2/2020	8.71	8.53			
6/22/2020	2.80	0.58			
10/26/2020	1.47	0.23			0.144
1/8/2021	1.99	1.61	0.38	0.072	0.166
3/19/2021		26			
7/22/2021	2.26	1.40	0.50	0.072	0.144
11/2/2021	1.35	0.56	0.50	0.042	0.158
11/15/2021	1.18	0.44	0.45	0.043	0.161
12/8/2021	7.78	6.81	0.68	0.042	0.158
1/31/2022	2.50	1.63	0.55	0.071	0.174
3/22/2022	3.80	2.83	0.66	0.063	0
3/29/2022	1.37	0.36	0.71	0.049	0.164

On days when mean daily flow above Diversion 961 drops below the Q_{60} flow, OWC must reduce the intake of stream water at Diversion 961 (Figure 1, orange line). As a traditional and customary practice protected by the State Constitution, Maui Cultural Lands is entitled to the continued use of water for instream purposes.

Figure 1. Mean daily flow (million gallons per day, mgd) on Olowalu Stream below Lower diversion (diversion 961) and at the index station USGS 16647000, Ukumehame Gulch nr Olowalu, Maui, HI, with the interim IFS and dates where flow was below the interim IFS of 2.33 mgd.



Based on the information and analysis above, we expect OWC to immediately comply with the interim IFS on Olowalu Stream. We welcome OWC to provide a response within thirty (30) days of the date of this letter, as we intend to schedule this case before the Commission for final disposition. You will be notified at that time concerning the meeting time and place.

We appreciate your attention to this matter. Should you have any questions, please contact Dr. Ayron Strauch of the Commission staff at (808) 587-0265, or via email at ayron.m.strauch@hawaii.gov.

Ola i ka wai,

M. KALEO MANUEL
Deputy Director

Olowalu Water Company, INC

305 E. Wakea Ave., Suite 100
Kahului, Maui, Hawaii 96732

Phone: (808) 877-4202
Fax: (808) 877-9409

May 27, 2022

M. Kaleo Manuel
Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Suite 227
Honolulu, Hawai'i 96813

Subject: CWRM.5882.6

Dear Deputy Director Manuel:

On behalf of Olowalu Water Company, LLC ("**OWC**"), I write in response to the Notice of Alleged Violation of the Interim Instream Flow Standard ("**IIFS**") for Olowalu Stream dated April 12, 2022 (the "**NOAV**").

On March 20, 2018, the Commission on Water Resource Management (the "**Commission**") approved the Staff Submittal recommendation to establish the IIFS for Olowalu Stream. As a part of the Staff Submittal, the Commission acknowledged that OWC "has a certificate from the Public Utilities Commission to distribute approximately 273,000 gallons per day (gpd) of non-potable water," Staff Submittal at 5-6, and "[i]n 2011, the Public Utility Commission approved the revised tariff sheets and rate schedules for [OWC] (Docket No. 2010-0340) assuming they deliver 273,000 gallons per day," *id.* at 11. I have enclosed the Staff Submittal dated March 20, 2018 for your reference.

On May 24, 2018, the Commission approved an after-the-fact Stream Diversion Works Permit application (SDWP.4722.6) for the construction of a concrete dam/spillway and "set the gate height sufficient to divert 273,000 gallons per day and an amount sufficient to support cultural uses in the cultural preserve . . . ." Notice of Commission Action dated May 24, 2018.

Based on the Staff Submittal, After-the-Fact Permit and subsequent discussions with Commission staff, OWC understood that it would be allowed to divert up to 273,000 gpd and still meet the IIFS. Consistent with this understanding, OWC diverted a daily average of 228,000 gpd, or about 50,000 gpd less than OWC understood it was allowed to divert from the Stream. I have enclosed OWC's diversion amounts in 2021 for your reference.

Following OWC's receipt of the NOAV, OWC began working with Commission staff on potential modifications to its system, including constructing a V-notch weir at the Lower Olowalu intake, readjusting the gate and installing real-time gages to monitor flows. Additionally, or alternatively, OWC may seek to establish an alternative source of non-potable water by re-activating its N-pump. Finally, OWC has scheduled a site visit with Dr. Ayron Strauch in July of this year to discuss any further modifications to the system, if needed.

EXHIBIT 4

OWC will continue to work with the Commission in good faith to manage the resource. We appreciate the opportunity to respond.

Sincerely,
Olowalu Water Company

Glenn Tremble
Secretary/Treasurer

Enclosures

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

For the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

March 20, 2018
Kahului, Maui

Amended Interim Instream Flow Standards
For the Surface Water Hydrologic Units of
Ukumehame (6004), Olowalu (6005), Launiupoko, (6006), and Kaua'ula (6007), Maui

LOCATION MAP: See Figure 1

SUMMARY OF REQUEST:

Staff is requesting that the Commission consider the recommendations for amending the interim instream flow standard (Interim IFS) for four streams contained within the following four surface water hydrologic units in the region of West Maui (See Figure 1).

UKUMEHAME (6004): Ukumehame Stream
OLOWALU (6005): Olowalu Stream
LAUNIUPOKO (6006): Launiupoko Stream
KAUA'ULA (6007): Kaua'ula Stream

BACKGROUND:

The State Water Code (Code), Chapter 174C, Hawai'i Revised Statutes (HRS), provides that the Commission may adopt interim IFS on a stream-by-stream basis or a general IFS applicable to all streams within a specified area. This submittal seeks to address four streams in West Maui.

The current interim instream flow standard (interim IFS) for the streams being considered were established by way of Hawai'i Administrative Rules (HAR) §13-169-48, which, in pertinent part, reads as follows:

Item B-1

Staff Submittal March 20, 2018
West Maui Interim Instream Flow Standards

> Interim instream flow standard for West Maui. The Interim Instream Flow Standard for all streams on West Maui, as adopted by the commission on water resource management on October 19, 1988, shall be that amount of water flowing in each stream on the effective date of this standard, and as that flow may naturally vary throughout the year and from year to year without further amounts of water being diverted offstream through new or expanded diversions, and under the stream conditions existing on the effective date of the standard…

The current interim IFS became effective on December 10, 1988. Thus, the status quo interim IFS, in effect, grandfathered all then-existing diversions that were registered with the Commission in subsequent years. Following the initial registration of stream diversions works, any new or modified stream diversion works structure requires a permit for construction and amendment to the interim IFS.

Under the Code, the Commission has the responsibility of establishing IFS on a stream-by-stream basis whenever necessary to protect the public interest in the waters of the State. In the Waiahole Ditch Contested Case Decision and Order (Waiahole), the Hawai'i Supreme Court emphasized that "instream flow standards serve as the primary mechanism by which the Commission is to discharge its duty to protect and promote the entire range of public trust purposes dependent upon instream flows."

The Code defines an instream flow standard as a "quantity or flow of water or depth of water which is required to be present at a specific location in a stream system at certain specified times of the year to protect fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses." In considering a petition to amend an interim instream flow standard, the Code directs the Commission to "weigh the importance of the present or potential instream values with the importance of the present or potential uses of water for noninstream purposes, including the economic impact of restricting such uses."

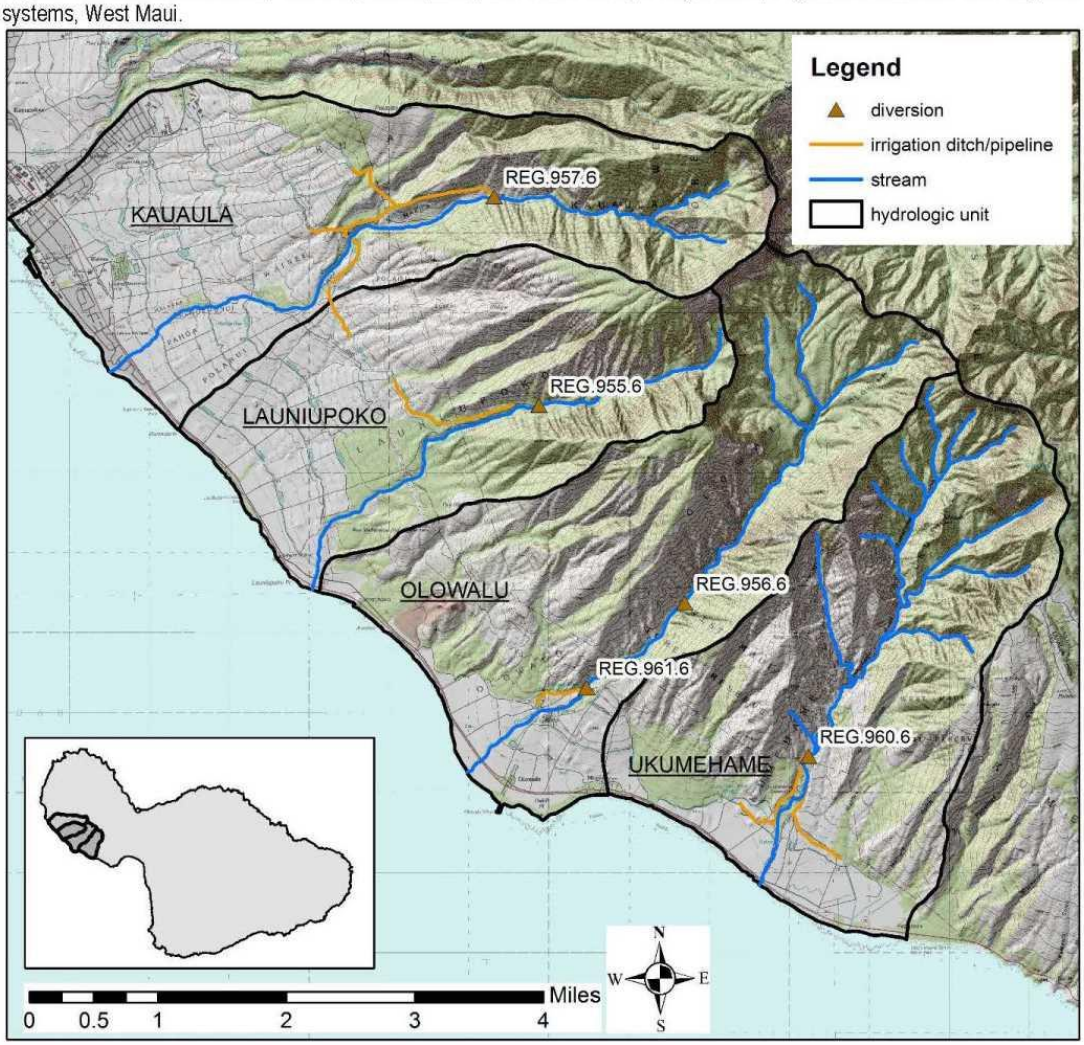
"Instream use" means beneficial uses of stream water for significant purposes which are located in the stream and which are achieved by leaving the water in the stream. Instream uses include, but are not limited to:

1) Maintenance of fish and wildlife habitats;
2) Outdoor recreational activities;
3) Maintenance of ecosystems such as estuaries, wetlands, and stream vegetation;
4) Aesthetic values such as waterfalls and scenic waterways;
5) Navigation;
6) Instream hydropower generation;
7) Maintenance of water quality;
8) The conveyance of irrigation and domestic water supplies to downstream points of diversion; and
9) The protection of traditional and customary Hawaiian rights.

"Noninstream use" means the use of stream water that is diverted or removed from its stream channel and includes the use of stream water outside of the channel for domestic, agricultural, and industrial purposes.

Since the establishment of the Stream Protection and Management Branch in July 2002, the Commission has been developing a framework for setting measurable instream flow standards statewide. This framework involves an assessment of natural flow conditions for the current climate period (1984-2013), an analysis of the instream uses protected by the State Water Code, the existing and planned offstream uses of surface water, and the availability of water from multiple sources. This current assessment of instream uses for West Maui watersheds has been separated into two phases, the first of which addresses interim instream flow standards for Ukumehame, Olowalu, Launiupoko, and Kaua'ula streams (Figure 1).

Figure 1. The Ukumehame, Olowalu, Launiupoko, and Kaua'ula hydrologic units, registered diversion and irrigation systems, West Maui.



Staff Submittal March 20, 2018
West Maui Interim Instream Flow Standards

On March 16, 2011, the Commission authorized the Chairperson to enter into a Joint Funding Agreement between the Commission and the United States Geological Survey (USGS) for a cooperative study to assess low-flow characteristics for streams in the Lahaina District, Maui. The agreement was then signed on June 21, 2011 and the study took place between 2011 and 2013. This agreement supported fieldwork, data analysis, and documentation resulting in the production of a USGS Scientific Investigations Report (2014-5087).

In this report, Cheng (2014) used partial-record gaging stations in conjunction with index stations to estimate natural low-flow duration discharges (See Table 1). Following the publication of this report, staff began analyzing data in support of the production of Instream Flow Standard Assessment Reports (IFSAR) for each hydrologic unit. Due to the lack of staff and the immediacy of other surface water related issues, the analysis of data concerning West Maui was delayed until the last quarter of 2016.

Table 1. Estimated natural median (Q_{50}) and low-flow (Q_{70} and Q_{90}) values for four hydrologic units on West Maui (from Cheng 2014) above the main diversion. [cfs = cubic feet per second; mgd = million gallons per day]

Hydrologic Unit	Estimated natural-flow Q_{50}	Estimated natural-flow Q_{60}	Estimated natural-flow Q_{70}	Estimated natural-flow Q_{80}	Estimated natural-flow Q_{90}
Ukumehame (6004)	5.0 cfs (3.23 mgd)	4.5 cfs (2.91 mgd)	4.0 cfs (2.59 mgd)	3.6 cfs (2.33 mgd)	3.2 cfs (2.07 mgd)
Olowalu (6005)[1]	6.1 cfs (3.94 mgd)	5.2 cfs (3.36 mgd)	4.5 cfs (2.91 mgd)	4.0 cfs (2.59 mgd)	3.4 cfs (2.20 mgd)
Launiupoko (6006)	0.47 cfs (0.30 mgd)	0.44 cfs (0.28 mgd)	0.41 cfs (0.26 mgd)	0.38 cfs (0.25 mgd)	0.35 cfs (0.23 mgd)
Kaua'ula (6007)	9.5 cfs (6.14 mgd)	8.1 cfs (5.24 mgd)	7.1 cfs (4.59 mgd)	6.2 cfs (4.00 mgd)	5.2 cfs (3.36 mgd)

[1]USGS estimated natural flows above the upper Olowalu diversion. Following the September 2016 flood event, the upper diversion was discontinued and the lower diversion activated. There is approximately a 1.1 cfs loss in streamflow between the upper and lower diversions.

In 2016, Commission staff began to research the history of individual diversions and irrigation systems in West Maui. The streams in West Maui were diverted as part of sugarcane plantation irrigation systems since at least the 1930s. With the passage of the Hawai'i State Water Code, these diversions were registered, with the instream flow standard adopted as status quo (Table 2). With the closure of Pioneer Mill (a subsidiary of Amfac, Inc.), operation of these diversions and irrigation systems were transferred to various companies that purchased the agricultural lands once owned by Pioneer Mill.

Table 2. Registered diversions, hydrologic units and their registered primary use with acreage in the Ukumehame, Olowalu, Launiupoko and Kaua'ula hydrologic units, West Maui.

Diversion Registration ID	Diversion name	Stream name	Registrant	Hydrologic Unit	Primary Use	Area (acres)
960.6	Ukumehame	Ukumehame	PIONEER MILL	Ukumehame (6004)	Irrigation	344
961.6	Lower Intake (Powerhouse)	Olowalu	PIONEER MILL	Olowalu (6005)	Irrigation	255
956.6	Upper Olowalu Intake	Olowalu	PIONEER MILL	Olowalu (6005)	Irrigation	255
955.6	Launiupoko Intake	Launiupoko	PIONEER MILL	Launiupoko (6006)	Irrigation	107
957.6	Kaua'ula Intake	Kaua'ula	PIONEER MILL	Kaua'ula (6007)	Irrigation	525

Despite the cessation of sugarcane cultivation, streamflow has continued to be diverted by these new companies for the irrigation of small diversified commercial agriculture, landscaping in agricultural-zoned lots, and roadway medians (Table 3).

Table 3. Median amount diverted from 1983-1987as reported in the stream diversion registration and in 2017 as reported by the current operator. [cfs = cubic feet per second; mgd = million gallons per day]

Hydrologic Unit	Median amount diverted 1983-1987	Median amount diverted 2017
Ukumehame (6004)	6.07 cfs (3.92 mgd)	0.025 cfs (0.016 mgd)[2]
Olowalu (6005)[1]	5.85 cfs (3.78 mgd)	2.25 cfs (1.45 mgd)
Launiupoko (6006)	0.96 cfs (0.62 mgd)	0.37 cfs (0.24 mgd)
Kaua'ula (6007)	7.00 cfs (4.52 mgd)	7.09 cfs (4.58 mgd)

[1]Following the September 2016 flood, the upper diversion was discontinued and the lower diversion activated; [2]Estimated based on direct communications with the system manager when diversion is active (pre-summer 2016 fire).

Uka, LLC (West Maui Investors) purchased the lands makai of diversion 960.6 in Ukumehame; Olowalu Elua Associates, LLC (a subsidiary of West Maui Land Company, WML), purchased lands makai of diversion 956.6 and including diversion 961.6 in Olowalu; Makila Land Co., LLC (a subsidiary of West Maui Land Company) purchased lands makai of diversion 955.6 and 957.6 in Launiupoko and Kaua'ula. Diversions 961.6 and 956.6 on Olowalu Stream are managed by Olowalu Water Company (a subsidiary of West Maui Land Company) and diversion 955.6 on Launiupoko stream and diversion 957.6 on Kaua'ula stream are managed by Launiupoko Irrigation Company (a subsidiary of West Maui Land Company). Olowalu Water Company has

a certificate from the Public Utilities Commission to distribute approximately 273,000 gallons per day (gpd) of non-potable water when the approximately 600 acres of land owned by Olowalu Elua are fully developed (http://files.hawaii.gov/dcca/dca/dno/dno2008/09242008-02.pdf). Launiupoko Irrigation Company has a certificate from the Public Utilities Commission to distribute 1,331,000 gallons per day of non-potable water in 2008 when the approximately 6,000 acres are fully developed (http://files.hawaii.gov/dcca/dca/dno/dno2003/20424.pdf).

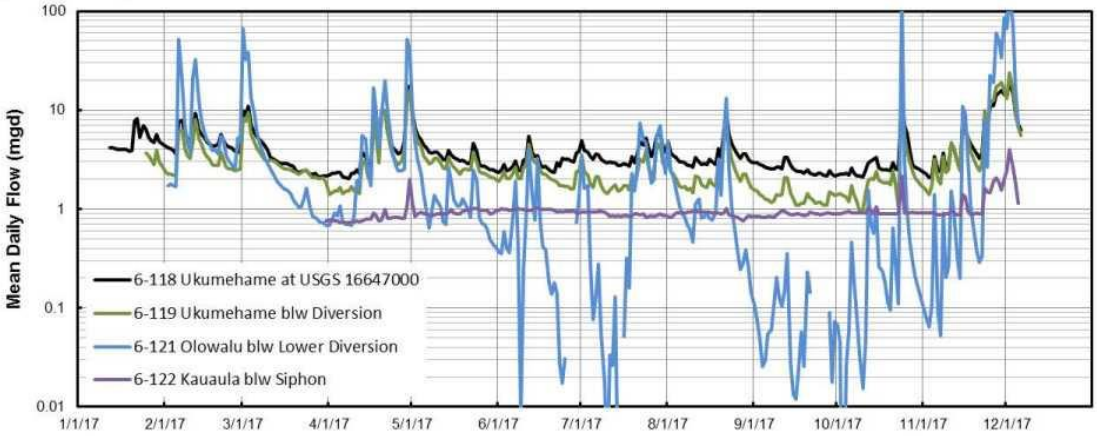
A lack of streamflow has continued to impede kuleana uses of water, including traditional and customary gathering practices, the cultivation of taro, and the recreational use of water. Informal complaints (e.g., phone calls, letters, emails) regarding the lack of streamflow in this region have been numerous (Table 4).

Table 4. Summary of complaints associated with the Ukumehame, Olowalu, Launiupoko and Kaua'ula hydrologic units in West Maui to commission staff.

Hydrologic Unit	Date	Description of Complaint
Ukumehame	May 2014	Subdivision developer altered the stream channel
	September 2011	Illegal stream diversion in violation of agreements
	February 2010	Kuleana user's pipe removed from stream
	February 2010	Inquiry on Petition to Amend the interim IFS to divert water for agriculture near the ocean
	August 2009	General complaint regarding auwai and/or reservoir management
	July 2008	Access to stream and/or kuleana lands
	April 2006	Maui Land Agent conveys complaints from people with kuleana rights regarding stream diversion for new subdivision
	April 2006	SMA comments on proposed Ukumehame subdivision
Olowalu	Jaunary 2017	New concrete poured in Olowalu Stream at lower diversion
	December 2016	Water dumping in a pasture
	September 2010	Lack of water in stream for lo'i
	June 2008	No water flowing in stream
	June 2008	Unauthorized alteration to streambed
Launiupoko	December 2004	Alteration of stream for subdivision road
Kaua'ula	August 2008	Multiple complaints about lack of sufficient streamflow for kuleana users
	July 2008	Traditional water rights are being denied
	April 2008	Water diversions are restricting traditional kuleana uses of land

Three of the four hydrologic units considered in this submittal have kuleana uses downstream of the diversions, and these streams also provide excellent habitat for a number of native aquatic fauna. Stream reaches are classified as gaining in the higher elevation portions as groundwater augments runoff in supplying surface water. The lower reaches are classified as losing, as surface water is lost to groundwater, likely recharging the basal aquifer. Continuous mauka to makai flow is estimated to naturally occur 100-percent of the time in Ukumehame, Olowalu, and Kaua'ula streams if diversions were not in place. Stream gaging stations were established in 2017 to begin collecting baseline data at particular points in the stream below diversions as documented in Figure 2.

Figure 2. Mean daily flow at selected stream monitoring stations in the Ukumehame, Olowalu, Launiupoko, and Kaua'ula hydrologic units, West Maui.



In October 2016, Commission staff began to reach out to irrigation managers, community groups, land owners, and stakeholders in order to better understand the current state of water management and to gather information regarding instream uses in West Maui. In December 2016, staff began conducting field investigations with managers and stakeholders, installing stream monitoring stations, and surveying stream resources (Table 5).

Table 5. Summary of field investigations, by date, taken by Commission staff in support of amendment to the interim instream flow standards for West Maui. [WMI = West Maui Investments, LLC; WML = West Maui Land Company, Inc; MLP = Maui Land & Pineapple Co.; MCDWS = Maui County Department of Water Supply]

Date	Description
Dec 1, 2016	Introduction to WML employees; Launiupoko site visit
Jan 10, 2017	Kahoma site visit with Kahoma Ranch; Ukumehame site visit, gage installation; rating curve development
Jan 25, 2017	WML meeting in Kahului; MLP field office meeting in Kapaloa
Jan 26, 2017	Kaua'ula and Olowalu site visit with WML; Ukumehame site visit with WMI water manager
Feb 1, 2017	Meeting with MCDWS; Lahainaluna WTF site visit; Olowalu complaint investigation site visit; Ukumehame rating curve development
Feb 2, 2017	Honokōwai site visit with Maui Cultural Lands; Olowalu gage installation; rating curve development
Mar 8, 2017	Wahikuli site visit with Maui Ridge to Reef; Kaua'ula gage installation; Olowalu and Ukumehame rating curve development
Mar 9, 2017	Honolua site visit with MLP
Mar 10, 2017	Kanahā site visit with Hans Micheal; meeting with Hawai'i Water Service
Mar 31, 2017	Meeting with Kaanapali Land Co.; Honokōhau Ditch at Mahinahina Weir site visit; Kaua'ula and Olowalu gage rating curve development; Kahoma debris dam site visit
April 1, 2017	Presentation at Maui Cultural Lands community meeting
May 18, 2017	Honokōhau Ditch gage installation and rating curve development
May 20, 2017	Kaua'ula site visit with community; Kanahā site visit with community; Kahoma site visit with community
Dec 6, 2017	Community fact-gathering meeting in Lahaina
Jan 26, 2018	Kaua'ula site visit with community

Based upon the best available information, as presented in the IFSARs and provided in this submittal, staff has developed a recommendation that seeks to protect instream uses while providing for some noninstream uses. The recommendations provided herein have also been developed in consideration of interim IFS values that were adopted by the Commission for previous areas of Maui (i.e., East Maui and Na Wai 'Ehā). As in those decisions, the Commission staff has relied upon the basic tenets of adaptive management, which are to: 1) Establish management objectives; 2) Implement management decisions; 3) Monitor effectiveness of decisions; 4) Evaluate results of management; and 5) Revise management decisions as necessary[1]. Should initial management decisions need further amendment, the decisions can then be revised and the process repeated. This is a learning process that can be repeated over and over, until a sound management decision is reached. Due to the complex and dynamic nature of Hawai'i's stream systems, adaptive management affords staff the ability to proceed in making reasonable management decisions and ensuring that impacts are minimized in the face of uncertainty, thus allowing staff to proceed responsibly while advancing the clear intentions of the State Water Code.

ISSUES/ANALYSIS:

This section of the submittal begins with general considerations of issues that broadly apply to the development of an interim IFS for all four surface water hydrologic units (Figure 1). The general considerations are followed by simplified schematic diagrams and assessment summaries for each specific hydrologic unit. Each summary identifies key points from the respective IFSAR and is by no means intended to substitute the information compiled in each report. Likewise, each schematic diagram is a simplified representation of the stream and its hydrologic characteristics and is not intended to substitute the information compiled in each report.

In developing the interim IFS recommendations, staff has attempted to remain consistent in weighing all of the instream and noninstream uses of each stream based upon the best available information presented in the IFSARs, along with the oral and written comments received through the public review process. Needless to say, this process has proved challenging due to the unique nature of each stream, whether in attempting to compare stream characteristics across multiple hydrologic units or within a single one.

The first step in developing an IFS is assessing the hydrology of each hydrologic unit. Streams are largely characterized by the different geologic components that affect flow regimes, particularly the groundwater contribution to streamflow. The amount of water flowing in a given stream is also affected by regional climate variations (e.g., rainfall, fog drip, solar radiation). The quantity and quality of data available for each stream that is reflective of these geologic and hydrologic characteristics varies considerably from stream to stream. For streams with available measured data, the process for developing an interim IFS may be greatly different from that of streams with limited hydrologic data.

[1] Adapted from The Instream Flow Council, 2004, p.126.

The next step is to weigh often competing instream and noninstream uses of water against the amount of water available to accommodate the needs of these uses. Again, the quantity and quality of information varies from stream to stream. This step is further complicated by the tremendous variability of instream and noninstream uses across and within surface water hydrologic units. For example, one stream may support extensive taro cultivation while another may primarily support domestic uses. The potential of the stream and hydrologic unit to support additional water use in the future has also been considered. The priority is always given to public trust purposes of water: (1) water in its natural state; (2) water for traditional and customary practices; (3) water for domestic uses; (4) water for the Department of Hawaiian Home Lands. If there is sufficient water to meet the instream uses, then noninstream uses can be considered. The process is based upon best available information when weighing the present or potential, instream and noninstream uses.

Hydrologic Considerations: The hydrologic characteristics of a stream are critical to determining the interim IFS recommendation. These characteristics indicate the effects of geology and soils on the flow of water in the stream. Of great importance is the concept of a gaining and losing stream reach. A gaining reach is typically interpreted as where the streambed intersects the underlying water table and groundwater contributes to streamflow as seepage or springs. A losing reach is where the streambed is above the water table and water infiltrates into the streambed and recharges the aquifer, sometimes leaving the stream dry. A stream can also become dry from prolonged periods of little or no rainfall as the water table drops below the streambed. In this case, adequate rainfall is necessary to restore the interaction between surface and groundwater, and to return base flow in the stream.

The presence of gaining, losing, and dry reaches in a stream complicates the characterization of streamflow. In West Maui, streams generally have losing reaches in the lower elevations and have considerable groundwater gains from springs and development tunnels in the upper elevations. A common misconception is that flow restoration from diversion ditches is immediately followed by continuous flow downstream from the point of release all the way to the coast (analogous to turning on the faucet). When sufficient flow is restored to a stream that normally gains groundwater from the point of release to the mouth, streamflow will increase and the stream will probably flow along the entire length. For a stream that is losing, restored flow infiltrates underground once it reaches the losing section. In this case, flow is oftentimes absent downstream of the losing reach. In some cases, flow will become continuous after enough water has infiltrated the streambed and raised the water table, allowing base flow to be maintained by groundwater input. In other cases, the restored stream will remain dry at low-flow where the water table cannot be raised high enough to allow groundwater discharge to the stream.

In determining the recommended interim IFS, the estimated flow in the stream that supports nearly full habitat restoration is assumed to be the Q_{70} flow, the magnitude of flow that occurs at least 70-percent of the time. In previous fieldwork on Maui, 100-percent of the natural Q_{70} flow provides approximately 100-percent of natural habitat (Oki et al. 2010) and similarly, 100-percent of natural habitat is provided by flows greater than 80-percent of the natural median flow (Gingerich and Wolff 2005). Declines in flow below these values reduce the availability of wetted habitat for native species and with decreasing streamflow trends in Hawai‘i, a more

conservative estimate of the current flow condition is warranted. However, these estimates used continuous monitoring of streamflow at long-term stations. Due to the uncertainty of estimates based on partial-record gaging stations with limited continuous data, a slightly more conservative value maybe needed to ensure protection of instream uses.

Another factor in the selection of interim IFS sites, though not necessarily hydrologic in nature, is the accessibility of each proposed site for monitoring and regulation by Commission staff. For these four hydrologic units, major diversions are usually situated in higher elevations and monitoring stations are located in more accessible locations at lower elevations, although this is not always the case.

Finally, the availability of alternative water sources to meet the needs of offstream uses is considered. In each of the hydrologic units considered here, the maximum sustainable yield for groundwater withdrawals is substantially greater than the current total groundwater pumping rates or total installed pump capacity (Table 6). Thus, groundwater is a viable alternative to support the current and future offstream water demands.

Table 6. Current sustainable yields for aquifers associated with four hydrologic units in West Maui, current (2017) total 12-month moving average (MAV) groundwater pumping (million gallons per day, mgd), and total installed pump capacity.

Hydrologic Unit	Aquifer	Sustainable Yield (mgd)	12-month MAV (mgd)	Total Installed Pump Capacity (mgd)
Ukumehame	Ukumehame	3.0	0.062	0.116
Olowalu	Olowalu	2.0	0.104	0.360
Launiupoko	Launiupoko	7.0	0.864	4.019
Kaua'ula	Launiupoko	7.0	0.864	4.019

Instream Use Considerations: The maintenance of instream flows is important for the protection of traditional and customary Hawaiian rights, as they relate to the maintenance of stream (e.g., hihiwai, ʻōpae, ʻoʻopu) and riparian (vegetation) resources for gathering, recreation within streams, and the cultivation of taro. While the traditional Hawaiian ahupuaʻa concept is based on the premise of mauka-to-makai flow, it is difficult to fully represent in words the depth of the cultural aspects of streamflow, including traditions handed down through the generations regarding gathering, ceremonial and religious rites, and the ties to water that are pronounced in Hawaiian legend and lore. The landscape, economy, and people of the island of Maui have changed considerably in the last several decades, with many people affected by the use of surface water.

The maintenance and restoration of stream habitat benefits from continuous streamflow. Streams in Maui are recognized as important habitats for native Hawaiian stream animals. With a few exceptions, diversions capture almost all base flow and an unknown amount of total streamflow in each stream, decreasing flow downstream of the diversion and sometimes causing streams to go dry. The dry reaches that are often found immediately downstream from the diversions can inhibit species migration. Diversion structures themselves often impede the downstream movement of larvae of native stream species (entrainment) and the upstream movement of adults (recruitment). This prevents the upstream migration of native stream

animals, restricts surviving adult animals to the disconnected deep pools, and causes postlarvae recruits to be stranded at the stream mouth.

Other instream uses that must be considered include maintenance of water quality (e.g., temperature, dissolved oxygen, turbidity), instream hydropower, the aesthetic value of water flowing in a stream, and ecosystem services (e.g., supporting riparian species of value, streambank stability, biogeochemical cycling, groundwater recharge).

It is also important to note that flow restoration from diversions may not achieve the desired results of mauka-to-makai flow. A critical component that affects streamflow is the condition of the stream channel and the watershed that contributes to the streamflow within that channel. Streams are often overgrown with alien grasses and shrubs, which are believed to take up large amounts of water when sufficient flow is in the stream.

Noninstream Use Considerations: Diversions on the streams considered here were originally built to primarily irrigate sugarcane. Today, water from these hydrologic units is primarily diverted for small commercial agriculture, small private farm lots and landscaping water needs. In Ukumehame, Uka LLC, (West Maui Investors) is the major developer that uses water from Ukumehame Stream for non-potable uses. Two wells are also available to provide potable water for the planned 45 lot subdivision on former Pioneer Mill sugarcane land. Non-potable water from the stream is distributed throughout the hydrologic unit for irrigation of commercial (one lot) and residential (two lots) properties. There are two commercial farms in the Ukumehame hydrologic unit that produce sod or nursery trees with an estimated demand of 45,400 gallons per day.

In the Olowalu hydrologic unit, Olowalu Water Company provides approximately 33,600 gpd potable water for commercial buildings, domestic homes, small commercial agriculture and agriculturally-zoned parcels. Approximately 200,000 gallons per day of non-potable water is provided by Olowalu Water Company for irrigation of pasture lots, agriculture and landscaping of agriculturally-zoned homes, some small commercial agriculture, and lo‘i and agriculture for Maui Cultural Lands (a lessee). Current commercial agricultural demand in Olowalu is estimated at 196,000 gallons per day. Olowalu Water Company also provides potable water to domestic homes and commercial businesses from two wells. In 2011, the Public Utility Commission approved the revised tariff sheets and rate schedules for Olowalu Water Company (Docket No. 2010-0340) assuming they deliver 273,000 gallons per day.

The Launiupoko Irrigation Company, provides non-potable water diverted from Launiupoko and Kaua‘ula streams for irrigation of small commercial agriculture, agriculturally-zoned parcels, and landscaping across the Launiupoko and Kaua‘ula hydrologic units. Additionally, diverted water from Kaua‘ula is provided to agricultural lessees on land owned by Kamehameha Schools, estimated at 396,000 gallons per day. Water is also used to generate electricity through hydropower operated by Makila Hydro, LLC to operate pumps that supply potable well water through the Launiupoko Water Company, pressurize the irrigation distribution system, and send excess power to Maui Electric Company’s grid. A small amount of water is pumped up hill to TMK parcels with appurtenant rights originally fulfilled by the Pi‘ilani auwai, which was

subsequently replaced by the Kaua'ula Ditch during the plantation era. Approximately 1.5 cfs (1.0 mgd) is currently released at the Kaua'ula siphon back into Kaua'ula Stream after the hydropower plant to support lo'i agriculture for kuleana users in Kaua'ula Gulch, as part of an informal agreement. Non-potable water is also provided directly to these homes via a separate transmission pipe on the west side of the gulch. Table 7 provides a summary of the major noninstream water uses and average water diverted for each hydrologic unit.

Table 7. Estimated non-potable water use for four hydrologic units in West Maui and reported water diverted in 2017. Launiupoko and Kaua'ula hydrologic unit agriculture and landscaping uses are combined since they share a common distribution system managed by Launiupoko Irrigation Company. [IWREDSS = Integrated Water Requirement Estimation Decision Support System; cfs = cubic feet per second; mgd = million gallons per day]

Hydrologic unit	Water Users	Method	Current Estimated Use
Ukumehame	Landscaping (2 lots; 0.813 acres)	Estimated	0.006 cfs (0.004 mgd)
	Agriculturally-zoned parcels (9.089 acres)	IWREDSS	0.070 cfs (0.045 mgd)
	Lo'i (4)	Reported	0.131 cfs (0.086 mgd)
Reported Water Diverted:	0.025 cfs (0.016 mgd)	Total Water Use:	0.143 cfs (0.092 mgd)
Olowalu	Agriculturally-zoned parcels (9; 49.41 acres)	IWREDDS	0.303 cfs (0.196 mgd)
	Maui Cultural Lands lo'i (9)	Estimated	0.233 cfs (0.150 mgd)
	Landscaping (69 lots; 28.3 acres)	IWREDDS	0.219 cfs (0.141 mgd)
Reported Water Diverted:	3.110 cfs (2.010 mgd)	Total Water Use:	0.755 cfs (0.487 mgd)
Launiupoko			
Reported Water Diverted:	0.643 cfs (0.416 mgd)		
Kaua'ula	Kamehameha Schools lessees	Reported	0.613 cfs (0.396 mgd)
	Agriculturally-zoned parcels (88.2 acres)	IWREDDS	0.469 cfs (0.303 mgd)
	Landscaping (193.8 acers)	IWREDDS	1.502 cfs (0.969 mgd)
	Return to stream	Reported	1.550 cfs (1.000 mgd)
Reported Water Diverted:	7.09 cfs (4.58 mgd)	Total Water Use:	4.134 cfs (2.672 mgd)

The partial list below summarizes some of the economic impacts of limiting water availability to Uka, LLC and West Maui Land, LLC.

- Employment. Uka and West Maui Land hire employees who maintain the irrigation systems. While temporary, construction of homes on agriculturally-zoned farms provides

employment. Some farm lots hire seasonal or full-time workers to maintain the farming operation.

- Groundwater. Limiting surface water resources for irrigation will induce higher dependence on groundwater wells for irrigation, which will cost more energy thus money to pump, possibly affecting agricultural operations.
- Suppliers. Uka and West Maui Land spend money in the local economy to support its operations in Maui, including to pipe suppliers and irrigation system distributions.
- Hydroelectric Power: Limiting surface water resources to West Maui Land will reduce the production of hydropower that is used to operate the groundwater pumps for potable water supply and pressurize the non-potable irrigation system, increasing the electrical costs to operate their systems.
- Landscape and tourism. The tourism industry relies on vacation rentals and secondary homes, which may be diminished if surface water is limited. Visitors expect green grassy landscaping. The Visitor Industry provides 40-percent of all jobs on the island, generates 75-percent of the County's economy, and contributes about 40-percent of the total Real Property Tax collections.

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Assessment Summary: Ukumehame

Hydrology. Natural low-flow duration discharge characteristics were determined for Ukumehame Stream by Cheng (2014) using a partial-record gaging station (at 410 feet elevation) and an index station on Wailuku River (USGS 16604500). Based on the available information and field investigations, the stream naturally flows mauka to makai 100-percent of the time. Some water is diverted by the Ka'akau Auwai to supply 16 lo'i and then is returned to the stream below the main Ukumehame diversion. The main diversion currently only supplies water for two sets of two lo'i but could support much more agriculture. A small amount of diverted water (~0.10 cubic feet per second) is returned to the stream below the first set of lo'i off Ukumehame Ditch at an elevation of 175 feet.

Maintenance of Fish and Wildlife Habitat. Ukumehame Stream naturally provides mauka to makai streamflow year-round and as such, provides substantial habitat for freshwater fauna. Previous surveys by the Division of Aquatic Resources (DAR) support the conclusion that native species, including 'o'opu alamo'o (*Lentipes concolor*), 'o'opu nōpili (*Sicyopterus stimpsoni*), 'o'opu nākea (*Awaous stamineus*), and 'ōpae kala'ole (*Atyioda bisulcata*) are common, making it an important stream supporting freshwater habitat for native aquatic fauna. Recent follow-up surveys by DAR staff and The Nature Conservancy confirm the presence of 'o'opu alamo'o, 'o'opu nōpili, 'o'opu nākea, 'ōpae kala'ole, and hihiwai (*Neretina granosa*).

Outdoor Recreational Activities. Ukumehame Stream provides tourists and locals with recreational opportunities along its lowest reaches. Swimming is common in the stream below the diversion and especially near the highway.

Maintenance of Ecosystems. Although the riparian resources of Ukumehame were not classified as "outstanding" by the Hawai'i Stream Assessment, the West Maui Forest Reserve occupies 76.0% of the hydrologic unit and the stream supports a diversity of riparian species that are important for bank stability, biogeochemical processes, and habitat for aquatic and terrestrial fauna. Previous stream surveys identified a variety of Megalagrion species (endangered native damselflies) which inhabit riparian areas. About 52% of the hydrologic unit is composed of alien vegetation largely due to the clearing of lands for agriculture, urbanization, and the presence of non-native ungulates. The lowest reaches support emergent wetland species.

Aesthetic. Due to easy accessibility, Ukumehame Stream supports aesthetic value in the lowest reaches near the highway, as well as to hikers and hunters in the middle to upper reaches.

Maintenance of Water Quality. Ukumehame Stream is classified by the Department of Health as Class 1b inland waters in the upper elevations and Class 2 inland waters in the lower elevations. It does not appear on the 2014 List of Impaired Waters in Hawai'i, Clean Water Act §303(d), although there was insufficient data to support any conclusions. Increased downstream flows reduce stream temperature, an important characteristic of habitat quality for native aquatic species.

Conveyance of Irrigation and Domestic Water Supplies. Ukumehame Stream is not used for

the conveyance of irrigation or domestic water supplies.

Protection of Traditional and Customary Hawaiian Rights. Insufficient flow might affect taro cultivation although the current loʻi are fed by the existing plantation diversion and ditch system, which replaced the historic auwai. Traditional gathering in Ukumehame Valley was also common. Above the main diversion is the Kaʻakau Auwai that supports the cultivation of 16 loʻi.

Noninstream Uses. Ukumehame Stream is diverted at the Ukumehame Ditch Intake (REG.960.6) by Uka, LLC, mainly for the irrigation needs of two small commercial farms and two home lots (0 acres of agriculture) in the Ukumehame hydrologic unit. Up to 45 private farm lots are planned for the subdivision. There is one unregistered diversion supplying water for domestic purposes below diversion 960.6.

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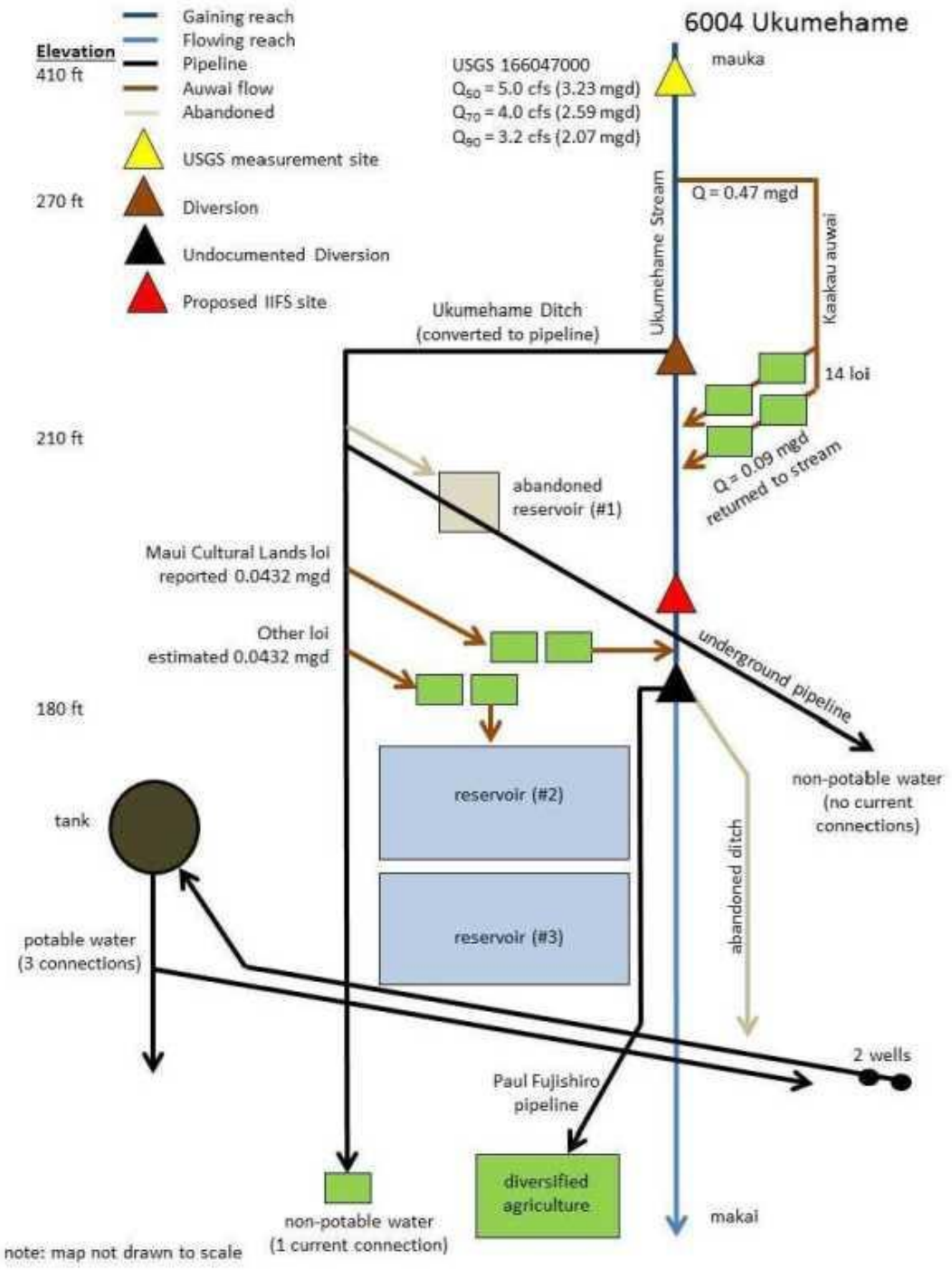
Figure 3: Simplified schematic diagram for the hydrologic unit of Ukumehame.



Assessment Summary: Olowalu

Hydrology. Natural low-flow duration discharge characteristics were determined for Olowalu Stream by Cheng (2014) using a partial-record gaging station (at 560 feet elevation) and an index station on Iao Stream (USGS 1604500). The September 2016 flood destroyed the upper Olowalu intake and now only the lower Olowalu intake is active. Thus, estimates of natural streamflow have to take into consideration the approximate 1.1 cubic feet per second loss between the upper and lower intakes. Based on the available information, the stream reach below the lower diversion is a losing reach but flows to the ocean 100-percent of the time. A small amount of water is returned to the stream below the Maui Cultural Lands and from the lower Olowalu Reservoir at an elevation of 130 feet.

Maintenance of Fish and Wildlife Habitat. Olowalu Stream provides mauka to makai streamflow year-round and provides substantial habitat for freshwater fauna. Previous surveys by the Division of Aquatic Resources (DAR) support the conclusion that native species, including ʻoʻopu nōpili (*Sicyopterus stimpsoni*), ʻoʻopu nākea (*Awaous stamineus*), and ʻōpae kalaʻole (*Atyioda bisulcata*), are common in Olowalu Stream. Recent (2017) follow-up surveys by DAR staff and The Nature Conservancy confirm the presence of ʻoʻopu alamoʻo (*Lentipes concolor*), ʻoʻopu nōpili, and ʻoʻopu nākea.

Outdoor Recreational Activities. The Hawaiʻi Stream Assessment classified the recreational resources of Olowalu as "limited", although tourists and locals have been witnessed hiking along the stream and walking their dogs during field investigations. The West Maui Forest Reserve occupies 68.3% of the hydrologic unit.

Maintenance of Ecosystems. Although the riparian resources of Olowalu were not classified as "outstanding" by the Hawaiʻi Stream Assessment. Reserves occupy 43.3-percent of the hydrologic unit and the stream supports a diversity of riparian and aquatic species that are important for bank stability, biogeochemical processes, and habitat for aquatic and terrestrial fauna. Previous stream surveys identified a variety of Megalagrion species (endangered native damselflies) which inhabit riparian areas. About 60% of the hydrologic unit is composed of alien vegetation largely due to the clearing of lands for agriculture, urbanization, and the presence of non-native ungulates.

Aesthetic. Olowalu Stream does not support substantial aesthetic value in the lowest reaches near the highway, although in the middle to upper reaches, the stream has some aesthetic value based on field interviews with residents.

Maintenance of Water Quality. Olowalu Stream is classified by the Department of Health as Class 1b inland waters in the upper elevations and Class 2 inland waters in the lower elevations. It does not appear on the 2014 List of Impaired Waters in Hawaiʻi, Clean Water Act §303(d), although there was insufficient data to support any conclusions.

Conveyance of Irrigation and Domestic Water Supplies. Olowalu Stream is not used for the conveyance of irrigation or domestic water supplies.

Protection of Traditional and Customary Hawaiian Rights. Taro cultivation on land leased by Maui Cultural Lands is supported by the lower Olowalu stream diversion. There are currently 9 to 12 lo'i, but recent field investigations revealed that the lo'i are not active.

Noninstream Uses. Olowalu Stream is currently diverted at the Lower Olowalu ditch intake by Olowalu Water Company, a major diversion structure, mainly for the irrigation needs of agriculture (55.44 acres) and landscaping of agriculturally-zoned homes (28.3 acres) in the Olowalu hydrologic unit. Agricultural demand for water is estimated at 0.196 mgd (0.303 cfs) and landscaping demand for water is estimated at 0.141 mgd (0.220 cfs). The diversion was repaired following the large September 2016 flood which destroyed the Upper Olowalu ditch intake.

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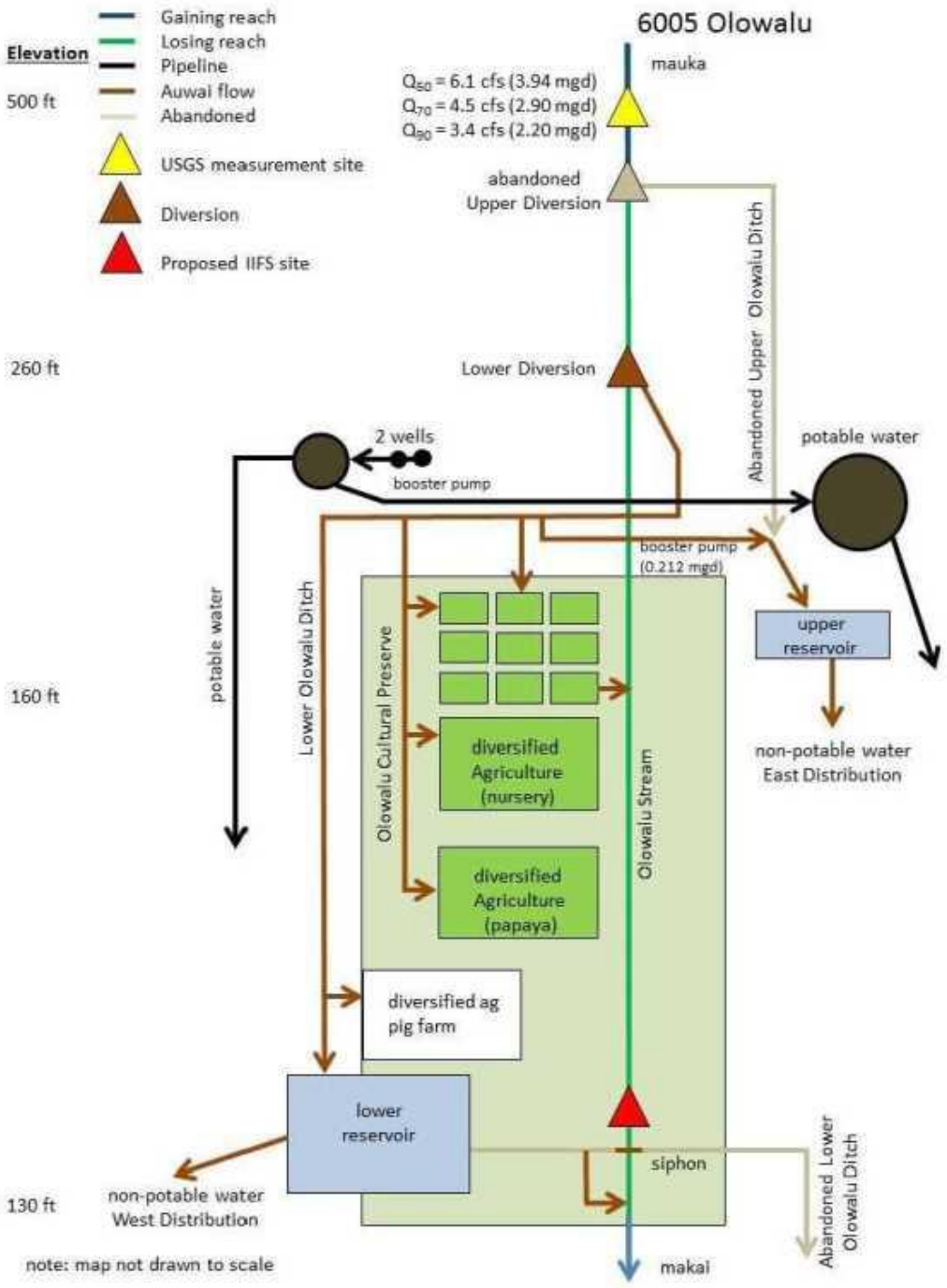
Figure 4: Simplified schematic diagram for the hydrologic unit of Olowalu.



Staff Submittal March 20, 2018
West Maui Interim Instream Flow Standards

Assessment Summary: Launiupoko

Hydrology. Natural low-flow duration discharge characteristics were determined for Launiopoko Stream by Cheng (2014) using a partial-record gaging station (at 1,340 feet elevation) and an index station on Honokōhau Stream (USGS 16620000). Based on the available information and field investigations, the stream reach below the diversion is dry. The stream is expected to naturally flow mauka to makai less than 20-percent of the time.

Maintenance of Fish and Wildlife Habitat. Above the diversion, Launiupoko Stream has the lowest continual flow in the Lahaina District. The middle reaches below the diversion are expected to be naturally dry most of the time, providing no instream habitat.

Outdoor Recreational Activities. The Hawai'i Stream Assessment classified the recreational resources of Launiupoko as "limited". Recreational opportunities included hiking, hunting, and scenic views.

Maintenance of Ecosystems. The riparian resources of Launiupoko were not classified as "outstanding" by the Hawai'i Stream Assessment. Reserves occupy 43.3-percent of the hydrologic unit and the stream supports a diversity of riparian and aquatic species that are important for bank stability. About 60-percent of the hydrologic unit is composed of alien vegetation largely due to the clearing of lands for agriculture, urbanization, and the presence of non-native ungulates.

Aesthetic. Because it does not regularly flow to the ocean, Launiupoko Stream does not support substantial aesthetic value.

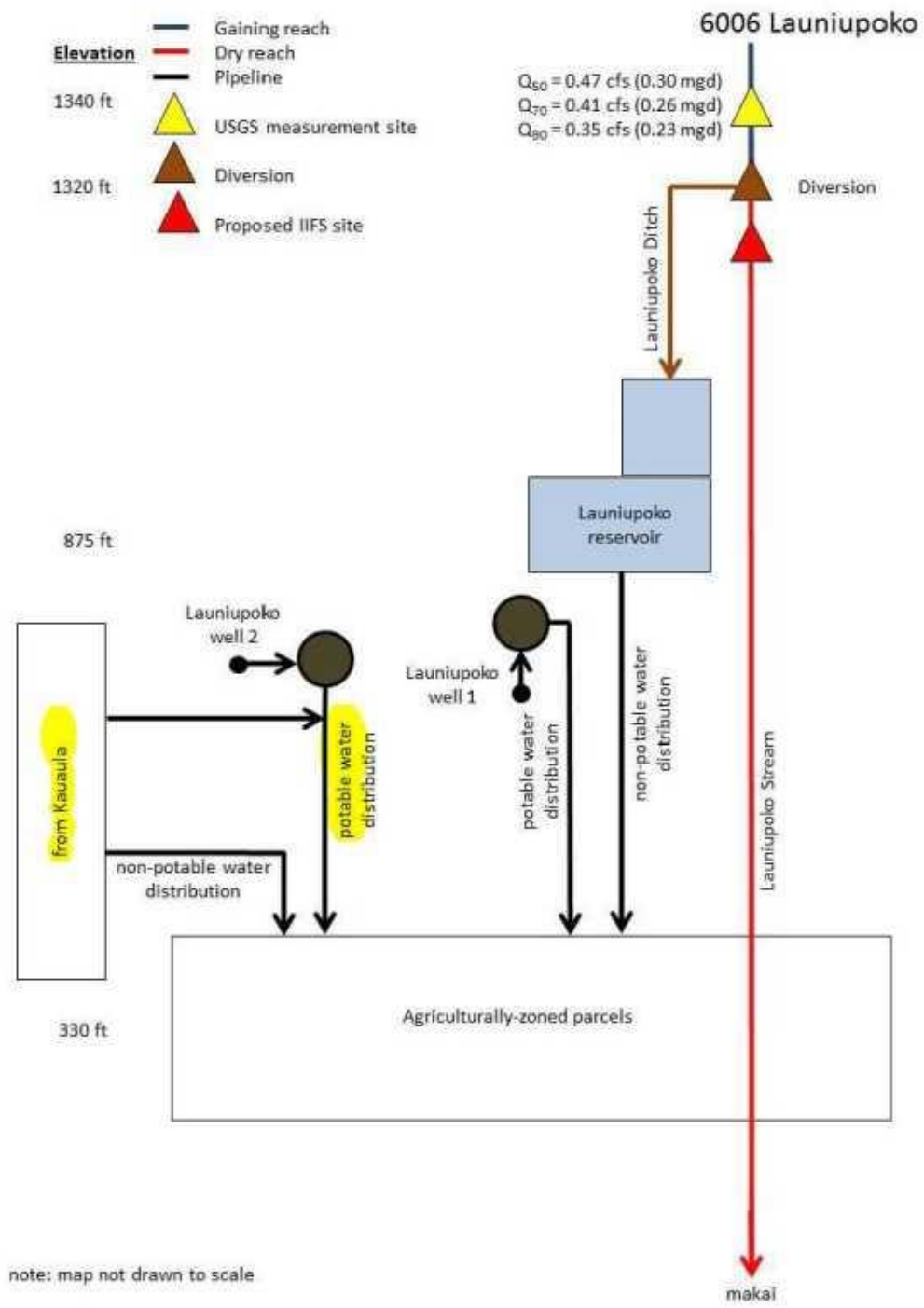
Maintenance of Water Quality. Launiupoko Stream is classified by the Department of Health as Class 1b inland waters in the upper elevations and Class 2 inland waters in the lower elevations. It does not appear on the 2014 List of Impaired Waters in Hawai'i, Clean Water Act §303(d), although there was insufficient data to support any conclusions.

Conveyance of Irrigation and Domestic Water Supplies. Launiupoko Stream is not used for the conveyance of irrigation or domestic water supplies.

Protection of Traditional and Customary Hawaiian Rights. There is currently no flooded lo'i in Launiupoko. Testimony from residents suggest that only dryland agriculture was traditionally practiced in the Launiupoko ahupua'a.

Noninstream Uses. Launiupoko Stream is diverted at the Launiupoko Ditch Intake by Launiupoko Irrigation Company mainly for the irrigation needs of agriculture (88.3 acres; 0.303 mgd) and the landscaping needs of agriculturally-zoned homes (193.8 acres; 1.5 mgd) in the Kaua'ula and Launiupoko hydrologic units. Water is also used to irrigate the roadway medians.

Figure 5: Simplified schematic diagram for the hydrologic unit of Launiupoko.



Assessment Summary: Kaua'ula

Hydrology. Natural low-flow duration discharge characteristics were determined for Kaua'ula Stream by Cheng (2014) using a partial-record gaging station (at 1,560 feet elevation) and an index station on Honokōhau Stream (USGS 16620000). Based on the available information and field investigations, the stream reach below the main diversion is dry. A small amount of water (~1.5 cubic feet per second) is returned to the stream below the siphon on the Kaua'ula Ditch at an elevation of 880 feet. Since staff investigations began in January 2017, there has been continual flow to the ocean below the siphon.

Maintenance of Fish and Wildlife Habitat. Above the diversion, Kaua'ula Stream has the highest streamflow in the Lahaina District, other than Honokōhau Stream. However, the middle reaches below the diversion are dry due to the diversion, providing no instream habitat. Some water is returned to the stream below the Kaua'ula Ditch siphon and native animals have been observed in the stream channel, including 'o'opu nākea and 'o'opu 'akupa. However, there is not enough long-term data to make conclusions regarding the instream fish habitat use provided by Kaua'ula Stream. Testimony identified Kaua'ula as supporting populations of native species during higher flow periods. Since native species are common in nearby streams that support smaller flows, it is assumed that restoration of flows to this stream will greatly benefit native aquatic species.

Outdoor Recreational Activities. The Hawai'i Stream Assessment classified the recreational resources of Kaua'ula as "substantial". Recreational opportunities included hiking, fishing, hunting, swimming, and scenic views. About 43.3-percent of the hydrologic unit is conservation land, with a small portion of this in the West Maui Forest Reserve and another portion in the West Maui Natural Area Reserve (Pana'ewa Section).

Maintenance of Ecosystems. The riparian resources of Kaua'ula were not classified as "outstanding" by the Hawai'i Stream Assessment. The stream supports a diversity of riparian and aquatic species that are important for bank stability, biogeochemical processes, and habitat for aquatic and terrestrial fauna. About 60-percent of the hydrologic unit is composed of alien vegetation largely due to the clearing of lands for agriculture, urbanization, and the presence of non-native ungulates.

Aesthetic. Kaua'ula Stream does not support substantial aesthetic value in the lowest reaches near the highway, although this might be because the stream was dry for most of recent history. In the middle to upper reaches, the stream has aesthetic value based on field interviews with residents.

Maintenance of Water Quality. Kaua'ula Stream is classified by the Department of Health as Class 1b inland waters in the upper elevations and Class 2 inland waters in the lower elevations. It does not appear on the 2014 List of Impaired Waters in Hawai'i, Clean Water Act §303(d), although there was insufficient data to support any conclusions.

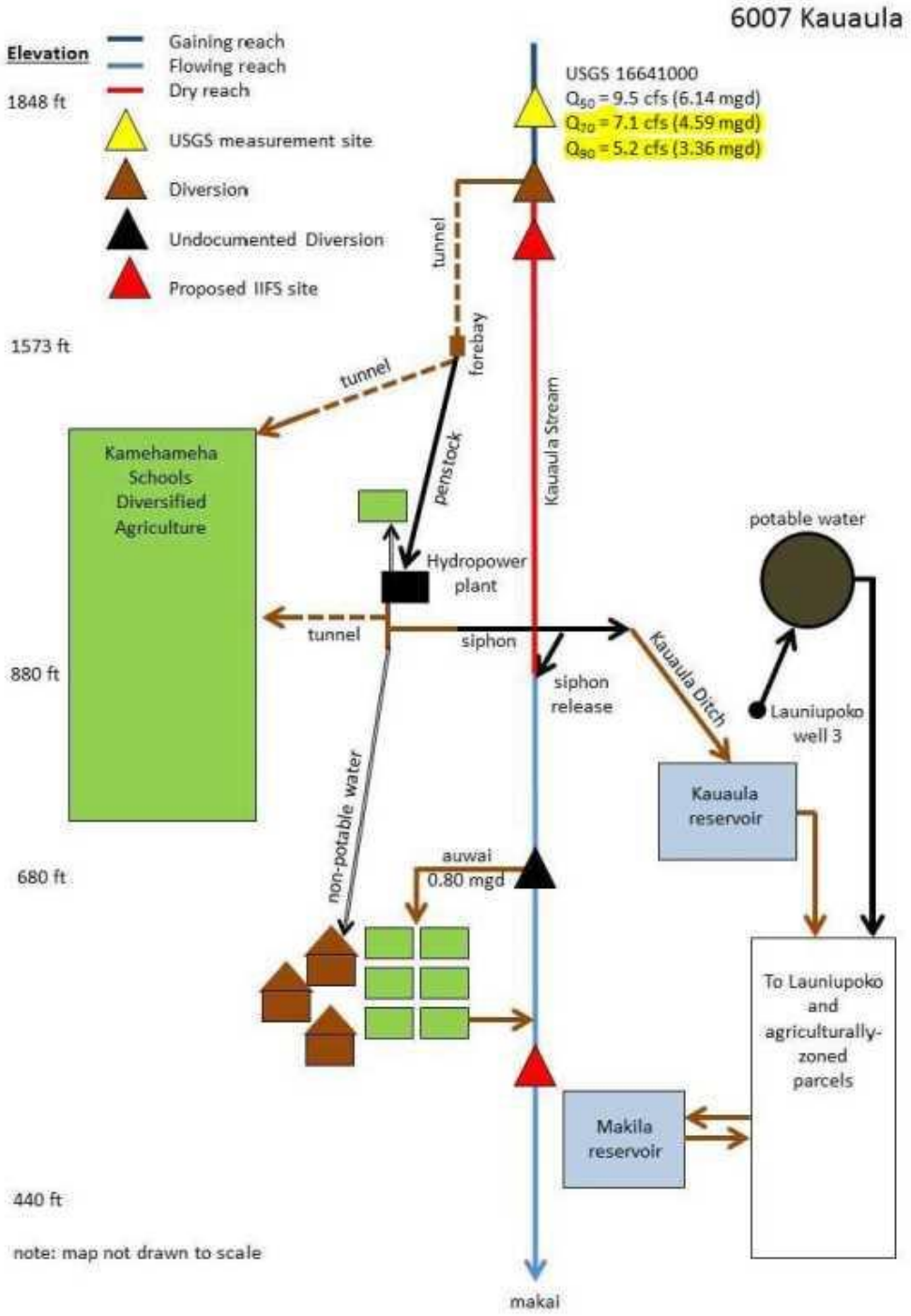
Conveyance of Irrigation and Domestic Water Supplies. Kaua'ula Stream is not used for the

conveyance of irrigation or domestic water supplies.

Protection of Traditional and Customary Hawaiian Rights. Insufficient flow is affecting taro cultivation and traditional gathering in Kaua'ula Valley. There is currently one auwai supplying sufficient water for six lo'i, but recent field investigations revealed that as many as 33 lo'i have been cleared and are ready to be planted if sufficient water were supplied.

Noninstream Uses. Kaua'ula Stream is diverted at the Kaua'ula Ditch Intake by Launiupoko Irrigation Company using a large diversion structure. Diverted water is conveyed to lessees on land owned by Kamehameha Schools (66 acres, 0.4 mgd) through tunnels and to a hydropower plant through a penstock. Following the hydropower plant, water is used for the irrigation needs agriculture (88.3 acres; 0.303 mgd) and the landscaping needs of agriculturally-zoned homes (193.8 acres; 1.5 mgd) in the Kaua'ula and Launiupoko hydrologic units. Some water is delivered to kuleana users above the hydropower plant (flow through is returned to the ditch) and below the siphon (water released into the stream).

Figure 6: Simplified schematic diagram for the hydrologic unit of Kaua'ula.



Staff Submittal March 20, 2018
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ENVIRONMENTAL REVIEW CHAPTER 343, HAWAII REVISED STATUTES

The proposed action does not meet the applicability requirements under Hawaii Revised Statutes §343-5, therefore an Environmental Assessment is not triggered.

RECOMMENDATION:

UKUMEHAME (6004) RECOMMENDATIONS:

The Ukumehame Stream diversion (REG.960.6) originally supported sugarcane cultivation by Pioneer Mill but is now managed by Uka, LLC (West Maui Investors). Water from Ukumehame is diverted at three different locations: 1) at the Kaʻakau auwai for the cultivation of 16 loʻi; 2) at the main diversion (REG.960.6) for multiple uses including to support taro loʻi, commercial farming, landscaping and proposed agriculturally-zoned homes; and 3) at the lower dam for domestic uses. The stream supports many native aquatic species of substantial ecological and cultural importance as well as recreational and aesthetic value. At USGS station 16647000 (elevation 410 ft) above all diversions, the median natural streamflow is estimated to be 5.0 cubic feet per second (3.2 million gallons per day) and Ukumehame Stream is estimated to flow mauka to makai 100-percent of the time. The limited available data suggests there is minimal seepage loss between this station and the main diversion. In order to balance instream and noninstream uses for Ukumehame Stream, restored flow should result in suitable instream habitat, water for loʻi development, and continuous mauka to makai streamflow. It is assumed that the aesthetic and recreational values will be maintained if sufficient instream habitat is restored.

Staff recommends that one measurable interim IFS be established for Ukumehame Stream:

- Proposed Interim IFS: The interim IFS below the main Ukumehame Stream diversion near an altitude of 220 feet, shall be established at an estimated flow of 4.5 cubic feet per second (2.9 million gallons per day) based on USGS estimates of total flow Q_{60}, measured at the lower dam at an elevation of 180ft. At least 0.20 cfs (0.13 mgd) must be supplied for taro loʻi from diversion 960.6. Due to the uncertainty of existing hydrogeologic conditions of Ukumehame Stream, should an estimated flow of 4.5 cubic feet per second not be sufficient to meet the instream habitat needs, the interim IFS may be revised by a future Commission action. This interim IFS allows Uka, LLC to meet their 0.045 mgd agricultural water demand and 0.004 mgd landscaping water demand at least 50-percent of the time with surface water.

In addition to the General Recommendations listed below, staff recommends approval of the following adaptive management strategies for the hydrologic unit of Ukumehame:

- Complete after-the-fact permitting for undocumented diversions.
- Due to the lack of data concerning streamflow gain and loss below the natural flow monitoring station (USGS station 16647000) and the main diversion, additional seepage run streamflow measurements and measurements of stream habitat structure (depth, width, velocity) above and below the diversion are needed to support any revised future Commission action.

OLOWALU (6005) RECOMMENDATIONS:

The Olowalu Stream is diverted for multiple uses at a diversion (REG.961.6) managed by Olowalu Water Company, including supporting taro lo'i, commercial farming, livestock husbandry, landscaping and agriculturally-zoned homes. The stream supports many native aquatic species of substantial ecological and cultural importance as well as recreational and aesthetic value. Following the large flood in September 2016, the upper diversion (REG.956.6) sustained considerable damage and the landowner (State of Hawai'i) is in the process of formally abandoning this diversion. Above the lower diversion, the median natural streamflow is estimated to be 5.0 cubic feet per second (3.2 million gallons per day) and Olowalu Stream is estimated to naturally flow mauka to makai 100-percent of the time. In order to balance instream and noninstream uses for Olowalu Stream, restored flow should result in suitable instream habitat and continuous mauka to makai streamflow. It is assumed that the aesthetic and recreational values will be maintained if sufficient instream habitat is restored.

Staff recommends that one measurable interim IFS be established for Olowalu Stream:

- Proposed Interim IFS: The interim IFS, near an altitude of 130 feet as measured at the abandoned USGS gaging station 16646200, shall be 3.6 cubic feet per second (2.33 million gallons per day). This is based on USGS estimates of total flow Q_{60} of 5.2 cubic feet per second (3.36 million gallons per day) at the upper diversion, an estimated flow of 4.1 cubic feet per second (2.65 million gallons per day) at the lower diversion, an estimated seepage loss (1.1 cubic feet per second; 0.71 million gallons per day) between the two diversions, and further seepage loss between the lower Olowalu diversion, near altitude of 190 feet, and the abandoned USGS station 16646200. Due to the uncertainty of existing hydrogeologic conditions of Olowalu Stream, should an estimated flow of 3.6 cubic feet per second not be sufficient to meet the instream habitat needs, the interim IFS may be revised by a future Commission action. This interim IFS allows Olowalu Water Company to meet their 0.196 mgd agricultural water demand and 0.141 mgd landscaping water demand at least 50-percent of the time.

In addition to the General Recommendations listed below, staff recommends approval of the following adaptive management strategies for the hydrologic unit of Olowalu:

- Due to the lack of data concerning streamflow loss and natural streamflow at the lower diversion, additional monitoring of natural streamflow is recommended above the lower diversion as well as measurements of stream habitat structure (depth, width, velocity) above and below this diversion to support any revised future Commission action.

LAUNIUPOKO (6006) RECOMMENDATIONS:

Launiupoko Stream naturally supports limited aquatic fauna or ecological services and thus likely has limited cultural importance. Further, the stream supplies limited aesthetic or recreational value. The stream is assumed to be losing below the diversion, although a seepage run on this stream was not possible. Based on average seepage-loss rates of 0.05 to 1.6 cubic feet per second per mile, Launiupoko Stream is estimated to flow to the ocean less than 20-percent of the time. There is no streamflow below the existing diversion under most flows but this is believed to be sufficient to support existing instream uses.

Staff recommends that one measurable interim IFS be established for Launiupoko Stream:

- Proposed Interim IFS: The interim IFS below the diversion (REG.955.6), near an altitude of 1,340 feet, shall remain as designated on December 31, 1988. This is equivalent to an estimated flow of 0 cubic feet per second (0 million gallons per day). This interim IFS allows Launiupoko Irrigation Company to meet their 0.303 mgd agricultural water demand at least 50-percent of the time without any water supplied by Kaua'ula Stream.

Water conservation should be mandated throughout the hydrologic unit, including the planting of drought tolerant plants. Large expanses of sod as landscaping is an inappropriate use of scarce water resources and should be eliminated as much as possible.

KAUA'ULA (6007) RECOMMENDATIONS:

The balance of instream and noninstream uses for Kaua'ula Stream considers both the importance of diverted streamflow for the Kamehameha Schools lessees; the non-potable irrigation demands of the Launiupoko Irrigation Co., the kuleana users which rely on the stream for cultural practices, taro cultivation, recreation, and other instream uses, as well as the substantial ecological potential of the stream to support native Hawaiian stream fauna. Restored flow would result in continuous streamflow from mauka to makai. A coordinated study of a one-year release of water past the diversion (REG.957.6) should be sufficient to determine the sustainability of the proposed standard.

In the matter of amending the interim IFS for Kaua'ula Stream, staff recommends that two measurable interim IFS be established for Kaua'ula Stream:

- Proposed Interim IFS A: The interim IFS below the main diversion (REG.957.6), near an altitude of 1,540 feet, shall be established at an estimated flow of 5.2 cubic feet per second (3.36 million gallons per day) based on USGS estimates of total flow Q_{90}. This interim IFS is designed to provide habitat and maintain a wetted pathway between the diversion and the siphon release point. Due to the uncertainty of existing hydrogeologic conditions of Kaua'ula Stream, this interim IFS will be subject to a conditional release of water and monitoring by Commission staff. Should an estimated flow of 5.2 cubic feet per second not be sufficient, the interim IFS may be revised by a future Commission action.

- Proposed Interim IFS B: The interim IFS below the kuleana users near an altitude of 270 feet, shall be established at an estimated flow of 6.35 cubic feet per second (4.1 million gallons per day) based on USGS estimates of total flow Q_{70} and seepage losses. This interim IFS is designed to provide habitat and maintain a wetted pathway between the siphon release point and the ocean while providing for kuleana water needs downstream of the siphon. Due to the uncertainty of existing hydrogeologic conditions of Kaua'ula Stream, this interim IFS will be subject to a conditional release of water and monitoring by Commission staff. Should an estimated flow of 6.35 cubic feet per second not be sufficient, the interim IFS may be revised by a future Commission action. This interim IFS allows Launiupoko Irrigation Company to meet the 0.4 mgd agricultural demand for Kamehameha Schools 100-percent of the time and when combined with water diverted

from Launiupoko Stream, allows Launiupoko Irrigation Company to meet their 0.303 mgd agricultural water demand 100-percent of the time.

In addition to the General Recommendations listed below, staff recommends approval of the following adaptive management strategies for the hydrologic unit of Kaua'ula:

- Complete after-the-fact permitting for undocumented diversions.
- Launiupoko Irrigation Company, in coordination with Commission staff, shall release water to bypass the Kaua'ula Stream diversion (REG. 957.6) to determine the attainability of the two proposed interim IFS values for Kaua'ula Stream.
- Modification of the ditch intake such that streamflow naturally flows over the dam and provides a wetted pathway for migratory stream fauna and modifications to the dam to support upstream movement of stream fauna.

GENERAL RECOMMENDATIONS:

Staff recommends approval of the following adaptive management strategies for all four of the hydrologic units being considered:

IMPLEMENTATION

- Staff shall seek to enforce the provisions of the State Water Code should any unauthorized, non-registered or non-permitted diversions be discovered in the course of its fieldwork. Staff recommends that all owners of unauthorized diversion works structures contact staff to file the necessary applications to seek compliance with all permitting requirements set forth by the Code.
- Staff shall continue to coordinate with Uka, LLC and West Maui Land Co. to identify and determine appropriate actions with regard to attaining the proposed interim IFS values downstream of existing diversion structures.
- Staff shall continue to assess existing conditions and the status of all diversions, in coordination with Uka, LLC, West Maui Land Co., and the Division of Aquatic Resources, to determine if any modifications are possible to improve habitat conditions for stream biota.
- Any party diverting water from a stream shall be responsible to maintain system efficiencies, minimize offstream water losses, and minimize impacts to the natural stream resource.

MONITORING

- Uka, LLC and West Maui Land Co. shall notify Commission staff when any considerable repairs or maintenance to existing stream diversions structures are performed in the future. Any alterations to existing stream diversions that will substantially change the divertible capacity will still be subject to the provisions of the State Water Code, Chapter 174C, HRS.
- Within 100 days, Uka, LLC and West Maui Land Co., in coordination with Commission staff, shall develop a monitoring plan to provide data on the amount of water diverted from each stream, if needed, and distributed by each irrigation system to kuleana users. This shall include identifying existing gaging stations and the possible installation of additional gaging stations.

- Uka, LLC and West Maui Land Co., in consultation with Commission staff, shall regularly report monthly water use or related monitoring data (e.g., ditch flow, reservoir levels, pumpage amounts, etc.).
- Staff shall monitor streamflow by installing and maintaining stream gaging stations at the proposed interim IFS locations and if needed at ditch intakes.
- Periodic biological surveys shall be conducted, subject to available funding, to monitor the response of stream biota to post-interim IFS implementation.
- Anyone claiming to be negatively impacted as a result of the adopted interim IFS shall monitor and document, in cooperation with staff, the impact upon instream or noninstream uses, including economic impacts. Data shall be provided to staff to substantiate any claims.
- Likewise, anyone claiming that negative impacts are a direct result of actions (i.e., diverting too much water, violating the interim IFS) caused by another party, shall monitor and document the impact upon instream or noninstream uses, including economic impacts. Data shall be provided to staff to substantiate any claims.
- All claimants shall cooperate with staff in conducting appropriate investigations and studies, particularly with regard to granting access to stream channels and private property related to such investigations, subject to the provisions of the State Water Code, Chapter 174C, HRS.

EVALUATION

- Within two years from the date of adoption of an interim IFS, staff shall report to the Commission on the progress of implementing the interim IFS and the application of the adaptive management strategies outlined above, and the impacts of the interim IFS upon instream and noninstream uses.
- Within six months, Uka, LLC and West Maui Land Co. shall report to the Commission on the status and implementation of their monitoring plan, the locations of the gaging stations, and provide data on the volume and end uses of water delivered through each system.
- Staff shall assess the implementation of these strategies on an as-needed basis, as may be necessary upon consultation with the affected parties.
- Should there be changes to the operational status of Uka, LLC and/or West Maui Land Co. changes to the current water uses declared by Uka, LLC and West Maui Land Co. and/or any substantial changes in water needs as determined by the Commission or Commission staff, staff shall reassess the interim IFS for streams affected by the irrigation system.

Respectfully submitted,

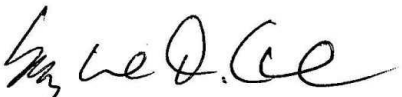
JEFFREY T. PEARSON, P.E.
Deputy Director

Staff Submittal March 20, 2018
West Maui Interim Instream Flow Standards

Note: Exhibits 1 to 4 are available from the Commission website at http://hawaii.gov/dlnr/cwrm/currentissues.htm.

Exhibit 1	Instream Flow Standard Assessment Report for Ukumehame Unit 6004, PR-2018-01
Exhibit 2	Instream Flow Standard Assessment Report for Olowalu Unit 6005, PR-2018-02
Exhibit 3	Instream Flow Standard Assessment Report for Launiupoko Unit 6006, PR-2018-03
Exhibit 4	Instream Flow Standard Assessment Report for Kaua'ula 6007, PR-2018-04
Exhibit 5	Compilation of Public Review Comments, PR-2018-05

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE
Chairperson

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

May 24, 2018

Ref: SDWP.4722.6

Glenn Tremble
Olowalu Water Company, Inc.
Olowalu Elua Associates LLC
305 East Wakea Ave., Suite 100
Kahului, HI 96732

Olowalu Water Company Inc. and Olowalu Elua Associates LLC
Notice of Commission Action
After-the-Fact Application for a Stream Diversion Works Permit (SDWP.4722.6)
Olowalu Stream, Olowalu, Maui, TMK: (2) 4-8-003:108

Dear Mr. Tremble:

This letter serves as your notice of action taken by the Commission on Water Resource Management (Commission) on the subject application. On May 15, 2018, the Commission voted to:

1. Find that the Landowner violated Hawaii Revised Statutes (HRS) §174C-93, and Hawaii Administrative Rules (HAR) §13-168-32, by constructing a 30-foot long by 12-foot wide by 5-foot high concrete dam/spillway in the Olowalu Stream and diverting two mgd without authorization;

2. Impose a fine of $1,000 and assess $500 in administrative fees pursuant to HRS §174C-15 and HAR §13-168-3, and the Administrative and Civil Penalty Guideline, payable within 30 days;

3. Update the Standard Stream Channel Alteration Permit and Stream Diversion Works Permit Condition No. 2 to state that "The project may require other agency approvals regarding wetlands, water quality, grading, stockpiling, endangered species, and floodways. The permittee shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State and county governments, including, but not limited to, instream flow standards."

4. Approve an after-the-fact Stream Diversion Works Permit (SDWP.4722.6) application for the construction of a concrete dam/spillway and set the gate height sufficient to divert

273,000 gallons per day and an amount sufficient to support cultural uses in the cultural preserve subject to the Commission's standard permit conditions in Exhibit 7, and the following special conditions:

a. A Remediation Plan shall be developed by the Applicant/Landowner in consultation with and subject to final approval by the Commission staff within six months;
b. The Remediation Plan shall restore the stream to a more natural condition for the purpose of protecting stream ecology. Remediation shall consist of the installation of an aquatic animal access channel by creating a lower channel in the spillway to allow for continuous flows, redesign the dam/spillway to reduce erosion that hinders upstream migration of aquatic animals, and restore the eroded area at the bottom of the spillway using boulders and rocks to help dissipate energy in high water flows. Alter the intake sluice gates to prioritize water flow to the stream and aquatic animal access channel. Remove broken concrete, rebar, and other construction debris to improve public safety.

5. Issue a written warning to the Landowner indicating any future violations involving a stream diversion works without the necessary permits may be considered a repeat violation with fines assessed for each day of violation; and,

6. Suspend any current, pending or future applications by the Landowner until the fine is paid and the Remediation Plan is implemented.

This letter serves as a written warning that any future violations involving a stream diversion works without the necessary permits may be considered a repeat violation with fines up to $5,000 for each day of violation.

Please remit payment in the amount of $1,500.00, payable to the Department of Land and Natural Resources, within 30 days of the Commission action. Payment should be sent to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809,

If you have any questions, contact Rebecca Alakai at 587-0266 or rebecca.r.alakai@hawaii.gov.

Sincerely,

JEFFREY T. PEARSON, P.E.
Deputy Director

	OIC 2021 CONSUMPTION		Average per day metered and BILLED				OIC BOOSTER PUMP
		BILLED		REPORTED	RETURNED		OLOWALU MAUKA
Jan-21	2/1/2021	4,847,121	156,359	8,238,932	343,782	7,895,150	3,288,723
Feb-21	3/1/2021	5,798,657	207,095	7,441,616	-	7,441,616	4,476,669
Mar-21	4/1/2021	6,092,275	196,525	8,238,932	369,236	7,869,696	4,447,793
Apr-21	5/1/2021	6,176,547	205,885	7,973,160	271,275	7,701,885	4,217,743
May-21	6/1/2021	8,202,301	264,590	8,238,932	118,507	8,120,425	4,678,013
Jun-21	7/1/2021	8,069,301	268,977	7,973,160	29,614	7,943,546	4,662,205
Jul-21	8/1/2021	7,388,646	238,343	8,238,932	-	8,238,932	4,515,687
Aug-21	9/1/2021	8,000,500	258,081	8,238,932	164,488	8,074,444	5,348,530
Sep-21	10/1/2021	7,449,401	248,313	7,973,160	41,814	7,931,346	4,601,642
Oct-21	11/1/2021	7,881,673	254,248	8,238,932	1,869,304	6,369,628	3,670,649
Nov-21	12/1/2021	7,600,070	253,336	7,973,160	230,683	7,742,477	4,288,726
Dec-21	12/31/2021	5,967,003	192,484	8,238,932	625,977	7,612,955	3,438,017
		83,473,495		97,006,780		92,942,100	51,634,397
		228,694.51	228,686	265,772.00		254,635.89	141,464.10

Olowalu Water Company Reported diverted flow for Gage 6-143 Lower Olowalu Ditch

End of Month	Mean Reported Diverted Flow (mgd)	End of Month	Mean Reported Diverted Flow (mgd)
01/31/2018	0.734	08/31/2021	0.266
02/28/2018	0.869	09/30/2021	0.266
03/31/2018	0.571	10/31/2021	0.266
04/30/2018	0.361	11/30/2021	
05/31/2018	0.417	12/31/2021	
06/30/2018	0.491	01/31/2022	
07/31/2018	0.500	02/28/2022	
08/31/2018	0.686	03/31/2022	
09/30/2018	0.660	04/30/2022	
10/31/2018	0.681	05/31/2022	
11/30/2018	0.684	06/30/2022	
12/31/2018	0.721	07/31/2022	
01/31/2019	0.586	08/31/2022	
02/28/2019	0.573	09/30/2022	
03/31/2019	0.531		
04/30/2019	0.622		
05/31/2019			
06/30/2019			
07/31/2019			
08/31/2019			
09/30/2019			
10/31/2019			
11/30/2019			
12/31/2019			
01/31/2019			
02/28/2019			
03/30/2019			
04/30/2019			
05/31/2020			
06/30/2020			
07/31/2020			
08/31/2020			
09/30/2020	0.261		
10/31/2020	0.231		
11/30/2020	0.266		
12/31/2020	0.266		
01/31/2021	0.266		
02/28/2021	0.266		
03/31/2021	0.266		
04/30/2021	0.266		
05/31/2021	0.266		
06/30/2021	0.266		
07/31/2021	0.266		

EXHIBIT 6