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COMMISSION ON WATER RESOURCE MANAGEMENT

May 18, 2021
Honolulu, Hawai'i

Amend Interim Instream Flow Standards for Wai'oli Stream
In the Surface Water Hydrologic Unit of Wai'oli (2018)
Wai'oli Stream, Halele'a, North Kaua'i

SUMMARY OF REQUEST:

Staff is requesting that the Commission consider the recommendations for amending the interim instream flow standard (interim IFS) for one stream in the Wai'oli surface water hydrologic unit in North Kaua'i:

WAI'OLI (2018): Wai'oli Stream

LOCATION MAP: See Figure 1

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 one stream in North Kaua'i.

The current interim IFS for the stream being considered was established under Hawaii Administrative Rules (HAR) §13-169-48, which, in pertinent part, reads as follows:

Interim instream flow standard for Kaua'i. The Interim Instream Flow Standard for all streams on Kauai, as adopted by the commission on water resource management on June 15, 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 off stream 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 October 8, 1988. Following the initial registration of stream diversions works, any new or substantially modified stream diversion works structure requires a permit for construction and amendment to the interim IFS.

Based upon the best available information, as presented in the Instream Flow Standard Assessment Report (IFSAR)¹ (see Exhibit 1) and provided in the informational submittal presented to the Commission at the regularly scheduled meeting on April 20, 2021 (see Exhibit 2), staff have developed a recommendation that seeks to balance public trust uses and is supported by the Wai‘oli Valley Taro Hui (Hui) (see Exhibit 3).

Understanding that the availability of hydrologic data in this stream is limited, as new data are developed, decisions may be revised by a future Commission action. 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 Code.

The assessment of instream uses for the Wai‘oli hydrologic unit will address the interim IFS for Wai‘oli Stream (Figure 1).

Water from the main stem of Wai‘oli Stream is conveyed to the tributary on the right bank via a mānowai at about the 160 foot elevation. Diversion 1412 (i.e., the po‘owai) then conveys water to the East Wai‘oli Ditch (Figure 2). The end users of the East Waioli Ditch (i.e., the auwai) are kalo farmers that are part of the Wai‘oli Valley Taro Hui.

TRADITIONAL AND CUSTOMARY NATIVE HAWAIIAN RIGHTS AND PRACTICES

- 1) The identity and scope of cultural, historical, and natural resources and traditional and customary Native Hawaiian rights exercised in the area.

In summary, the community frequents Hanalei Bay and Wai‘oli Stream, which both serve as a habitat for a range of native stream animals, including ‘o‘opu nake‘a (*Awaous guamensis* or freshwater goby), ‘o‘opu naniha (*Stenagobius hawaiiensis* or Naniha goby), ‘ōpae kala‘ole (*Atyoida bisulcate* or spineless shrimp), ‘ōpae ‘oeha‘a (*Macrobrachium grandimanus* or Hawaiian prawn), and hīhīwai or wī (*Neritina granosa*). The community have long fished and gathered in these waters with nets, poles, and kahe (a ramp-like structure made from bamboo)—some of which they make themselves. And, just as the farmers provide kalo for the people of Kaua‘i, the community help to feed those who fish and gather alongside them by sharing their catch². Although fishing, hunting, and gathering are prevalent subsistence practices, it is

¹ <https://dlnr.hawaii.gov/cwrmsurfacewater/ifs/2018-Waioli/>

² Vaughan, M.B. 2018. Kaiāulu: Gathering Tides. ISBN 9780870719226

important to note that the Hui also perpetuates religious and spiritual traditions. For example, several members highlighted the significance of pule (prayer), while others gather fresh water for ho'okupu (offering). The Hui has historic and ongoing traditional and customary practices exercised throughout this kalana, including the use of kalana itself.

- 2) The extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action.

The proposed IIFS is not anticipated to affect or impair traditional and customary practices of Native Hawaiians identified in this kalana, but instead will help to support and protect them by ensuring, even during drought or low-flow scenarios, a balanced and customary approach to water distribution.

- 3) What feasible action, if any, could be taken by the Commission within regard to this application to reasonably protect Native Hawaiian rights.

The Commission can recognize the range of Traditional and Customary rights and practices that exist including but not limited to the lo'i kalo, gathering in and around the stream and 'auwai, spiritual practices, and the traditional land and water management system of kalana.

Figure 1. USGS topographic map of the Wai'oli hydrologic unit, registered diversions (ID) and irrigation systems in Kaua'i.

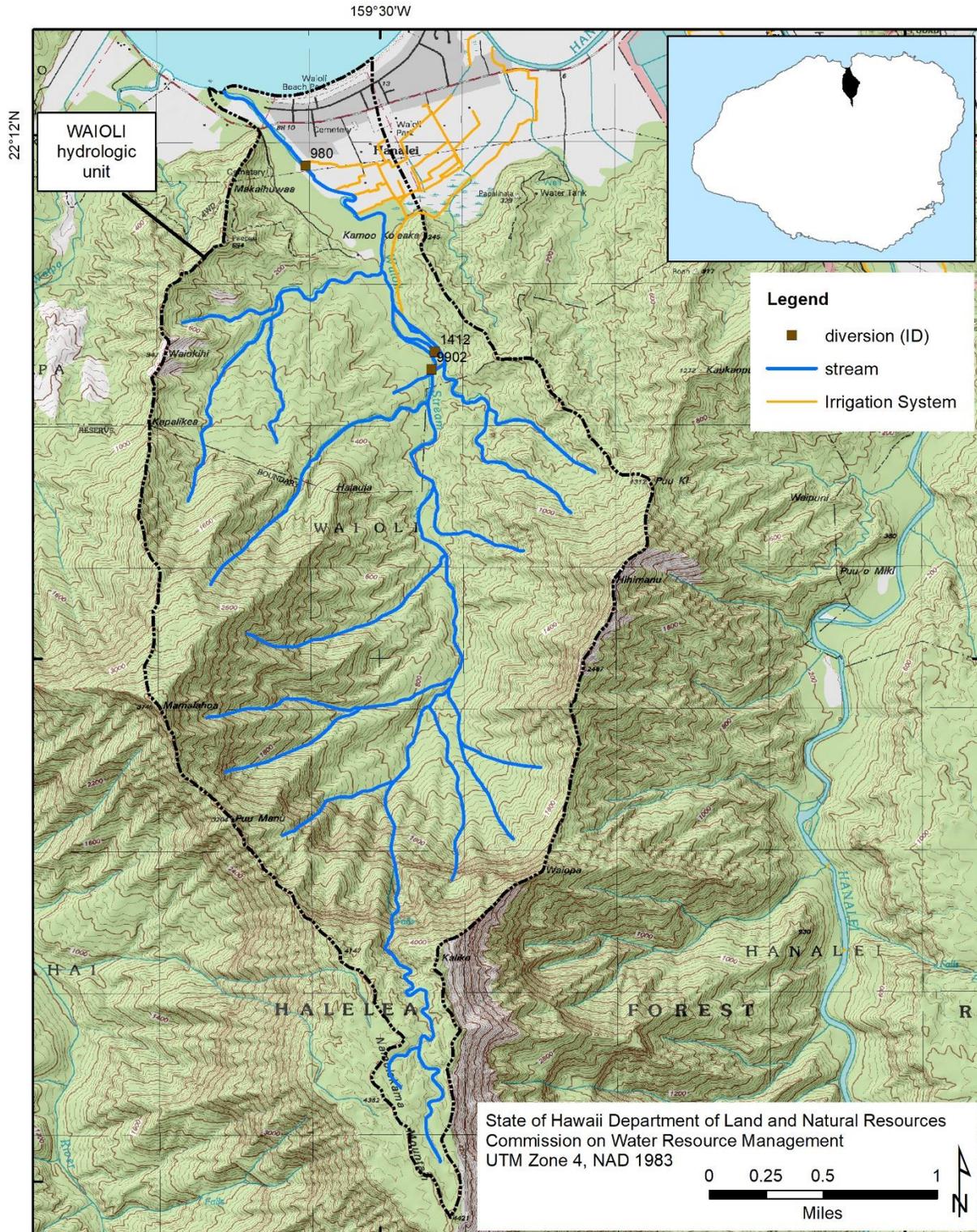
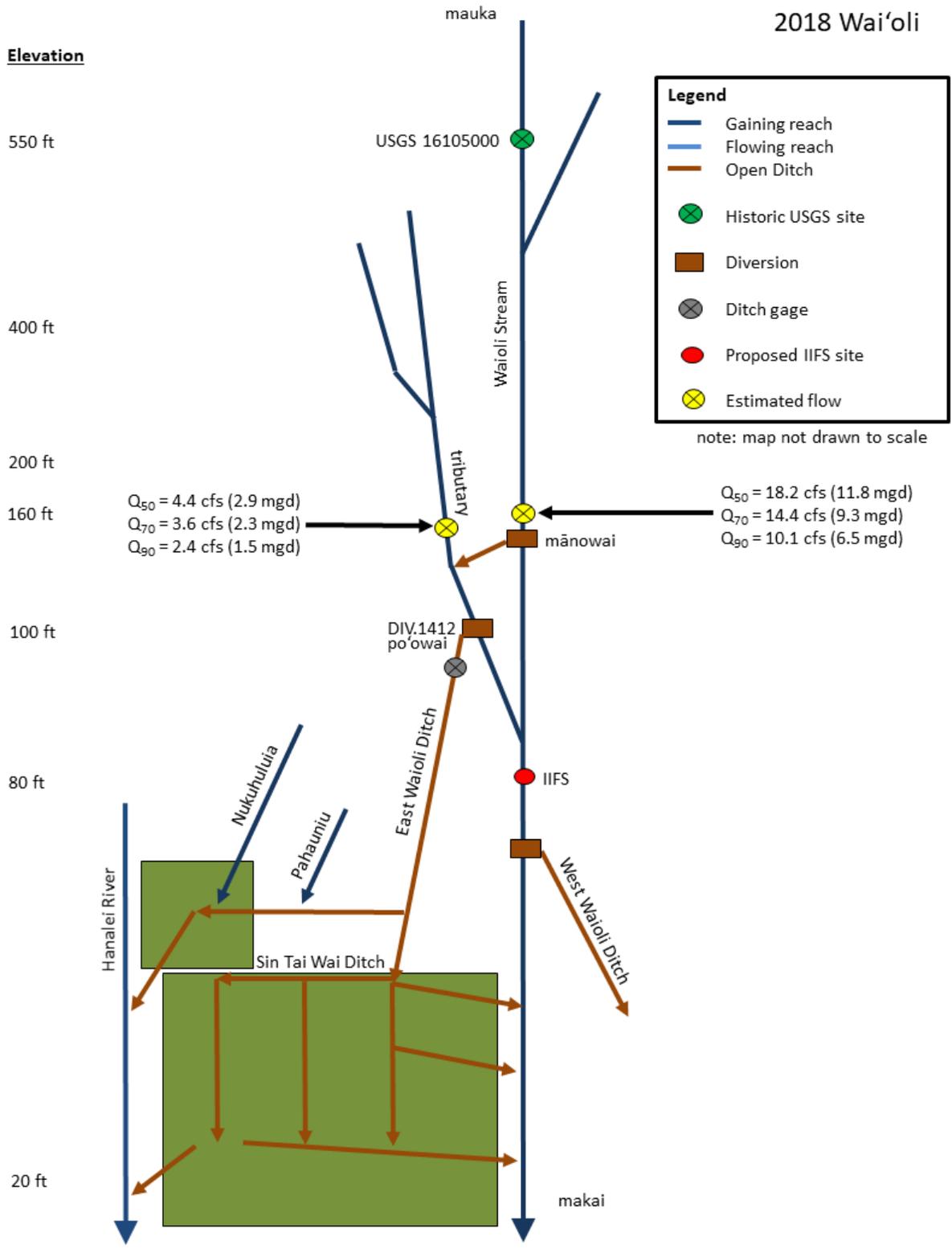


Figure 2. Schematic depiction of Wai'oli Stream, historic USGS monitoring station, and estimated flows, in relation to the East Wai'oli Ditch, lo'i and associated ho'i in the Wai'oli and Hanalei area.



RECOMMENDATIONS

- **Proposed Action: Amended Interim IFS**
Staff recommends that one measurable interim IFS be established for Wai‘oli Stream near an altitude of 80 feet, below the confluence of Wai‘oli Stream and the Wai‘oli tributary on the right bank. The interim IFS shall be established at a flow of 6.3 cfs (4.0 mgd) at all times, unless the Commission declares an emergency or water shortage. Supporting the Native Hawaiian custom of keeping half of the stream’s flow remaining in the stream³, this value represents 50% of the estimated 90th percentile flow (Q₉₀) at the po‘owai, which was estimated to be 12.5 cfs (8.0 mgd). Thus, it is expected that during drought conditions, only 50% of the water, shall be diverted from the stream in order to protect instream values. This results in a varying amount of water for kalo production based on the amount of water flowing in the stream (Table 2). The interim IFS may be revised by future Commission action as more data are gathered.

Table 2. Low-flow duration values in Wai‘oli Stream, Wai‘oli tributary, and downstream points based on the proposed IIFS.

Location	Q ₅₀	Q ₇₀	Q ₉₀
Wai‘oli Stream above mānowai	18.2 (11.8)	14.4 (9.3)	10.1 (6.5)
Estimated tributary inflow on right bank	4.4 (2.9)	3.6 (2.3)	2.4 (1.5)
Total water available at po‘owai	22.6 (14.6)	18.0 (11.6)	12.5 (8.0)
IIFS below confluence of tributary with Wai‘oli Stream	6.3 (4.0)	6.3 (4.0)	6.3 (4.0)
Available at the po‘owai	16.3 (10.6)	11.7 (7.6)	6.3 (4.0)

- **Monitoring**
 - The Wai‘oli Valley Taro Hui will monitor East Wai‘oli Ditch below the Diversion 1412 intake and report the quantity of water removed at the po‘owai to the Commission quarterly (e.g., estimated daily flows based on frequent readings). Staff shall work with the Wai‘oli Valley Taro Hui to install a gaging device (e.g., Parshall Flume). Readings shall be taken on a sub-weekly basis (i.e., 3 to 4 times per week), with water use reporting to the Commission on a quarterly basis.
 - Staff shall make periodic low-flow measurements in the stream and at the ditch intake.
 - Staff will work with the Wai‘oli Valley Taro Hui to make synoptic measurements within Wai‘oli to better understand gains in streamflow from the historic USGS station to the mānowai.
- **Evaluation**
 - Within five 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.

³ Dr. Lilikalā Kame‘eleihiwa testimony in Waiāhole CCHOA95-1, Commissions FOF No. 976 (CCHOA95-1 Dec. 24, 1997) and Emma Metcalf Nakuaina, Ancient Hawaiian Water Rights: And Some of the Customs Pertaining to Them, in Hawaiian Almanac & Annual For 1894. (1893) p. 79.

- As the current lack of data regarding stream flows have affected Commission staff's ability to estimate low-flow characteristics, if sufficient data are gathered to warrant revising the interim IFS, that will be done at a future Commission date.
- Traditional and Customary Native Hawaiian Rights and Practices
 - Per HRS 174C-101, the Commission recognizes the range of Traditional and Customary practices that exist in this watershed including but not limited to lo'i kalo, gathering in and around the stream and 'auwai, spiritual practices, and the traditional land and water management system of kalana.

Ola i ka wai,

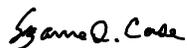


M. KALEO MANUEL
Deputy Director

Note: Exhibits are available from the Commission website at
<http://dlnr.hawaii.gov/cwrmsurfacewater/ifs/kauai/2018-waioli/>.

- Exhibit 1 DRAFT Instream Flow Standard Assessment Report PR-2021-01
<https://files.hawaii.gov/dlnr/cwrmsurfacewater/ifsar/PR202101-2018-WaioliDraft.pdf>
- Exhibit 2 Staff Submittal on April 20, 2021
<https://files.hawaii.gov/dlnr/cwrmsurfacewater/submittal/2021/sb20210420C3.pdf>
- Exhibit 3 Written testimony provided by the Wai'oli Valley Taro Hui, etal.
<https://files.hawaii.gov/dlnr/cwrmsurfacewater/submittal/2021/sb20210420C3T.pdf>

APPROVED FOR SUBMITTAL:



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