IN THE SUPREME COURT OF THE STATE OF HAWAIʻI

---o0o---

IN RE ʻĪAO GROUND WATER MANAGEMENT AREA HIGH-LEVEL SOURCE WATER USE PERMIT APPLICATIONS AND PETITION TO AMEND INTERIM INSTREAM FLOW STANDARDS OF WAIHEʻE RIVER AND WAIEHU, ʻĪAO, AND WAIKAPŪ STREAMS CONTESTED CASE HEARING

NO. SCAP-30603

APPEAL FROM THE COMMISSION ON WATER RESOURCE MANAGEMENT
(CASE NO. CCH-MA06-01)

AUGUST 15, 2012

RECKTENWALD, C.J., NAKAYAMA, AND MCKENNA, JJ.,
AND CIRCUIT JUDGE TRADER, IN PLACE OF DUFFY, J., RECUSED,
WITH ACOBA, J., CONCURRING SEPARATELY

OPINION OF THE COURT BY NAKAYAMA, J.

I. INTRODUCTION

Nā Wai ʻEhā, or "the four great waters of Maui," is the collective name for the Waiheʻe River and the Waiehu, ʻĪao, and Waikapū Streams. The case before the court began in June 2004 when Petitioners-Appellants/Cross-Appellees Hui[1] O Nā Wai ʻEhā

[1] A "hui" is defined as, inter alia, a "[c]lub, association, society, corporation, company, institution, organization, band, league, firm, joint ownership, partnership, union, alliance, troupe, [or] team." Mary

continue...

and Maui Tomorrow Foundation, Inc. ("Hui/MTF"), through Earthjustice, petitioned Appellee/Cross-Appellee Commission on Water Resource Management ("the Commission") to amend the Interim Instream Flow Standards ("IIFS") for Nā Wai ʻEhā, which had been in place since 1988. Around the same time, several parties, including Applicant-Appellee/Cross-Appellant Maui County Department of Water Supply ("MDWS"), and Applicants-Appellees/Cross-Appellees Hawaiian Commercial & Sugar Company ("HC&S") and Wailuku Water Company ("WWC"), filed Water Use Permit Applications ("WUPA") for the same area. The Commission held a combined case hearing to resolve the IIFS and WUPA; in addition to the petitioner and applicants, the Office of Hawaiian Affairs ("OHA") applied to participate in the hearing. The current appeal seeks review of the Commission's resulting Findings of Fact, Conclusions of Law ("FOF/COL"), and Decision and Order ("D&O"), in which the Commission amended the IIFS for two of the four streams, and substantially retained the existing IIFS for the two remaining streams as measured above diversions.[2] The FOF/COL and D&O also resolved several WUPA; the Commission's

[1]...continue
Kawena Pukui & Samuel H. Elbert, Hawaiian Dictionary 86 (rev. ed. 1986).

[2] The Commission's FOF/COL D&O differs from the 1988 IIFS in one important respect. In 1988, the Commission set the IIFS as the status quo at that time "without further amounts of water being diverted offstream through new or expanded diversions." Haw. Admin. Rules § 13-169-48 (1988). The FOF/COL D&O states that the IIFS will "remain" as established above diversions, but does not contain the restriction limiting new or expanded diversions.

resolution of the WUPA is not before the court on appeal.

Hui/MTF and OHA appeal on related grounds. Their primary complaint is that the Commission erred in balancing instream and noninstream uses, and therefore the IIFS do not properly protect traditional and customary native Hawaiian rights, appurtenant water rights, or the public trust. Both parties also contest the Commission's treatment of diversions, including the alternative source Well Number 7 ("Well No. 7"), a water well on HC&S's plantation that could be used to irrigate HC&S's cane fields. The parties contest the Commission's determination that HC&S will not be required to pump Well No. 7 to its full capacity, a decision that resulted in a higher estimated allowable diversion for HC&S, and lower IIFS for the streams.

MDWS's cross-appeal asks the court to clarify the priority of noninstream municipal use in setting the IIFS.

And finally, the Commission, HC&S, and WWC argue that the court does not have jurisdiction to hear Hui/MTF's and OHA's appeals.

As explained below, the court holds that it has jurisdiction in the instant case, and takes this opportunity to expand upon the jurisdictional analysis from In re Water Use Permit Applications "Waiāhole I", 94 Hawai'i 97, 9 P.3d 409, (2000). In reviewing Hui/MTF's and OHA's points of error, the

court concludes that the Commission on Water Resource Management erred in several respects. First, in considering the effect of the IIFS on native Hawaiian practices in Nā Wai ʻEhā, the Commission failed to enter findings of fact and conclusions of law regarding the effect of the amended IIFS on traditional and customary native Hawaiian practices in Nā Wai ʻEhā, and regarding the feasibility of protecting any affected practices. Second, the Commission's analysis of instream uses was incomplete, as it focused on amphidromous species and did not fully consider other instream uses to which witnesses testified during the hearings. Third, the Commission erred in its consideration of alternative water sources and in its calculation of diverting parties' acreage and reasonable system losses. The court must vacate the Commission's June 10, 2010 Findings of Fact, Conclusions of Law, Decision and Order, and remand the case for further proceedings.

II. BACKGROUND

A. Nā Wai ʻEhā Water Systems

1. Surface Water[3]

Nā Wai ʻEhā are the Waiheʻe River and Waiehu, ʻĪao, and

[3] "'Surface water' means both contained surface water—that is, water upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other watercourses, lakes, reservoirs, and coastal waters subject to state jurisdiction—and diffused surface water—that is, water occurring upon the surface of the ground other than in contained water bodies. Water from natural springs is surface water when it exits from the spring onto the earth's surface." Hawaiʻi Revised Statutes ("HRS") § 174C-3 (1993). Diffused surface water is "Water, such a rainfall runoff, that collects and flows on the ground but does not form a watercourse." Black's Law Dictionary 1728 (9th ed. 2009).

Waikapū Streams. The Waiheʻe River is the principal water source in Nā Wai ʻEhā; it is about 26,585 feet long, and its watershed covers 4,500 acres. From 1984-2005, United States Geological Survey ("USGS") data shows streamflow upstream of all diversions as follows: the Q50[4] flow was 34 million gallons per day ("mgd"), the Q70[5] flow was 29 mgd, the Q90 flow was 24 mgd, and the Q100 flow was 14 mgd. The Waiheʻe River's two main diversions are Waiheʻe Ditch and Spreckels Ditch. See Section II.A.3., infra, for more information about the ditches. The two ditches are capable of diverting all of the dry-weather flow available at the intakes, however, even if all the water is being diverted, streamflow immediately downstream of the intakes may exist because of leakage through or subsurface flow beneath the dams at these sites. The dry-weather flow downstream of the intakes is commonly about 0.1 mgd, but the stream may not have continuous mauka-to-makai surface flow.

The Waiehu Stream is formed by the confluence of North and South Waiehu Streams; it is about 23,700 feet long, and its

[4] Discussions of the volume of water in a stream utilize flow-duration curves to express the percentage of time that streamflows were equaled or exceeded during a given period of record. The Q50 flow, also known as the median flow, is the flow that is equal or exceeded 50 percent of the time; the Commission found that the Q50 flow is "reflective of typical flow conditions."

[5] To illustrate the previous footnote, the Q70 flow is the volume of water that is equaled or exceeded 70 percent of the time during any given time period. The Waiheʻe River showed streamflows of at least 29 mgd 70 percent of the time from 1984-2005.

watershed covers about 6,600 acres. Gaging stations on both branches of the Waiehu Stream were discontinued in 1917, but USGS used historical data and record-extension techniques to estimate flows above all diversions for North Waiehu Stream from 1984-2005 as follows: the Q50 flow was between 3.1 to 3.6 mgd, the Q70 flow was between 2.3 to 2.7 mgd, the Q90 flow was between 1.4 to 2.7 mgd, and the Q100 flow was 1.6 mgd (as measured in March 1915). For South Waiehu Stream, USGS utilized the same record extension techniques, and estimated the 1984-2005 flows as follows: the Q50 flow was between 2.4 to 4.2 mgd, the Q70 flow was between 1.9 to 2.8 mgd, the Q90 flow was between 1.3 to 2.0 mgd, and the Q100 flow was 1.5 mgd (recorded in July 1913). The Waiheʻe and Spreckels Ditches divert water from both North and South Waiehu Streams; in addition, the North Waiehu Ditch diverts from the North Waiehu Stream and the Cerizos Kuleana Ditch diverts from the South Waiehu Stream. There is extensive channel erosion below the Spreckels Ditch on South Waiehu Stream, with a 12-foot drop in the elevation of the stream just below the diversion, and there is a vertical concrete apron located in Waiehu Stream. Most of the water is diverted from North and South Waiehu Streams at the North Waiehu Ditch and Spreckels Ditch, respectively; due to these diversions and leakage, Waiehu Stream does not flow continuously from mauka to makai.

ʻĪao Stream is the second-largest stream in Nā Wai ʻEhā;

it is about 38,000 feet long, and its watershed covers about 14,500 acres. USGS calculated the 1984-2005 flows above all diversions as follows: the Q50 flow was 25 mgd, the Q70 flow was 18 mgd, the Q90 flow was 13 mgd, and the Q100 flow was 7.1 mgd. The two main diversions off the ʻĪao Stream are the ʻĪao-Waikapū/ʻĪao-Maniania Ditches at an altitude of 780 feet, and the Spreckels Ditch at 260 feet. The United States Army Corps of Engineers channelized significant portions of ʻĪao Stream's lower reaches and hardened the stream bed and banks with concrete for flood control and drainage. About 2.5 miles above the mouth of the Stream, the concrete channel includes a 20-foot vertical drop. USGS estimates that ʻĪao Stream loses 6.3 mgd in reaches downstream of the ʻĪao-Maniania ditch diversion that are not lined with concrete. In absence of ditch return flows or runoff during and following rainfall, ʻĪao Stream is dry and does not flow continuously from mauka to makai.

The Waikapū Stream is the southern-most stream and the longest of the four streams; it is about 63,500 feet in length, with a watershed of about 9,000 acres. USGS, using record extension techniques, estimated the 1984-2005 flows above all diversions as follows: the Q50 flow was between 4.8 to 6.3 mgd, the Q70 flow was between 3.9 to 5.2 mgd, and the Q90 flow was between 3.3 to 4.6 mgd. The lowest recorded flow for Waikapū Stream was 3.3 mgd, in October 1912. There are three diversions

off the Waikapū Stream: the South Side Waikapū Ditch (also known as the South Waikapū Ditch) near an altitude of 1,120 feet, the Waiheʻe Ditch, and the Reservoir 6 Ditch. The Waikapū Stream is commonly dry downstream of all diversions, both because of the diversions and because of infiltration losses into the streambed; the Stream does not flow continuously from mauka to makai.

2. Ground Water[6]

There are three types of ground water in Nā Wai ʻEhā water systems: dike-impounded, the basal freshwater lens, and perched. Dike-impounded ground waters occur at high elevations; basal freshwater lenses and perched waters occur at lower elevations and closer to the coast.

The dikes at higher elevations are low-permeability, so water builds up behind them. The upper reaches of Nā Wai ʻEhā streams intersect the dike-impounded ground water so the upper reaches have year-round streamflow, even during dry periods. The portions of the stream joined by the dike-impounded water are described as "gaining" because ground water contributes to streamflow.

The basal freshwater lens system is contained in volcanic rocks and sedimentary deposits. Perched water also

[6] "'Ground water' means any water found beneath the surface of the earth, whether in perched supply, dike-confined, flowing, or percolating in underground channels or streams, under artesian pressure or not, or otherwise." HRS § 174C-3.

occurs in the sedimentary deposits. In the lower reaches of the streams where an unsaturated zone exists between the streams' channel bottoms and the water table, stream waters migrate from the stream beds to the basal lenses, and the streams are described as "losing." Some of the stream channels intersect the basal freshwater lens near the mouths of the streams, making the streams "gaining" in those areas.

The Commission considered the IIFS for Nā Wai ʻEhā with the WUPA for the high-level dike-impounded ground water. As the Hearings Officer, Dr. Lawrence H. Miike, explained, the Commission decided to combine the issues into one contested case hearing because the water systems are all connected and considering the WUPA and IIFS together would allow the Commission "to get a bigger picture and to be able to try to reach a more rational and reasonable decision . . . ." One example of the interconnectedness of the high-level dike-impounded ground water and the surface waters is the tunnel system. Several tunnels tap dike-impounded ground water and discharge directly into the streams. In some cases, denial of a WUPA for dike-impounded ground water results in additional water contributing to streamflow.

3. Ditches

There are two primary and two secondary systems that distribute water diverted from Nā Wai ʻEhā. The primary systems

are WWC's ditch system and HC&S's reservoir/ditch system. Nine active diversions feed the primary distribution system: two on Waiheʻe River, one on North Waiehu Stream, one on South Waiehu Stream, two on ʻĪao Stream, and three on Waikapū Stream. There are two major ditches in the system: the Waiheʻe and Spreckels Ditches. The WWC distribution system involves eleven registered stream diversions, two major ditches, seven minor ditches, and sixteen reservoirs; HC&S shares in the cost and maintenance of portions of this system. HC&S also operates a diversion intake on South Waiehu Stream at the Spreckels Ditch, a diversion intake on ʻĪao Stream at the Spreckels Ditch, and the Spreckels Ditch from Reservoir 25 to its terminus at HC&S's Reservoir 73. The waters that enter the distribution system travel by gravity flow in primary ditches through uplands into reservoirs that in turn deliver the water into smaller ditches for end use.

The secondary systems are the so-called "kuleana"[7] ditches/pipes that either have an intake directly in a stream or receive water from the primary systems and the MDWS water treatment plants. The Commission identified seventeen kuleana ditch/pipe systems. Fourteen kuleana systems are connected to the primary distribution systems; three kuleana intakes connect

[7] The term "kuleana" is used by the parties to describe the distribution system and users who were not charged for water delivery; whether the users have riparian or appurtenant rights had not been determined at the time of the Commission's hearings.

directly to the streams.

B. Procedural History

On July 21, 2003, the Commission designated the ʻĪao Aquifer System a Ground Water Management Area ("GWMA"). After a water source is designated as a GWMA, existing users have one year to file WUPA. See Hawaiʻi Revised Statutes ("HRS") § 174C-50(c) (1993) ("An application for a permit to continue an existing use must be made within a period of one year from the effective date of designation.") The water code provides that the Commission may issue permits for existing reasonable and beneficial uses, and places the burden of proof on the applicant to show that it satisfies the relevant criteria. HRS §§ 174C-49(a), 174C-50 (1993). As discussed in the following subsection, several parties filed such WUPA for ground water sources.

The water code also provides that "[a]ny person with the proper standing may petition the commission to adopt an interim instream flow standard for streams in order to protect the public interest pending the establishment of a permanent instream flow standard." HRS § 174C-71(2)(A) (1993). Hui/MTF filed such a petition; it is the Commission's resolution of this petition that is currently before the court on appeal.

On March 13, 2008, during the pendency of the Hearings, the Commission also designated the four streams of Nā Wai ʻEhā a Surface Water Management Area ("SWMA"). Like the GWMA

designation, the SWMA designation triggered WUPA requirements. The resolution of those WUPA are not currently before the court, but they are relevant because the Commission utilized estimates of expected surface water use permits in determining the IIFS for the water system.

1. Water Use Permit Applications

MDWS, HC&S, and WWC's predecessor in interest, Wailuku Agribusiness Company, Inc.,[8] filed timely WUPA for ʻĪao Aquifer sources. Hui/MTF and OHA filed objections to the WUPA. The Commission held public hearings on the WUPA on October 28, 2004; April 22, 2005; and February 2, 2006. Prior to the close of the third hearing, several attendees, including MDWS, WWC, Hui/MTF, and OHA, verbally requested that the Commission hold a Contested Case Hearing ("CCH") regarding the WUPA. Subsequently, the parties filed written petitions to that effect.

2. Petition to Amend Interim Instream Flow Standards

In June of 2004, Hui/MTF filed a Petition to Amend Interim Instream Flow Standards. In its petition, Hui/MTF argued that the then-existing standards, which had been in place since 1988, lacked any scientific basis and merely preserved the status quo without addressing the public trust, environmental concerns, native Hawaiian practices, outdoor and recreational activities,

[8] WWC filed Requests to Transfer Wailuku Agribusiness's permits to WWC.

or aesthetic and scenic values, as required by the water code. Hui/MTF requested that the Commission establish scientifically-based IIFS and order restoration of all streamflows not currently put to beneficial use.

HC&S and Wailuku Agribusiness Company filed comments to the petition, largely arguing that their use is reasonable and beneficial, that the petition did not prove the necessity of establishing new standards, and that the Petition did not show how native Hawaiian practitioners would use the water or how much they would need to use. Hui/MTF responded that the burden falls on the Commission, not on Hui/MTF, to determine reasonable IIFS and to protect instream public trust uses and native Hawaiian rights.

3. Contested Case Hearing

At its February 15, 2006 meeting, the Commission decided that a CCH would be held for the ground water WUPA and the IIFS together. On May 4, 2006, the Commission released a "Notice of a Combined Contested Case Hearing (CCH-MA-06-01) Concerning Water Use Permit Applications For Maui Department of Water Supply, Hawaiian Commercial and Sugar, and Wailuku Water Company, LLC; Iao Ground Water Management Area, Maui, and Petitions to Amend the Interim Instream Flow Standards for Iao, Waiehu, Waihee, & Waikapu Streams." One of the Commissioners, Dr. Lawrence Miike, was appointed Hearings Officer. After a

hearing, Dr. Miike granted standing to five of the parties presently before the court: HC&S, Hui/MTF, MDWS, OHA, and WWC.

Dr. Miike held twenty-three days of hearings between December 3, 2007 and March 4, 2008; by the end of the evidentiary phase of the hearing, seventy-seven witnesses had testified and over six hundred exhibits had been accepted into evidence. After the conclusion of the Hearings, Dr. Miike reopened evidence, on motions of two parties, to admit two additional exhibits: HC&S offered a study it commissioned from John Ford, an environmental consultant, which had not been completed at the time of the Hearing, and OHA offered a portion of an Environmental Impact Statement Preparation Notice for the Waiʻale Water Treatment Facility. HC&S, MDWS, WWC, and Hui/MTF submitted proposed Findings of Fact and Conclusions of Law. OHA joined Hui/MTF's proposals.

4. Dr. Miike's Proposed Findings of Fact, Conclusions of Law, Decision and Order

On April 9, 2009, Dr. Miike released his proposed FOF/COL D&O ("Proposed FOF/COL"). The Proposed FOF/COL consisted of 617 FOF regarding Nā Wai ʻEhā's water systems, fish and wildlife habitats, traditional and customary native Hawaiian practices, users and uses, and the projected economic impact of restricting noninstream uses. The Proposed FOF/COL also included 297 COL, on topics including instream values, users and uses,

alternative water resources, system losses, economic impacts of restricting noninstream uses, IIFS, and WUPA. Many of the Proposed FOF/COL were ultimately adopted by the Commission in the final FOF/COL, as discussed in subsequent sections, infra.

Dr. Miike's Proposed Decision amended the IIFS for all four streams, as follows: the IIFS for the Waiheʻe River would be 14 mgd downstream of diversions; for North and South Waiehu Streams, the IIFS would be 2.2 mgd and 1.3 mgd, respectively; for ʻĪao Stream, the IIFS would be 13 mgd; and for Waikapū Stream, the IIFS would be 4 mgd, with contingencies to adjust the IIFS or its point of measurement. The proposed IIFS limited diversions enough to increase streamflow to a level that should have established mauka-to-makai flow in all four streams. The Proposed FOF/COL also concluded that Well No. 7 is an alternative source for HC&S, and that it can supply 14 mgd of HC&S's water requirements.

The Commission permitted parties to file written Exceptions to Dr. Miike's Proposed FOF/COL and D&O; each party filed such Exceptions. On October 15, 2009, the Commission convened to hold a hearing on the parties' Exceptions.

In their written exceptions and their presentations to the Commission, Hui/MTF and OHA argued that the IIFS should be higher for several reasons. They argued that the Commission should allow fewer commercial diversions because the companies'

actual water needs are lower than the Commission's estimates, that the diverting parties should be required to eliminate system waste by lining ditches and reservoirs, and that HC&S should be required to pump Well No. 7 to full capacity. Regarding kuleana rights, Hui/MTF and OHA claimed that while the provisions made for kuleana users were adequate for current and planned uses of kuleana users who testified, they were inadequate to provide for all kuleana users in the system. Furthermore, they argued that the Commission should not defer to future proceedings for determinations of appurtenant rights and the reasonable-beneficial uses of noninstream users.

MDWS objected to several of the Proposed FOF/COL. MDWS argued that the IIFS for ʻĪao Stream would restrict diversions such that it could not operate its ʻĪao Water Treatment Facility to serve domestic needs of Maui residents. MDWS also objected to several of the Proposed FOF/COL indicating that the IIFS should be set without considering "offstream public trust uses, such as the public water supply."

WWC's exceptions argued that the Proposed FOF/COL did not properly balance instream and noninstream uses, and were too severe in their limitations of noninstream uses. WWC argued that nothing in the water code required the Commission to establish mauka-to-makai streamflows, and that the Proposed FOF/COL's efforts to do so reflect an improper emphasis on instream values.

HC&S offered similar exceptions, arguing that the Proposed FOF/COL tipped the balance too sharply in favor of stream restoration. HC&S encouraged the Commission to consider the water system as a whole, instead of focusing on reestablishing mauka-to-makai streamflow in each individual stream. HC&S also argued that the Proposed FOF/COL did not adequately consider the economic impact of restricting HC&S's noninstream uses or of requiring HC&S to pump Well No. 7. HC&S emphasized that it employed about eight hundred workers on Maui, and that reduction in water "would jeopardize the viability of HC&S." If HC&S were to cease operation, HC&S argued, those eight hundred jobs, and the HC&S's other substantial contributions to the Maui economy would be lost.

5. The Commission's Final Findings of Fact, Conclusions of Law, Decision and Order

On June 10, 2010, the Commission released its final FOF/COL and D&O. The Commission reached 617 FOF and 276 COL, adopting most of the Proposed FOF/COL but revisiting some. Most notably, the D&O amended the IIFS for only the Waiheʻe River (to 10 mgd) and the North and South Waiehu Streams[9] (to 1.6 and 0.9

[9] The IIFS for South Waiehu Stream has not been implemented. Hui/MTF, OHA, MDWS, WWC, and HC&S entered into a series of stipulations suspending the implementation; the Commission approved each stipulation. The impetus for the stipulations appears to be complaints from kuleana users who did not participate in the CCH and who take water from the ditch system off South Waiehu Stream. South Waiehu Stream was one of the streams for which actual streamflow measurements were not available at the time of the hearings; the Commission utilized USGS estimates based on record extension techniques to continue...

mgd, respectively); it maintained the status quo, thereby not restricting any of the parties' diversions, for the ʻĪao and Waikapū Streams. It also lowered the amount of water HC&S was required to pump from Well No. 7 to 9.5 mgd, a significant decrease of 4.5 mgd from the Proposed FOF/COL.

Dr. Miike dissented from the decision. Dr. Miike agreed with the Commission majority regarding water requirements for kuleana users, MDWS, and WWC. Dr. Miike also agreed with most of the analysis regarding HC&S's irrigation requirements. The basis for Dr. Miike's dissent was the Commission majority's allocation of water between instream uses and HC&S's diversions. His strongest objection was to the Commission's treatment of Well No. 7; Dr. Miike would have required HC&S to pump higher quantities of water from the well during dry-weather conditions, thereby retaining more water in the streams for instream and downstream uses. Dr. Miike argued that the Commission's decision reflected a residual approach in that it set the IIFS as the amount of water remaining after satisfying all noninstream uses. Last, Dr. Miike objected to the Commission majority's evaluation of the economic impact of restricting HC&S's water. He asserted

[9]...continue
set the IIFS. In the time since the first stipulation, the Commission has worked on collecting actual streamflow data, and it started the process of determining and quantifying appurtenant rights of users on South Waiehu Stream. HC&S repaired a portion of its diversion infrastructure, and the parties have discussed modifications to the ditch system, pending final determination of appurtenant rights.

that the Commission cannot assume that the Proposed FOF/COL would have resulted in HC&S's "doomsday scenario" in which the water restrictions render its entire operation impractical. Dr. Miike argued that the accurate point of analysis would be the economic effect of limiting availability of water to the 15 percent of HC&S's fields that are in west Maui. Dr. Miike noted that, rather than providing this analysis, HC&S "instead outlined the consequences if its entire 35,000 acre sugar operations were ended." As Dr. Miike explained:

> Absent an economic analysis by HC&S, the Commission cannot assume that HC&S's doomsday scenario would result from an occasional 10.5 to 13.4 percent decrease of its irrigation requirements for 15 percent of its entire operations. Those decreases equate to only 1.6 to 2.0 percent of its irrigation requirements for its entire 35,000-acre operations, and then only on an occasional basis. In the absence of any information supporting its doomsday scenario, the Commission could not assume that HC&S's assertions overcame the presumption in favor of the public trust resource, the streams of Nā Wai ʻEhā.

Dr. Miike concluded that the Commission majority "has failed in its duties under the Constitution and the State Water Code as trustee of the state's public water resources."

6. Appellate Filings

On July 14, 2010, OHA and Hui/MTF filed their Notices of Appeal. On July 30, 2010, MDWS filed its Notice of Cross-Appeal. On February 23, 2011, MDWS, OHA, and Hui/MTF filed their Opening Briefs in the Intermediate Court of Appeals. On April 18, 2011, Hui/MTF filed an application to transfer the case to the supreme court; OHA joined this motion. On June 23, 2011,

this court accepted the application for transfer.

III. STANDARDS OF REVIEW

A. Judicial Review of the Water Commission's Decisions

The water code provides that "[j]udicial review of rules and orders of the commission under this chapter shall be governed by chapter 91. Trial de novo is not allowed on review of commission actions under this chapter." HRS § 174C-12 (1993). Chapter 91 articulates the standards of review applicable to appeals of agency decisions and provides:

> Upon review of the record the court may affirm the decision of the agency or remand the case with instructions for further proceedings; or it may reverse or modify the decision and order if the substantial rights of the petitioners may have been prejudiced because the administrative findings, conclusions, decisions, or orders are:
>
> > (1) In violation of constitutional or statutory provisions; or
> > (2) In excess of the statutory authority or jurisdiction of the agency; or
> > (3) Made upon unlawful procedure; or
> > (4) Affected by other error of law; or
> > (5) Clearly erroneous in view of the reliable, probative, and substantial evidence on the whole record; or
> > (6) Arbitrary, or capricious, or characterized by abuse of discretion or clearly unwarranted exercise of discretion.

HRS § 91-14 (g) (1993). "This court's review is . . . qualified by the principle that the agency's decision carries a presumption of validity, and appellant has the heavy burden of making a convincing showing that the decision is invalid because it is unjust and unreasonable in its consequences." In re Waiʻola O Molokaʻi, Inc., 103 Hawaiʻi 401, 420, 83 P.3d 664, 683 (2004)

(citations, brackets omitted).

B. Findings of Facts

"FOFs are reviewable under the clearly erroneous standard to determine if the agency decision was clearly erroneous in view of reliable, probative, and substantial evidence on the whole record." Id. at 421, 83 P.3d at 684 (citations, brackets omitted).

C. Conclusions of Law

"COLs are freely reviewable to determine if the agency's decision was in violation of constitutional or statutory provisions, in excess of statutory authority or jurisdiction of agency, or affected by other error of law." Id. (citations, brackets omitted).

D. Mixed Questions of Law and Fact

> A COL that presents mixed questions of fact and law is reviewed under the clearly erroneous standard because the conclusion is dependent upon the facts and circumstances of the particular case. When mixed questions of law and fact are presented, an appellate court must give deference to the agency's expertise and experience in the particular field. The court should not substitute its own judgment for that of the agency.

Waiāhole I, 94 Hawai'i at 119, 9 P.3d at 431 (citations, brackets omitted).

> An FOF or a mixed determination of law and fact is clearly erroneous when (1) the record lacks substantial evidence to support the finding or determination, or (2) despite substantial evidence to support the finding or determination, the appellate court is left with the definite and firm conviction that a mistake has been made.

Id. (citation). "We have defined 'substantial evidence' as

credible evidence which is of sufficient quality and probative value to enable a person of reasonable caution to support a conclusion." Id. (citation).

E. The State Water Resources Trust

The public trust in state water resources is a constitutional doctrine, and as such, "the ultimate authority to interpret and defend the public trust in Hawai'i rests with the courts of this state." Wai'ola, 103 Hawai'i at 421, 83 P.3d at 684.

> This is not to say that this court will supplant its judgment for that of the legislature or agency. However, it does mean that this court will take a 'close look' at the action to determine if it complies with the public trust doctrine and it will not act merely as a rubber stamp for agency or legislative action.

Id. at 422, 83 P.3d at 685.

F. Constitutional Questions

"We answer questions of constitutional law by exercising our own independent constitutional judgment based on the facts of the case. Thus, we review questions of constitutional law under the right/wrong standard." State v. Hanapi, 89 Hawai'i 177, 182, 970 P.2d 485, 490 (1998) (citations omitted).

IV. JURISDICTION

Before the court can consider the parties' points of error, it must first resolve a jurisdictional argument. Kernan v. Tanaka, 75 Haw. 1, 15, 856 P.2d 1207, 1215 (1993) (cert.

denied, 510 U.S. 1119 (1994)) ("Appellate courts have an obligation to insure they have jurisdiction to hear and determine each case.") The Commission, HC&S, and WWC argue that Hui/MTF and OHA do not have a right of appeal, and therefore the court has no jurisdiction in this matter. Hui/MTF and OHA both contend that the court's opinion in Waiāhole I resolves the issue and clearly establishes that the court has jurisdiction over appeals of IIFS determinations. As explained below, the court holds that it has jurisdiction in this case, and takes this opportunity to elaborate on the jurisdictional analysis from Waiāhole I.

The water code provides that "[j]udicial review of rules and orders of the commission under this chapter shall be governed by chapter 91." HRS § 174C-12. HRS § 91-14, the portion of chapter 91 relating to judicial review, states that, "[a]ny person aggrieved by a final decision and order in a contested case . . . is entitled to judicial review thereof under this chapter." HRS § 91-14(a) (1993). In previous cases interpreting this provision, the court has defined "contested case" as "an agency hearing that 1) is required by law and 2) determines the rights, duties, or privileges of specific parties." Pele Defense Fund v. Puna Geothermal Venture, 77 Hawai'i 64, 67-68, 881 P.2d 1210, 1213-14 (1994). Further, the court determined that a hearing is "required by law" if it is required by statute, by administrative rule, or by constitutional

due process. Id. at 68, 881 P.2d at 1214.

In this case, neither statute nor administrative rule mandates a hearing to establish an IIFS. HRS § 174C-71[10] governs the Commission's actions vis-a-vis the state's Instream Use Protection Program, and nothing in that statute requires the Commission to hold a hearing before establishing or amending an

[10] HRS § 174C-71, Protection of Instream Uses, provides, in relevant part, that the Commission shall:

> (2) Establish interim instream flow standards;
>
> (A) Any person with the proper standing may petition the commission to adopt an interim instream flow standard for streams in order to protect the public interest pending the establishment of a permanent instream flow standard;
>
> (B) Any interim instream flow standard adopted under this section shall terminate upon the establishment of a permanent instream flow standard for the stream on which the interim standards were adopted;
>
> (C) A petition to adopt an interim instream flow standard under this section shall set forth data and information concerning the need to protect and conserve beneficial instream uses of water and any other relevant and reasonable information required by the commission;
>
> (D) In considering a petition to adopt an interim instream flow standard, the commission shall 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;
>
> (E) The commission shall grant or reject a petition to adopt an interim instream flow standard under this section within one hundred eighty days of the date the petition is filed. The one hundred eighty days may be extended a maximum of one hundred eighty days at the request of the petitioner and subject to the approval of the commission;
>
> (F) Interim instream flow standards may be adopted on a stream-by-stream basis or may consist of a general instream flow standard applicable to all streams within a specified area[.]

HRS § 174C-71(2) (1993).

IIFS. In fact, the code indicates that the Commission need not hold a hearing; the Code defines the IIFS as "a temporary instream flow standard of immediate applicability, adopted by the commission without the necessity of a public hearing, and terminating upon the establishment of an instream flow standard." HRS § 174C-3. The Commission's administrative rules are identical to the water code in relevant regard, so there is no rule-based requirement to hold a hearing.[11]

This does not foreclose judicial review of the Commission's actions, as there remains a third route whereby a hearing may be "required by law": there may be a constitutional due process requirement. In determining whether a party has a due process right to an administrative hearing, the court must first resolve whether the party's asserted interest is "'property' within the meaning of the due process clauses of the federal and state constitutions." Sandy Beach Defense Fund v. City Council of City and Cnty. of Honolulu, 70 Haw. 361, 376, 773 P.2d 250, 260 (1989) (citing Aquiar v. Hawai'i Housing Auth., 55 Haw. 478, 495, 522 P.2d 1255, 1266 (1974)). "To have a property interest in a benefit, a person clearly must have more than an abstract need or desire for it. He must have more than a

[11] As Hawai'i Administrative Rules § 13-169-2 states, an IIFS is "a temporary instream flow standard of immediate applicability, adopted by the commission without the necessity of a public hearing, and terminating upon the establishment of an instream flow standard." Haw. Admin. Rules § 13-169-2.

unilateral expectation of it. He must, instead, have a legitimate claim of entitlement to it." Id. (quoting Bd. of Regents v. Roth, 408 U.S. 564, 577 (1972)).

The court has had several opportunities to interpret due process property interests as affected by the water code. In the case most similar to the current case, Waiāhole I, this court considered new and existing WUPA and IIFS for the Waiāhole ditch system, a water system that provides water from Oahu's windward side to the island's leeward side. Waiāhole I, 94 Hawai'i at 110, 9 P.3d at 422. Waiāhole I contains extensive analysis and interpretation of the water code, and will be discussed in subsequent sections of this opinion. Regarding jurisdiction, however, the opinion provides only brief analysis. First, the court explained that it had jurisdiction over the appeal of the existing WUPA because both the HRS and the administrative rules required a hearing as part of the WUPA process. Waiāhole I, 94 Hawai'i at 119-20 n.15, 9 P.3d at 431-32 n.15. Second, with regard to the petitions to amend the IIFS and the new WUPA, the court stated that "constitutional due process mandates a hearing in both instances because of the individual instream and offstream 'rights, duties, and privileges' at stake." Id. (quoting Puna Geothermal, 77 Hawai'i at 68, 881 P.2d at 1214).

The parties dispute the import of the above-quoted sentence. Hui/MTF argues that this "holding" from Waiāhole I

"made clear that [the court] had independent jurisdiction over IIFS petitions." The Commission, HC&S, and WWC argue that the Waiāhole I court's citation to Puna Geothermal indicates that the court had jurisdiction over the IIFS in that case only because the appeal also challenged the Commission's resolution of WUPA; they argue that because no party appealed from the WUPA in the present case, Waiāhole I is distinguishable and the court, therefore, lacks jurisdiction.

First, a review of Puna Geothermal. There, the court considered whether it had jurisdiction over an appeal following the Department of Health's ("DOH") resolution of Puna Geothermal Ventures's ("PGV") applications for permits to build a well field and a power plant. 77 Hawai'i at 66, 881 P.2d at 1212. The DOH held two "public informational hearings," denied PGV's request for a CCH, and ultimately granted PGV's permit applications. Id. When the Pele Defense Fund ("PDF") sought judicial review of the DOH's actions, PGV filed a motion to dismiss, arguing that the court lacked jurisdiction because there had been no contested case. Id. On appeal, this court concluded that PDF had a constitutional due process right to a hearing before the DOH. Id. at 68, 881 P.2d at 1214. The court held,

> as a matter of constitutional due process, an agency hearing is also required where the issuance of a permit implicating an applicant's property rights adversely affects the constitutionally protected rights of other interested persons who have followed the agency's rules governing participation in contested cases.

Id. (emphasis added). The court concluded that the hearings in that case satisfied the "contested case" requirement for purposes of judicial review under HRS § 91-14. Id. at 71, 881 P.2d at 1217.

The Commission, WWC, and HC&S argue that the Waiāhole I court's citation to Puna Geothermal indicates that the court exercised jurisdiction over the appeal of the IIFS only because the parties also appealed the Commission's resolution of permit applications. Hui/MTF reads Waiāhole I as holding that the court has independent jurisdiction to review IIFS. The court concludes that the jurisdictional language from Waiāhole I is susceptible to both interpretations. However, the court's due process cases indicate that the court has jurisdiction to hear Hui/MTF's appeal because the IIFS, independent of any WUPA, affects property interests of Hui/MTF's members.

John Duey, President of Hui O Nā Wai ʻEhā, testified that the Hui's members "live, work, and play in the areas of Nā Wai ʻEhā," and that the Hui is "committed to restoring these streams' natural and cultural values and protecting Maui's quality of life for present and future generations." ʻĪao Stream runs through the property owned by Duey and his wife, Marie Hoʻoululāhui Lindsey Duey. Marie is native Hawaiian; she gave their property her Hawaiian name: Hoʻoululāhui. Hoʻoululāhui

contains at least seventeen ancient loʻi[12], but the Dueys currently cultivate only two small loʻi with stream water, which they take directly from, and return to, ʻĪao Stream. John testified that he would like to restore the remaining loʻi on his land, but that "[t]he only limiting factor is the availability of water."

Ron Sturtz, President of the Board of Directors of Maui Tomorrow Foundation, Inc., submitted a letter stating that the organization's supporters engage in traditional and customary gathering practices. One such supporter, Roselle Keliʻihonipua Bailey, a kuma hula and native Hawaiian practitioner, submitted written testimony explaining the gathering practices she would like to practice in ʻĪao Stream and its nearshore waters, and testifying that the lack of flowing water makes her practices impossible.

Kalo[13] farmer and Hui O Nā Wai ʻEhā member Hōkūao Pellegrino testified that his 2.175-acre farm, Nohoʻana, contains several restored ancient loʻi, ready to be cultivated. The

[12] "Loʻi" is defined as an "[i]rrigated terrace, especially for taro, but also for rice; paddy." Pukui & Elbert at 209.

[13] "Kalo" is the Hawaiian word for taro. Pukui & Elbert at 123. "In Hawaiʻi, taro has been the staple from earliest times to the present, and here its culture developed greatly, including more than 300 forms. All parts of the plant are eaten, its starchy root principally as poi, and its leaves as lūʻau." Id.

Nohoʻana loʻi are irrigated via a traditional ʻauwai[14] that diverts water from Waikapū Stream, and the water that leaves the loʻi returns to the Stream. Pellegrino testified that he is only able to cultivate two of his loʻi at a time because of insufficient water in Waikapū Stream.

The interests of the Dueys, Roselle Bailey, and Hōkūao Pellegrino are selected examples of testimony presented to the Commission, but dozens of others testified about their similar interests. Indeed, in its FOF/COL D&O, the Commission found that "Cultural experts and community witnesses provided uncontroverted testimony regarding limitations on Native Hawaiians' ability to exercise traditional and customary rights and practices in the greater Nā Wai ʻEhā area due to the lack of freshwater flowing in Nā Wai ʻEhā's streams and into the nearshore marine waters." The question before the court today, a question we answer in the affirmative[15], is whether these interests constitute "property interests" for the purpose of due process analysis.

The court has explained that a party has a property interest in the subject of litigation for purposes of due process analysis if the party has "more than an abstract need or desire

[14] "ʻAuwai" means "ditch or canal." Pukui & Elbert at 33.

[15] Hui/MTF also has standing to pursue this appeal, having demonstrated that "their interests were injured" and that they were "involved in the administrative proceeding that culminated in the unfavorable decision." Puna Geothermal, 77 Hawaiʻi at 69, 881 P.2d at 1215 (quoting Mahuiki v. Planning Comm'n, 65 Haw. 506, 514-15, 654 P.2d 874, 879-80 (1982)).

for it. He must have more than a unilateral expectation of it. He must, instead, have a legitimate claim of entitlement to it." Sandy Beach Defense Fund, 70 Haw. at 376, 773 P.2d at 260. The court has cited with approval the U.S. Supreme Court's analysis that:

> Property interests, of course, are not created by the Constitution. Rather they are created and their dimensions are defined by existing rules or understandings that stem from an independent source such as state law—rules or understandings that secure certain benefits and that support claims of entitlement to those benefits.

Int'l Broth. of Painters and Allied Trades v. Befitel, 104 Hawai‘i 275, 283, 88 P.3d 647, 655 (2004) (quoting Bd. of Regents v. Roth, 408 U.S. 564, 576 (1972)). See also Aquiar v. Hawai‘i Housing Auth., 55 Haw. 478, 496, 522 P.2d 1255, 1267 (1974) (citing federal authority to support the conclusion that "a benefit which one is entitled to receive by statute constitutes a constitutionally-protected property interest").

The interests asserted by Hui/MTF have a statutory basis in the water code. As stated in HRS § 174C-101,

> (c) Traditional and customary rights of ahupua‘a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778 shall not be abridged or denied by this chapter. Such traditional and customary rights shall include, but not be limited to, the cultivation or propagation of taro on one's own kuleana and the gathering of hihiwai, opae, o‘opu, limu, thatch, ti leaf, aho cord, and medicinal plants for subsistence, cultural, and religious purposes.
>
> (d) The appurtenant water rights of kuleana and taro lands, along with those traditional and customary rights assured in this section, shall not be diminished or extinguished by a failure to apply for or to receive a permit under this chapter.

HRS §§ 174C-101(c) and (d) (1993). HRS § 174C-63 is yet another section of the water code that entitles native Hawaiian farmers to their water; it states: "Appurtenant rights are preserved. Nothing in this part shall be construed to deny the exercise of an appurtenant right by the holder thereof at any time." HRS § 174C-63 (1993).

HC&S argues that these interests do not rise to the level of property for due process purposes, citing Sandy Beach Defense Fund, for support that native Hawaiian practices are similar to "aesthetic and environmental interests" which the court has held to be insufficient to establish a property interest. In that case, the City and County of Honolulu issued Special Management Area ("SMA") use permits for a proposed development. 70 Haw. at 364, 773 P.2d at 253. Area residents and community groups alleged that the County was required to hold a CCH before issuing the permits, expressing concerns "regarding the development's impact on coastal views, preservation of open space, traffic, potential flooding, and sewage treatment." Id. The supreme court held that the community groups were not entitled to a CCH because their "aesthetic and environmental" claims did not constitute "legitimate claims of entitlement." Id. at 376, 773 P.2d at 260. The court also noted that the community groups did not cite authorities to support their argument, and that none of the area residents owned property

contiguous to the development. Id. at 377, 773 P.2d at 261. Sandy Beach is readily distinguishable. First, the affected parties before the court today own or reside on land in the area of Nā Wai ʻEhā, and rely upon that water to exercise traditional and customary rights, including kalo farming. Second, as cited above, there is statutory authority found throughout the water code to support their entitlement to water for kalo farming.

HC&S also argues that downstream kalo farmers cannot assert property interests to more water than they currently use because it "would be a grave departure from the principle that 'the range of interests protected by procedural due process is not infinite.'" (quoting Int'l Bd. of Painters & Allied Trades v. Befitel, 104 Hawaiʻi at 283, 88 P.3d at 655). This argument is rejected for several reasons. First, as both Hui/MTF and OHA argue, the fact that HC&S and WWC have historically deprived downstream users of water does not negate those downstream users' interest in the water. Second, neither statute quoted above provides for abandonment of appurtenant rights; in fact, the text specifically protects against abandonment by stating that appurtenant rights will "not be diminished or extinguished by a failure to apply for or to receive a permit." HRS § 174C-101(d). Furthermore, as the court explained in Waiāhole I, "The constitution and Code, [. . .] do not differentiate among 'protecting,' 'enhancing,' and 'restoring' public instream values

[like native Hawaiian rights], or between preventing and undoing 'harm' thereto." 94 Hawai'i at 150, 9 P.3d at 462.

The court also disagrees with the Commission's, WWC's, and HC&S's argument that setting the IIFS in this case did not determine individual water rights. When the Commission issued a D&O retaining the existing IIFS for 'Īao and Waikapū Streams, it necessarily affected the Dueys' and Pellegrino's access to water because it endorsed the upstream diversions that remove water from 'Īao and Waikapū Streams, apparently finding that the "importance" of those diversions outweighed the importance of downstream uses. HRS § 174C-71(2)(D).

Though the conclusions above are sufficient to support today's holding, the analysis of one more case merits consideration. In Ko'olau Agr. Co., Ltd. v. Comm'n On Water Use Mgmt. ("Ko'olau Ag"), an agriculture company unsuccessfully sought review of the Commission's designation of several O'ahu aquifers as Water Management Areas ("WMA"). 83 Hawai'i 484, 486, 927 P.2d 1367, 1369 (1996). The court explained that the company did not have a property interest in whether the aquifers in question received the WMA designation. Id. at 493, 927 P.2d at 1376. In so concluding, the court drew a distinction between WMA designations, which do not require a hearing, and WUPA decisions, which do require hearings. As the court explained, this disparity in procedure is "eminently logical given the difference

between the issues presented for decision." Id. First, the court noted the difference in analysis required before the two resolutions. When considering a WMA designation, the Commission must determine whether "the water resources in the area may be threatened by existing or proposed withdrawals or diversions of water." Id. (quoting HRS § 174C-41(a)). Contrast a WUPA, where the Commission's analysis is much more robust; the Commission must consider several factors when granting a WUPA, including whether the water use is "a reasonable-beneficial use as defined in [the Code];" whether the use is "consistent with the public interest;" and whether it is consistent with governmental land use plans. Id. at 492, 927 P.2d at 1375 (quoting HRS § 174C-48). Second, the court considered the necessity of judicial review. The court recognized that "the consequences of an erroneous [WMA] designation decision by the Commission do not indicate a need for judicial review because the rights of individual water users are fully protected in the permitting process." Id. at 493, 927 P.2d at 1376. And third, the court noted that WMA designations do not affect the interests of any potential water users; the impact of such a designation is only that the user's water source is subject to the Commission's regulation, which does not, in and of itself, affect the user's water rights. Id. Contrast a WUPA, where the outcome is a permit directly specifying a user's rights to water. Id.

All parties cite Koʻolau Ag for assistance on the question of whether there is a property interest at stake in this case. The Commission, HC&S, and WWC argue that an IIFS determination is similar to designating a WMA because neither directly determines property rights. The court concludes that each of the factors listed above counsel in favor of judicial review in this case. First, the analysis the Commission must undertake in setting an IIFS is complicated. The statute specifies the factors the Commission must consider:

> In considering a petition to adopt an interim instream flow standard, the commission shall 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.

HRS § 174C-71(2)(D). As the voluminous record in this case readily establishes, each of these factors is complex and involves significant and thorough analysis and factfinding. Unlike establishing a WMA, the analysis supporting a determination of an IIFS requires more than a yes/no decision, but rather requires the Commission to weigh serious and significant concerns, including: "the need to protect and conserve beneficial instream uses of water," "the importance of the present or potential instream values," "the importance of the present or potential uses of water for noninstream purposes," and "the economic impact of restricting such uses." HRS § 174C-71(2)(C) and (D). Indeed, in Waiāhole I, the Commission

itself advocated for due process rights in proceedings to determine IIFS. One of the Commission's own Orders, cited in the court's opinion with approval, states

> A petition to modify instream flows at ... specific locations is a fact-intensive, individualized determination at each site that may directly affect downstream and off-stream interests.... [I]ndividual claims may need to be examined. The site-specific inquiry required in this case is not compatible with rule making, but with a method which provides the due process procedures necessary to assess individual interests.

94 Hawai'i at 152, 9 P.3d at 464.

Second, the ramifications of an erroneous IIFS could offend the public trust, and is simply too important to deprive parties of due process and judicial review. As the court stated in Waiāhole I, "[t]he public trust . . . is a state constitutional doctrine. As with other state constitutional guarantees, the ultimate authority to interpret and defend the public trust in Hawai'i rests with the courts of this state." 94 Hawai'i at 143, 9 P.3d at 455. The courts serve an important function with regard to the water code; as the court noted in Waiāhole I, "[t]he check and balance of judicial review provides a level of protection against improvident dissipation of an irreplaceable res." Id. (quoting Arizona Cent. for Law in Pub. Interest v. Hassell, 837 P.2d 158, 168-69 (Ariz. Ct. App. 1991), review dismissed, 837 P.2d 158 (Ariz. 1992) (brackets and citation omitted)).

Finally, in Ko'olau Ag, the court specified that there

was little necessity for judicial review because the permitting process would adequately protect individual rights. 83 Hawai‘i at 493, 927 P.2d at 1376. This protection does not exist in today's case for several reasons. First, as the Commission itself acknowledges, setting an IIFS is a final action and it would be "inappropriate for the Commission to reevaluate the IIFS during the upcoming surface water use permit proceedings." This argument indicates that downstream users cannot ask the Commission to raise the IIFS to a level that would accommodate a permit to fulfill their kuleana needs. Second, as the court noted in Waiāhole I, the water code envisions that "Once the Commission translates the public interest in instream flows into 'a certain and manageable quantity[, t]he reference to consistency with the public interest in the definition of reasonable beneficial use likewise becomes a reference to that quantity.'" 94 Hawai‘i at 149, 9 P.3d at 461 (quoting Douglas W. MacDougal, Private Hopes and Public Values in the "Reasonable Beneficial Use" of Hawai‘i's Water: Is Balance Possible?, 18 U. Haw. L. Rev. 1, 62 (1996)). In short, the IIFS matter. They have both immediate and lasting impacts on individual water users. They are also an opportunity for the Commission to consider the needs of our state's water systems. "Under the [Water] Code, [. . .] 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." 94 Hawai'i at 148, 9 P.3d at 460. The court therefore holds that Hui/MTF had a due process right to a hearing, and therefore has a right to judicial review, in this case.

V. ANALYSIS OF POINTS OF ERROR

A. This Court Must Dismiss MDWS's Cross-Appeal, As It Seeks Resolution of an Abstract Proposition of Law.

MDWS filed a cross-appeal in this case seeking "clarification" of several COL, in which the Commission articulated that it established the IIFS prior to considering noninstream uses, including MDWS's diversions for the public water supply. MDWS contends that Waiāhole I established a "higher status" for public trust uses as compared to commercial noninstream uses, and that municipal use, though a noninstream use, should be afforded higher status and preferential consideration as a public trust use.

Hui/MTF filed an answering brief to MDWS's opening brief; OHA joined the brief. In its answering brief, Hui/MTF argues that MDWS's point of error is not reviewable by the court because MDWS seeks clarification of language in the Commission's D&O but does not argue that the Commission's alleged error affected MDWS's rights or interests. Hui/MTF reasons that because MDWS sought and was issued water use permits in the

amounts requested, any treatment of their point of error would be an "advisory opinion." Hui/MTF accordingly requests that the court dismiss MDWS's cross-appeal.

Hui/MTF's argument is well-taken. This court has recently affirmed its practice not to issue "advisory opinions on abstract propositions of law." Kemp v. State of Hawai'i Child Support Enforcement Agency, 111 Hawai'i 367, 385, 141 P.3d 1014, 1032 (2006)) (citing Kona Old Hawaiian Trails Group v. Lyman, 69 Haw. 81, 87, 734 P.2d 161, 165 (1987)). This is a longstanding value of the court.

> The duty of this court, as of every other judicial tribunal, is to decide actual controversies by a judgment which can be carried into effect, and not to give opinions upon moot questions or abstract propositions, or to declare principles or rules of law which cannot affect the matter in issue in the case before it.

Wong v. Bd. of Regents, 62 Haw. 391, 394-95, 616 P.2d 201, 204 (1980) (citing Anderson v. Rawley Co., 27 Haw. 150, 152 (1923)) (further citations omitted).

MDWS's point of error seeks resolution of an abstract proposition because any possible resolution of MDWS's point of error would not affect MDWS's right—or any other party's right—to the water use permits issued by the Commission. MDWS sought permits for 1.042 mgd for the Kepaniwai Well (Well No. 5332-05), and 1.359 mgd for the 'Īao Tunnel (Well No. 5332-02). The Commission found that MDWS's applications met all the permitting criteria and awarded the permits in full. Analysis of MDWS's

point of error would not affect this determination because MDWS's request was granted, even without the requested treatment as a public trust use. MDWS's cross-appeal is therefore dismissed.

B. The Commission Failed To Enter Findings of Fact and Conclusions of Law Regarding The Effect Of Its Amended IIFS On Traditional And Customary Native Hawaiian Practices.

OHA and Hui/MTF argue that the IIFS established by the Commission did not protect traditional and customary native Hawaiian rights to the extent feasible. More specifically, both parties contend that the Commission erred in failing to articulate FOF and COL regarding the impact of its decision on traditional and customary native Hawaiian rights. OHA also argues that the Commission failed to weigh traditional and customary rights when it balanced instream values and noninstream uses.

The Commission articulated a general conclusion of law relevant to this point of error:

> 19. In addition to appurtenant rights when practiced for subsistence, cultural and religious purposes, traditional and customary rights include, but are not limited to, kuleana water for domestic purposes, kalo cultivation, and other irrigation purposes, and the gathering of hihiwai, opae, oʻopu, limu, thatch, ti leaf, aho cord, and medicinal plants for subsistence, cultural, and religious purposes.

COL 19 is, in large part, a quotation from HRS § 174C-101(c), the provision in the water code protecting native Hawaiian rights; it provides an illustrative list of the activities that can be protected under the water code. During the hearing, Hui/MTF and

OHA presented several witnesses who testified about native Hawaiian practices specific to Nā Wai ʻEhā, and the Commission found several facts on the subject. First, as for historical practices, the Commission found several facts indicating a distinct connection between Nā Wai ʻEhā and Hawaiian history and culture. The Commission found:

> 34. Due to the profusion of fresh-flowing water in ancient times, Nā Wai ʻEhā supported one of the largest populations and was considered the most abundant area on Maui; it also figured centrally in Hawaiian history and culture in general.
>
> 35. The abundance of water in Nā Wai ʻEhā enabled extensive loʻi kalo (wetland kalo) complexes, including varieties favored for poi-making such as "throat-moistening lehua poi."
>
> [. . .]
>
> 40. In addition to extensive agricultural production, traditional and customary practices thrived in Nā Wai ʻEhā, including the gathering of upland resources, such as thatch and ti, and protein sources from the streams, including ʻoʻopu, ʻōpae, and hihiwai.
>
> [. . .]
>
> 43. The waters of Nā Wai ʻEhā were renowned for the traditional and customary practice of hiding the piko, or the naval cord of newborn babies. "[T]he spring Eleile contained an underwater cave where the people of the area would hide the piko (umbilical cords) of their babies after birth. . . . The location of where one buries or hides the piko is a traditional custom that represents Native Hawaiian cultural beliefs about an individual's connection to the land."
>
> 44. Upper ʻĪao Valley contained the royal residences of chiefs in both life and the afterlife. In a secret underwater cave, Native Hawaiians hid the bones of "all the ruling chiefs who had mana and strength, and the kupua, and all those attached to the ruling chiefs who were famous for their marvelous achievements. There were several hundred in all who were buried there." Thus, the burial of sacred chiefs required a deep freshwater body to ensure the utmost protection of their bones.
>
> 45. Nā Wai ʻEhā is home to several important heiau. Of particular significance are Halekiʻi and Pihana Heiau,

> located between Waiehu and ʻĪao Streams. These heiau were re-consecrated in 1776 as an offering before the famous battle between Hawaiʻi and Maui. It is said that Kalanikaukooluaole, a high chiefess and daughter of Kamehamehanui, bathed in the stream water near the heiau, before she entered the heiau.
>
> [. . .]
>
> 54. The spiritual practice of hiʻuwai, also known as kapu kai, often occurred around the time of makahiki, when individuals "would go into the rivers or into the ocean in order to do a cleansing for the new year[.]" This type of cleansing, which required immersion in the water, was also conducted "before you start or end certain ceremonies[.]" For ceremonies dedicated to Kāne, "having a hiʻuwai in a stream magnifies the mana[.]"

The Commission heard testimony explaining that native Hawaiian practices still continue in Nā Wai ʻEhā:

> 51. Despite significant challenges, some Native Hawaiian practitioners in Nā Wai ʻEhā continue to exercise traditional and customary rights and practices, including "gathering stream life such as hihiwai, ʻōpae, ʻoʻopu, and limu for subsistence and medicinal purposes," as well as "cultivating taro for religious and ceremonial uses, gathering materials for hula, lua (ancient Hawaiian martial arts), and art forms."
>
> [. . .]
>
> 53. Kumu hula Akoni Akana gathers materials such as hau, palapalai, laʻī, and lauaʻe from Waiheʻe and Waiehu for hula ceremonies and performances. "As part of the protocol for gathering these items, we always soak the leaves we gather in the stream flow nearby. This practice necessitates a flowing stream."
>
> [. . .]
>
> 55. Other practitioners would like to expand the scope of their traditional and customary practices and plan to do so if water is returned to the streams. For example, Hōkūlani Holt-Padilla testified that "[m]any families seek to reestablish the tradition of growing kalo" in Nā Wai ʻEhā.

The Commission also found facts to explain the connection between current traditional and customary practices and streamflow levels:

> 49. Cultural experts and community witnesses provided

> uncontroverted testimony regarding limitations on Native Hawaiians' ability to exercise traditional and customary rights and practices in the greater Nā Wai ʻEhā area due to the lack of freshwater flowing in Nā Wai ʻEhā's streams and into the nearshore marine waters.
>
> 50. "ʻOʻopu must once have been plentiful in Nā Wai ʻEhā streams; the wind in Waiheʻe is called ka makani kiliʻoʻopu, which means the wind that brings the faint odors of the ʻoʻopu." Today, however, "[i]t is very difficult to find ʻōpae, hihiwai, and ʻoʻopu in the streams of Nā Wai ʻEhā, large portions of which are frequently dry."
>
> [. . .]
>
> 57. According to testimony, "Nā Wai ʻEhā continues to hold the potential to once again support enhanced traditional and customary rights and practices if sufficient water is restored." Restoring streamflow to Nā Wai ʻEhā "would enormously benefit" Native Hawaiians and other communities who seek to reconnect with their culture and live a self-sustaining lifestyle, and more people would be able to engage in traditional and customary practices with more water.
>
> 58. Testimony contended that "Restoration of mauka to makai flow to the streams is critical to the perpetuation and practice of Hawaiian culture in Nā Wai ʻEhā." "If we are not able to maintain our connection to the land and water and teach future generations our cultural traditions, we lose who we are as a people."
>
> 59. According to testimony, "The return of the waters of Nā Wai ʻEhā to levels that can sustain the rights of native Hawaiians and Hawaiians to practice their culture will result in the betterment of the conditions of native Hawaiians and Hawaiians by restoring spiritual well-being and a state of 'pono' (goodness, righteousness, balance) to the people and communities of Nā Wai ʻEhā."
>
> 60. Testimony contended that cold, free-flowing water is essential for kalo cultivation, which in turn is integral to the well-being, sustenance, and cultural and religious practices of native Hawaiians and Hawaiians. Kalo cultivation provides not only a source of food, but also spiritual sustenance, promotes community awareness and a connection to the land, and supports physical fitness and mental well-being.

OHA and Hui/MTF both argue that the Commission had a duty to make specific findings of fact and conclusions of law with regard to the effect of its D&O on traditional and customary native Hawaiian practices. Their argument is grounded in Ka

Paʻakai O Ka ʻAina v. Land Use Comm'n, 94 Hawaiʻi 31, 7 P.3d 1068 (2000).

In Ka Paʻakai O Ka ʻAina, native Hawaiian groups appealed the State Land Use Commission's ("LUC") grant of a land developer's petition to reclassify land in a conservation district to an urban district. 94 Hawaiʻi at 33, 7 P.3d at 1070. The LUC held hearings on the petition, and reached several findings of fact and conclusions of law regarding native Hawaiian practices. Id. at 36-37, 7 P.3d at 1073-74. The LUC determined that the developer would develop and implement a Resource Management Plan ("RMP") to coordinate coastal access for the purpose of traditional and customary practices; the LUC specifically found that one family gathered salt in the area, and that the shoreline is used for fishing, gathering limu, ʻopihi, and other resources. Id. at 37, 7 P.3d at 1074. The LUC mandated that the RMP will preserve these practices, archaeological sites and the coastal trail, and required the developer to preserve and protect native Hawaiian rights. Id. at 38, 39, 7 P.3d at 1075, 1076. On appeal, this court recognized that Article XII, section 7 of the state constitution "places an affirmative duty on the State and its agencies to preserve and protect traditional and customary native Hawaiian rights," while giving the State and its agencies the power to discharge this duty. Id. at 45, 7 P.3d at 1082. The court then provided an

"analytical framework" to guide the State in its decisions affecting native Hawaiian rights, specifying that the agency must, at a minimum, articulate:

> (1) the identity and scope of "valued cultural, historical, or natural resources" in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area; (2) the extent to which those resources-including traditional and customary native Hawaiian rights-will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken by the LUC to reasonably protect native Hawaiian rights if they are found to exist.

Id. at 46-47, 7 P.3d at 1083-84 (internal footnotes omitted). The court held that the LUC failed to satisfy those criteria for several reasons: (1) the LUC did not enter definitive findings regarding the extent of the native Hawaiian practices, but rather delegated the determination to the developer; (2) the LUC did not enter findings about the practices undertaken outside the RMP, despite evidence that the area outside the RMP could require protection; (3) "the LUC made no specific findings or conclusions regarding the effects on or the impairment of any Article XII, section 7 uses, or the feasibility of the protection of those uses." Id. at 48-49, 7 P.3d at 1085-86 (emphasis in original). As the court explained, "the promise of preserving and protecting customary and traditional rights would be illusory absent findings on the extent of their exercise, their impairment, and the feasibility of their protection." Id. at 50, 7 P.3d at 1087.

Hui/MTF and OHA argue that the Commission's FOF/COL D&O do not satisfy the analytical framework of Ka Paʻakai O Ka ʻAina.

They cite the Commission's own findings that the lack of freshwater in Nā Wai ʻEhā limits the native Hawaiian practices of kalo cultivation and gathering, and argue that the Commission did not fulfill its duty to protect native Hawaiian rights because "nothing in the Decision indicates that the majority even considered the feasibility of protecting those traditional and customary rights."

The court concludes that Hui/MTF and OHA are correct; the Commission's FOF/COL D&O, while very thorough in several respects, including its documentation of the area's native Hawaiian practices, lacks findings or conclusions articulating the effect of the amended IIFS on the native Hawaiian practices of Nā Wai ʻEhā. It also lacks findings or conclusions explaining the feasibility of protecting the practices. This is particularly apparent with regard to kalo cultivation, considering the Commission's decision not to restore any streamflow to ʻĪao and Waikapū Streams. In its FOF/COL D&O, the Commission identified seventeen kuleana ditch/pipe systems, and divided those seventeen into two categories: the fourteen that are connected to one of the primary distribution systems (and thus rely on diverted water for their kalo cultivation), and the three that divert water directly from a stream (and thus rely on sufficient instream flows from which to pull their water). While the Commission's analysis considered the needs of the former

category of kuleana users, there was no mention of the kuleana users who access their water directly from the streams. This is particularly troublesome for the users who take from two of the ditches, described in the record as the Pellegrino and Duey Kuleana Ditches, which draw water directly from Waikapū and ʻĪao Streams, respectively. The users on those Ditches testified that their water is insufficient, and urged the Commission to amend upward the IIFS for their streams so they could irrigate their loʻi kalo. The Commission's FOF/COL D&O justifies its decision not to restrict diversions from Waikapū and ʻĪao Streams due to the streams' lack of potential to support certain native species, described as amphidromous.[16] The Commission does not state the effect of this decision, which is to deny the Pellegrino and Duey Ditch users the water they need to cultivate the loʻi kalo on their property; furthermore, the Commission did not articulate whether it would be feasible to return flow sufficient to support the kuleana.

In addition to neglecting this portion of the kalo cultivation analysis, the FOF/COL D&O does not provide any analysis of the decision's effect on gathering rights. HC&S argues that the Commission's FOF/COL were adequate on this point, reasoning that "if instream fauna populations increase as a

[16] A full discussion of this analysis follows in Section V.C.1.

result of the amended IIFS as [the Commission] anticipates they will, that would support gathering practices." This argument fails for two main reasons. First, the FOF/COL do not satisfy the analytical framework articulated in Ka Paʻakai O Ka ʻAina. It appears as though the first step of analysis, identification of the scope of traditional and customary native Hawaiian rights, is satisfied by the above-quoted FOF regarding gathering rights, which identify the several items gathered from Nā Wai ʻEhā. However, subsequent steps of the analysis require the administrative agency to articulate "the extent to which those resources [. . .] will be affected or impaired by the proposed action," and then to specify what feasible action can be taken to protect native Hawaiian rights. Ka Paʻakai O Ka ʻAina, 94 Hawaiʻi at 47, 7 P.3d at 1084. The FOF/COL do not contain any information on these two steps of analysis. Furthermore, even if the court accepted HC&S's post hoc explanation to be adequate, this would only resolve rights to gather amphidromous species, but the Commission concluded that gathering rights in Nā Wai ʻEhā also encompassed several other species. The Commission's analysis does not examine whether the amended IIFS impact these gathering rights, or whether any negative impact may be avoided.

Having concluded that the Commission did not discharge its duty with regard to the feasibility of protecting native Hawaiian rights, the court must vacate the Commission's FOF/COL

D&O and remand to the Commission for further consideration of the effect the IIFS will have on native Hawaiian practices, as well as the feasibility of protecting the practices. Should the Commission determine that the amended IIFS will negatively impact protected native Hawaiian practices and that protection of those practices is feasible, the Commission may enter amended IIFS to reflect that protection.

C. The Commission's D&O Does Not Adequately Justify Its Decision Not To Restore Streamflow To The ʻĪao And Waikapū Streams.

Hui/MTF challenges the Commission's failure to restore flow to the ʻĪao and Waikapū Streams. Hui/MTF argues that such an action was not supported by the record and disregards all instream uses other than sustaining amphidromous species. Hui/MTF further contends that the Commission did not properly weigh the competing interests in this case, and that the Commission arbitrarily misused the USGS's temporary flow release figures.

1. The Commission's Analysis Regarding Instream Use Is Incomplete.

The Commission explained its reasoning in the FOF/COL D&O section titled "The Commission's Analysis and Conclusions." That section of analysis shows a clear emphasis placed on the potential to restore amphidromous species in the streams. This was a main area of controversy in the hearing; the parties

presented the Commission with several expert witnesses, all promoting different opinions on the issue.

The term "amphidromous" describes species of fish that undergo regular, obligatory migration between fresh water and the sea at some stage in their life cycle other than the breeding period. Native Hawaiian amphidromous species exhibit "freshwater amphidromy," where spawning takes place in fresh water, and the newly hatched larvae are swept into the sea by stream currents. While in the sea, the larvae undergo development as zooplankton before returning to fresh water to grow to maturity. The Commission found that these species suffer in Nā Wai ʻEhā due to the disruption of natural flow caused by the offstream water diversions; the diversions degrade or destroy habitat, diminish food sources, diminish larval drift by capturing eggs and larvae, and impair flows necessary to transport larvae to the ocean. The Commission also found that discharge of sufficient duration and volume is necessary to attract and accommodate upstream migration of post-larval fish, mollusks, and crustaceans; there is a direct correlation between stream volume and recruitment, such that increased streamflow correlates with increased recruitment at the stream mouth.

Dr. Mark Eric Benbow, an Assistant Professor at Michigan State University, testified on behalf of Hui/MTF as an expert in aquatic biology, ecology, and the Central Maui streams.

Dr. Benbow testified that the amphidromous life cycle requires continuous mauka-to-makai flow, though he acknowledged that he did not know the precise volume and duration necessary to sustain the species. Dr. Benbow reached his opinions after conducting multi-year studies of Central Maui streams in which he found that the largest migrations of species occur in streams with minimal or no diversions, while the greatest reductions in recruitment during drought occur in diverted streams. Dr. Benbow made two specific recommendations to the Commission: first, he recommended that the Commission require sufficient flow levels to increase the quantity and quality of habitat in order to have a functioning reproduction population of organisms; second, he recommended maintaining continuous mauka-to-makai flow in Nā Wai ʻEhā. Dr. Benbow testified that, without additional studies, he cannot recommend maintaining the streams at less than 75 percent of their median flow. As the Commission found, however, Benbow's 75-percent figure was an "informed guess," and the precise volume and duration of streamflow needed to sustain the life cycle of amphidromous organisms is not known.

John Ford, Program Director and Office Lead for SWCA Environmental Consultants, testified on behalf of HC&S as an expert in aquatic biology, with specific emphasis on native species in Hawaiian streams. Ford presented a different account of the importance of mauka-to-makai flow for amphidromous

species. Ford distinguished "ecological connectivity" from "physical connectivity"; the former is the term for streamflows sufficient to allow the normal distribution of a species within an entire watershed, the latter is the term for continuous flow from a specific stream's headwaters to its mouth. Ford noted that there are naturally interrupted and intermittent streams in Hawai‘i with amphidromous organism populations, and suggested that amphidromous species therefore may not require the continuous physical connectivity of each stream to sustain their population.

HC&S retained Ford's consulting company, SWCA, to evaluate amphidromous species in Nā Wai ʻEhā. In 2007 and early 2008, SWCA performed a series of larval drift sampling to evaluate the reproduction of amphidromous species; this survey lasted one week in total, so the Commission found it was "just a snapshot" and could not support "broad extrapolations over time" or "to other streams." SWCA observed that Waihe‘e River was the only stream in Nā Wai ʻEhā with significant reproductive populations of native amphidromous species. SWCA also observed amphidromous species in Waikapū and ʻĪao Streams, which may be evidence of ecological connectivity as those streams do not have physical connectivity to the sea except during prolonged intense flooding events. There may be another explanation, however, as Dr. Benbow testified that he and Division of Aquatic Resources

biologist Skippy Hau have planted specimens of amphidromous species above the diversions of those streams. SWCA concluded that ecological connectivity exists under diverted conditions in the Waiheʻe River and Waiehu Stream. Ford opined that the addition of flow to Waiheʻe River and Waiehu Stream would be the most beneficial for increasing populations of native amphidromous species in Nā Wai ʻEhā. With regard to ʻĪao Stream, SWCA's final conclusion was that the channelization "is the primary factor" impeding recruitment of amphidromous species. SWCA also found no definitive evidence that Waikapū Stream ever flowed continuously from mauka to makai.

The Commission's Final FOF/COL D&O accepted Ford's view of the streams with regard to amphidromous species. As the Commission explained in its final analysis section, it

> concluded that the restorative potentials are highest for Waiheʻe River and Waiehu Stream. ʻĪao Stream can be restored to enhance recruitment and increase stream life, but its reproductive potential is severely limited because of extensive channelization in the 2.5 miles immediately above its mouth. Waikapū Stream likely has minimal to no reproductive potential, because there probably was no pre-diversion continuous flow to the mouth, and even if there had been continuous flow, Kealia Pond and the delta below most likely inhibited recruitment.

Hui/MTF argues that the Commission's treatment of ʻĪao and Waikapū Streams is not supported by the record and disregards all instream uses other than amphidromous species.

In setting the IIFS, the Commission was charged with weighing "present or potential instream values." HRS § 174C-

71(2)(D). The water code contains a definition of instream uses, as well as an illustrative list of examples. It provides:

> "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.

HRS § 174C-3. As Hui/MTF shows, the record contains substantial evidence that establishing mauka-to-makai flow in all of the streams of Nā Wai ʻEhā would support the public interest by fostering many of the statutorily-designated instream uses. Hui/MTF argues that the Commission focused on amphidromous species, a subset of parenthesis (1) in the statute, and disregarded evidence supporting the other instream uses.

HC&S replies that the Commission is not required to restore streamflow, or even to establish an IIFS, for each stream. The water code requires the Commission to establish IIFS in some instances; as the code provides, the Commission "shall"

set an IIFS "in order to protect the public interest". HRS § 174C-71(2)(A). Accordingly, in resolving the petition to amend the IIFS for Nā Wai ʻEhā, the Commission was not precluded from retaining the existing IIFS in some or all of the streams, had it concluded that the public interest was sufficiently protected by the existing IIFS.

In undertaking a close review of the Commission's decision, it is apparent that the decision focuses on the flow standards as they relate to amphidromous species, and justifies the decision not to restore water to ʻĪao and Waikapū Streams due to the conclusion that those streams show limited "reproductive potential" for amphidromous species. HC&S, the Commission, and WWC draw the court's attention to the evidence in the record, especially the SWCA evaluation reviewed supra, that supports the Commission's conclusion. However, Hui/MTF's point of error does not merely contend that the Commission's decision is not supported by the record; it also alleges that the Commission erred in disregarding the evidence of other instream uses. In Waiāhole I, this court held that where "the record demonstrates considerable conflict or uncertainty in the evidence, the agency must articulate its factual analysis with reasonable clarity, giving some reason for discounting the evidence rejected." Waiāhole I, 94 Hawaiʻi at 163-64, 9 P.3d at 475-76. In its FOF/COL D&O, the Commission does not explain its focus on

amphidromous species above the evidence of other instream uses. Even if the ʻĪao and Waikapū Streams may not support amphidromous species, evidence that they can support other instream uses must be weighed against noninstream uses, as required by HRS § 174C-71(2)(D). The Commission erred in not considering this evidence; on remand, the Commission must undertake and articulate this analysis. Waiāhole I, 94 Hawaiʻi at 158, 9 P.3d at 470 (remanding where the Commission "made invalid, inadequate, or incomplete findings.") (citation).

2. The Commission Did Not Err In Using USGS Data As A Starting Point For Analysis.

In federal fiscal year 2006, the USGS initiated a study of Nā Wai ʻEhā. The study consisted of eight parts: (1) compiling and analyzing existing information relevant to the Waiheʻe River, and Waiehu, ʻĪao, and Waikapū Streams, (2) conducting baseline reconnaissance surveys of the streams to identify sites of diversion and return flow and significant gaining and losing reaches, (3) establishing low-flow partial-record stations in reaches with flowing water to characterize natural and current diverted flows in Nā Wai ʻEhā streams, (4) establishing temperature-monitoring sites in reaches with flowing water to provide information on temperature variations for diverted and undiverted conditions, (5) monitoring the frequency of dry days in selected reaches of the diverted streams to

establish the number of days during which continuous mauka-to-makai flow is available for the upstream movement of native species, (6) surveying the presence or absence of native and non-native aquatic species in selected stream reaches to provide baseline data for assessing effects of streamflow restoration, (7) collecting macrohabitat, microhabitat, and channel-geometry information in selected study reaches downstream from existing diversions to characterize the effects of diversions on habitat for native stream macrofauna, and (8) analyzing data and producing a report summarizing the study findings.

Photographic information from cameras mounted at three selected sites downstream of all diversions established that from September 2006 to July 2007, North Waiehu Stream was dry about 79 percent of the time, ʻĪao Stream was dry about 70 percent of the time, and Waikapū Stream was dry about 37 percent of the time. At the time of the Commission's decision, USGS had requested, as part of its study, to partially or fully restore mauka-to-makai flow to Waiheʻe River, Waiehu Stream, and ʻĪao Stream[17] to allow measurements of streamflow, infiltration, and physical habitat for different flow conditions in sections of the stream that are commonly dry due to diversions. The proposal sought to release water into the streams in three phases, each involving a higher

[17] USGS Hydrologist Delwyn Oki stated that controlled releases would be helpful for Waikapū Stream, too, and could be developed in the future.

flow than the last; each phase would be maintained for about a month and long enough to allow flow conditions to stabilize for observation.

For Waiheʻe Stream, USGS proposed flows near the coast of 6.5 mgd, 13 mgd, and 26 mgd; this would require flows just downstream of the Spreckels Ditch diversion of 10 mgd, 17 mgd, and 30 mgd, respectively, for each of the three phases. For North and South Waiehu Streams, USGS proposed flows near the coast[18] of 0.6 mgd, 1.6 mgd, and 2.6 mgd. USGS estimated that this would require the following flows: South Waiehu Stream at Spreckels Ditch would be 0.9 mgd, 1.3 mgd, and 1.6 mgd, respectively; North Waiehu Stream at the North Waiehu Ditch would be 1.6 mgd, 2.2 mgd, and 2.9 mgd, respectively. For ʻĪao Stream, USGS proposed flows near the coast of 3.2 mgd, 9.7 mgd, and 16 mgd; this would require flows just downstream of the ʻĪao-Maniania Ditch diversion of 9.5 mgd, 16 mgd, and 22 mgd, respectively. For the Waikapū Stream, USGS deferred controlled releases entirely.

With regard to the USGS controlled release proposals, the Commission specifically found:

> 606. "The results [following the controlled releases] are intended to be used along with other biological and hydrological information in development, negotiations, or mediated settlements for instream flow requirements."

[18] Recall that the North and South Waiehu Streams join downstream of diversions and flow together until reaching the sea.

(Gingerich and Wolff, 2005).

The quote originated in a 2005 USGS Study of Nā Wai ʻEhā; HC&S's biologist, Thomas R. Payne, quoted that language to make his greater point that the USGS controlled releases would not be, in his opinion, conclusive to determine IIFS. This is because the controlled releases are designed to study the effect of flow conditions on habitat, not to predict the biological response of the stream to the flow condition; therefore, the scientists have to infer the effect of streamflow on population, "without any direct quantification or prediction of individual species." In Payne's words, "considerable work remains to be done before defensible instream flow standards could be recommended from [the controlled release] studies alone."

In its Final FOF/COL[19] the Commission concluded that:

> The most credible proposals for amending the IIFS are USGS's proposed controlled flows. Of the three proposed phases, the [first] phase, totaling 12.5 mgd and comprised of 10.0 mgd for Waiheʻe River, 1.6 mgd for North Waiehu Stream, and 0.9 mgd for South Waiehu Stream, provide the best balance between instream values and offstream uses, and are the only viable IIFS when stream flows are low and all available practical alternatives are in use.

Hui/MTF argues that the Commission "arbitrarily misused" USGS's temporary flow release figures, noting that the USGS's figures were not proposals for IIFS, but rather a proposal for scientific study of the area. Hui/MTF argues that USGS

[19] Dr. Miike's Proposed FOF/COL set different IIFS, and did not reach this finding.

certainly did not consider instream values, and adoption of USGS flow levels could not possibly discharge the Commission's duty to balance instream values and noninstream uses. OHA shares Hui/MTF's criticism; it describes the above-quoted COL as "inexplicabl[e]."

In making their argument, Hui/MTF and OHA appear to misstate the Commission's actual treatment of the USGS figures. Even though COL 261, quoted above, suggests that the Commission simply adopted the USGS figures, the entirety of the FOF/COL D&O actually indicate that the Commission merely utilized the USGS figures as a starting point. First, the Commission explained the utility of the USGS figures; the figures "were chosen to correspond to specified flows at the stream mouths, after adjusting for losses into the stream beds in the lower reaches of each stream." As described earlier, the Commission focused its analysis on establishing mauka-to-makai streamflow in streams that would support amphidromous species; for this the USGS estimation of loss in the streams' losing reaches is helpful data. Second, the Commission did not simply adopt the USGS figures, but rather adapted one of the three USGS figures as part of its analysis; the USGS proposed release for ʻĪao Stream was 9.5 mgd, but the Commission decided not to limit diversions of that stream based on its conclusion that restoration was unlikely to support amphidromous species. Even though, as explained

above, this reasoning does not adequately discharge its duties in this case, the Commission did not err in utilizing the USGS figures as a starting point for its analysis.

D. The Commission Violated The Public Trust In Its Treatment Of Diversions.

Hui/MTF argues that the Commission erred in its estimation of HC&S, MDWS, and WWC's diversions. Hui/MTF alleges that the Commission did not hold the diverters to their burden of proof and then "penalized the public trust" for the absence of data, that the Commission failed to consider variable offstream demands in setting the IIFS, and that the Commission did not properly require the diverters to justify system losses. Both Hui/MTF and OHA argue that the Commission erred in its consideration of Well No. 7; Hui/MTF also argues that the Commission erred in its consideration of recycled water as an alternative source. Finally, Hui/MTF contends that the Commission erred in calculating HC&S's acreages. The following sections consider each argument in turn.

1. The Commission Did Not Err In Articulating The Burden Of Proof In Determining An IIFS.

Hui/MTF argues that the Commission erred because it did not hold the diverting parties to a burden of proof; they argue that Waiāhole I requires noninstream users to justify their diversions in light of the water uses protected by the public trust. The flaw of their argument is that the portions of

Waiāhole I that they cite apply to the WUPA process. In the context of IIFS petitions, the water code does not place a burden of proof on any particular party; instead, the water code and our case law interpreting the code have affirmed the Commission's duty to establish IIFS that "protect instream values to the extent practicable" and "protect the public interest." In re Water Use Permit Applications "Waiāhole II", 105 Hawai'i 1, 11, 93 P.3d 643, 653 (2004); HRS § 174C-71(2)(A). Accordingly, our review of the Commission's analysis of the stream diversions must focus on whether or not the Commission properly discharged this duty. Where the Commission's decisionmaking evinces "a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state," the decision satisfies close look review governing public trust resources. Wai'ola, 103 Hawai'i at 422, 83 P.3d at 685.

2. The Commission Did Not Err In Using Dr. Fares's Model Of Irrigation Requirements As A Starting Point For Analysis.

Hui/MTF argues that the Commission erred in its treatment of testimony from Dr. Ali Fares, a hydrologist who testified as an expert witness for Hui/MTF, OHA, and MDWS. Dr. Fares is an Associate Professor in the Department of Natural Resources and Environmental Management at the University of Hawai'i, Mānoa. Dr. Fares testified regarding his estimation of the optimal irrigation requirements for HC&S's sugar cane fields.

Dr. Fares's model considered historical rainfall data, evapotranspiration or pan evaporation data[20], and data regarding the soil; he then calculated, over the historical period covered by the rainfall data, how much irrigation water would have been required to grow the sugar crop. Dr. Fares statistically analyzed the results to calculate the average amount of irrigation water needed in the wettest year and the driest year, as well as the amount of water that would have supplied the irrigation requirement between the two extremes. Dr. Fares calculated the optimal irrigation requirements using the 80 percent probability standard because it's the industry standard utilized in both government and the private sector. Under the 80 percent probability standard, water meeting or exceeding requirements is available four out of every five days.

HC&S employees testified that they used a different model called a water balance model, which differs from Fares's model in that it uses "real-time data" collected from four rain stations and two evaporation stations located in the west Maui fields. The Commission found that real-time data is more reliable than long-term daily averages to calculate irrigation requirements.

[20] Evotranspiration (or evapo-transpiration) is the loss of water from the soil by evaporation and by transpiration from plants growing in the soil. Pan evaporation is a measurement of water from an open pan, which can be correlated to the water demands of a specific crop.

Both models also consider irrigation efficiency, or the percentage of water that is actually delivered to the plants, as opposed to the amount that is channeled through, and possibly lost in, the irrigation system. Fares used an 85 percent irrigation efficiency figure for his calculations; this is industry standard. HC&S's estimations takes into account the different types of tubing, the length of tubes, and variations in topography; HC&S's estimations utilize an 80 percent efficiency standard. The Commission accepted Fares's use of 85 percent irrigation efficiency.

HC&S stressed the importance of basing water management on actual field conditions, rather than models. The Commission found that Fares had not personally visited the HC&S fields or inspected the HC&S irrigation system; he also never studied actual water usage for sugar cane. Moreover, HC&S representatives testified that Fares's model does not account for several factors increasing water usage, including water run through irrigation lines to detect leaks and irrigation water that is "lost" because it is applied just before it rains. HC&S also testified that it is impractical to assume that HC&S can irrigate to restore soil moisture exactly when necessary; this is not always the case for several reasons, including the facts that only a fraction of the fields actually receive water at any given time, and sometimes fertilizers and herbicides preclude watering.

In its FOF/COL D&O, the Commission accepted Fares's estimates of irrigation requirements, but added five percent to account for the above-listed factors identified by HC&S that Fares's model does not incorporate. Hui/MTF argue that this was error because the five percent increase is "random" and accounts for "unsubstantiated excuses." HC&S responds that the Commission was not limited to choosing between Dr. Fares's model and HC&S's estimates, but rather that the Commission was empowered to utilize the information presented as it saw fit, as long as its decision was supported by the evidence.

The court has held that, due to the fact that the Commission must articulate an IIFS at an "early planning stage" of water management, the Commission "need only reasonably estimate instream and offstream demands." Waiāhole I, 94 Hawai'i at 155 n.60, 9 P.3d at 467 n.60. The court also explained that the IIFS may be based "not only on scientifically proven facts, but also on future predictions, generalized assumptions, and policy judgments." Waiāhole I, 94 Hawai'i at 155, 9 P.3d at 467. In this case, the Commission concluded, based on the above-listed facts showing an incongruity between Fares's model and field conditions, that the model would be insufficient to quantify actual irrigation requirements. The Commission then added five percent to Fares's figures to account for this difference. The Commission fully explained its logic in predicting the irrigation

requirements, and it settled on a figure that is a small deviation from the Hui/MTF expert's proposal. Faced with the question of whether the record lacks substantial evidence to support the estimates, the answer must be no; the court therefore concludes that the Commission did not err in its use of Fares's model numbers as a starting point in articulating irrigation requirements for HC&S's fields.

3. The Commission Erred In Calculating HC&S's Acreage.

Hui/MTF argues that the Commission erred in including fields 921 and 922 when calculating HC&S's acreage. Hui/MTF alleges error on two grounds: first, the Commission wrongfully took judicial notice of facts affecting an alternative water source for the fields, and second, the soil quality of fields 921 and 922 is poor and it is unreasonable to provide fresh water to cultivate them.

As the Commission found, fields 921 and 922 are sandy "scrub land" that HC&S had never cultivated until sometime between 1995 and 1997 when it entered into an agreement with Maui Land and Pine ("MLP"), under which MLP delivered wastewater from its pineapple cannery to irrigate the fields for seed cane. After the close of evidence, the Commission took judicial notice of newspaper reports that: (1) MLP announced that it would cease pineapple operations, (2) Haliimaile Pineapple Company would "revive" the fresh fruit operations, and (3) this "should not

result in a restoration of the wastewater source." Hui/MTF argues that it was error for the Commission to take judicial notice of these three "facts".

Hawai'i Rules of Evidence ("HRE") Rule 201, limits the scope of judicial notice to facts "not subject to reasonable dispute in that it is either (1) generally known within the territorial jurisdiction of the trial court, or (2) capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned." HRE Rule 201(b). In this case, the Commission took judicial notice of facts presented in two newspaper articles. There is precedent for taking judicial notice of facts as reported by newspapers. Application of Pioneer Mill Co., 53 Haw. 496, 497 n.1, 497 P.2d 549, 551 n.1 (taking judicial notice that a land court judge had announced his candidacy for public office, based upon newspaper articles submitted by the parties). In this case, however, the Commission went further than taking notice of facts reported in newspapers: it predicted the impact of those facts on HC&S's water supply. HRE Rule 201 does not permit the Commission to take judicial notice of a possible effect of a change in ownership in the pineapple cannery. First, this prediction fits neither prong of the relevant rule of evidence; the effect of the change of ownership on HC&S's water supply is neither "generally known within the territorial jurisdiction" nor "capable of accurate and

ready determination by resort to sources whose accuracy cannot reasonably be questioned." HRE Rule 201(b). Second, the prediction that wastewater will no longer be available is purely speculative. In fact, one of the Commission's FOF contradicts this speculation, stating "due to the shutdown of MLP's cannery operation, MLP mill wastewater will only be able to supply approximately half of the irrigation requirements of Fields 921 and 922 in the future." Furthermore, it is entirely possible that the company that "revived" operations also "revived" the practice of providing wastewater to HC&S. Hui/MTF are correct that the Commission's taking judicial notice in this instance was improper.

Hui/MTF also argues that the Commission erred in permitting HC&S to include fields 921 and 922 in its acreage because it is marginal farm land, or, as found by the Commission, "sandy 'scrub land.'" Hui/MTF argues that the burden is on HC&S to show "the propriety of draining water from public streams" to irrigate this land which had been uncultivated until a wastewater source was available.

The Commission found that fields 921 and 922 are similar to field 920, another "sandy 'scrub land'" field on which HC&S ceased cultivation because it "has a very sandy soil and has consumed more water than other fields." The Commission also explicitly excluded field 920 from HC&S's acreage and water duty

calculations, "because it has consumed more water because of the porosity of its sandy soil and its use for seed cane." HC&S points to testimony from HC&S's agronomist that HC&S is able to grow sugar on those fields because the sandy area has loam soil underneath it, thus permitting HC&S to achieve "good crop growth." Though HC&S draws the court's attention to this testimony in its briefing, this testimony is not included in the Commission's FOF/COL D&O. In fact, the Commission found no explicit facts regarding the propriety of cultivating the fields; instead the Commission included fields 921 and 922 in HC&S's acreage without explanation. As evinced by HC&S's and the Commission's treatment of field 920, the wisdom of irrigating fields 921 and 922 with Nā Wai ʻEhā water is questionable. The record does not contain sufficient analysis to support the conclusion that fields 921 and 922 should be treated differently from field 920. Similarly, the record does not contain sufficient analysis showing that the Commission considered these fields with "a level of openness, diligence, and foresight" required when authorizing the diversion of our public trust res. On remand, the Commission must reevaluate its determination that HC&S should be permitted to divert Nā Wai ʻEhā water to irrigate fields 921 and 922.

4. The Commission Erred In Its Treatment Of Some Of The Diverters' System Losses.

Hui/MTF also argues that the Commission erred in failing to hold HC&S and WWC to their burdens of proof regarding losses. Hui/MTF contends that diverting parties bear a burden of justifying losses and adopting practicable mitigation. WWC argues that there is no burden of proof on diverting parties in an IIFS proceeding; WWC also notes that "[n]othing within HRS § 174C-71(2) mandates that the Commission consider or not consider system losses. Likewise nothing within the public trust doctrine mandates that the Commission consider or not consider system losses." HC&S responds that "some system loss, such as evaporation from open ditches and reservoirs, is unavoidable and not unreasonable," and that the Commission's determination of system losses is reasonable and not clearly erroneous.

With regard to losses, the Commission found:

> 375. The great majority of WWC's ditches are open and unlined. All of WWC's reservoirs are unlined.
>
> 376. WWC did not address the feasibility of minimizing the losses from its system except to state that it "may . . . in the future" have plans to line the unlined portions of their system.
>
> [. . .]
>
> 423. HC&S estimates that it loses 6-8 mgd through seepage from the Waiale reservoir, depending on the level of the reservoir. Seepage throughout the rest of the HC&S ditch and reservoir system is estimated to be 3-4 mgd.
>
> [. . .]
>
> 425. HC&S acknowledges that "high density polyethylene lining could negate much of the seepage, not all of it" and that concrete lining "is obviously another option." HC&S

> has no estimates of the cost to line Waiale Reservoir or the other reservoirs and ditches and has undertaken no engineering or financial analysis of what it would take to reduce the losses.

The Commission concluded that WWC and HC&S have "not established the lack of practicable mitigating measures to address these losses." The Commission then "assum[ed]" that "losses could be halved" by lining most of WWC's reservoirs, and concluded that WWC's reasonable losses are 2.0 mgd. The Commission also deemed HC&S's reasonable losses to be 2.0 mgd, after estimating that HC&S could line the Waiale Reservoir to prevent 6-8 mgd, and, like WWC, could halve remaining losses.

First, in considering these losses, it is necessary to recognize the magnitude of the losses. If the Commission's estimates are correct and system losses run between 13-16 mgd[21], then the minimal estimation of that loss is approximately twice the 6.84 mgd the Commission estimated for deliveries to all kuleana system users in Nā Wai ʻEhā. The lowest estimation of losses, 13 mgd, is higher than the total volume that the final IIFS restore to the Waiheʻe and Waiehu Streams.[22] Briefly stated, losses in the water system of Nā Wai ʻEhā are massive. The Commission's order that HC&S line the Waiale Reservoir to prevent a large portion of these losses is commendable and shows the

[21] This includes 6-8 mgd for the Waiale Reservoir, 3-4 mgd for HC&S's water system, and 4 mgd for WWC's water system.

[22] This includes 10 mgd for Waiheʻe Stream, 1.6 mgd for North Waiehu Stream, and 0.9 mgd for South Waiehu Stream, for a total of 12.5 mgd.

"diligence" and "foresight" expected of the Commission in its management of the public trust.

Second, WWC contends that the Commission, when setting an IIFS, does not have to consider system losses. The Commission does not respond to the argument in its answering brief, but the water code indicates that a diverter's system losses may factor into the Commission's estimations of noninstream uses when it sets an IIFS. The statute articulating the IIFS standards mandates that the Commission "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[.]" HRS § 174C-71(2)(D). The plain meaning of the word "importance" requires the Commission to judge the value of a party's noninstream use against the other present or potential uses. The value of diverting water, only to lose the water due to avoidable or unreasonable circumstances is unlikely to outweigh the value of retaining the water for instream uses. Therefore, the Commission did not err in considering losses.

However, it appears that the Commission erred in its articulation of the burden of proof regarding losses. The Commission's FOF/COL D&O twice cites Waiāhole I and Waiāhole II for authority that "[o]ffstream users have the burden to prove that any system losses are reasonable-beneficial by establishing

the lack of practicable mitigation measures, including repairs, maintenance, and lining of ditches and reservoirs." The Commission erred placing the burden of proof on the parties in the IIFS proceeding, as the authorities cited by the Commission apply in the context of a WUPA. In Waiāhole I, the cited discussion of losses considered Waiāhole Irrigation Company's ("WIC") request for 2.0 mgd to compensate for the losses of its ditch system. 94 Hawai'i at 118, 9 P.3d at 430. There, the Commission denied WIC's request, but suggested that WIC could draw "non-regulated" surface water to cover the losses; on appeal, this court concluded that the Commission's suggestion was erroneous for several reasons, and held that the Commission must consider the 2.0 mgd as a "'use' pursuant to the permitting process." 94 Hawai'i at 118, 173, 9 P.3d at 430, 485. On remand, the Commission found that "[o]perational losses are a normal component of any water delivery system" and therefore issued a permit to WIC's successor in interest, Agribusiness Development Corporation ("ADC"), to cover the losses. Waiāhole II, 105 Hawai'i at 27, 93 P.3d at 669. When that decision returned to this court on further appeal, this court held that the Commission's decision was incomplete because it did not include findings that ADC met its burden as a permit holder

pursuant to HRS § 174C-49(a)[23]. Id. This burden is articulated in the WUPA statute, but is absent from the statutes governing IIFS. The Commission erred when it imposed a WUPA burden on the diverting parties in the IIFS CCH. As noted above, the burden in setting an IIFS is on the Commission to "protect instream values to the extent practicable." Waiāhole II, 105 Hawai'i at 11, 93 P.3d at 653; HRS § 174C-71(2)(A).

The court concludes that the Commission did not meet this burden when it "assum[ed]" that WWC's and HC&S's losses could be halved. As discussed above, the court has held that, due to the fact that the Commission must articulate an IIFS at an "early planning stage," the Commission "need only reasonably estimate instream and offstream demands." Waiāhole I, 94 Hawai'i at 155 n.60, 9 P.3d at 467 n.60. Though reasonable estimates are

[23] HRS § 174C-49(a) states that "[t]o obtain a permit pursuant to this part, the applicant shall establish that the proposed use of water:

(1) Can be accommodated with the available water source;

(2) Is a reasonable-beneficial use as defined in section 174C-3;

(3) Will not interfere with any existing legal use of water;

(4) Is consistent with the public interest;

(5) Is consistent with state and county general plans and land use designations;

(6) Is consistent with county land use plans and policies; and

(7) Will not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

HRS § 174C-49(a) (1993).

permitted at this stage, the Commission did not provide any analysis on how it reached that figure to show that it had "reasonably estimate[d]" that half of the losses could be eliminated. In choosing a number that appears to be arbitrary, the Commission could have significantly over- or underestimated the potential for mitigation of losses in HC&S's and WWC's water systems. On remand, the Commission must "reasonably estimate" losses, mindful of its duty to "protect instream values to the extent practicable."

5. The Commission Erred In Its Consideration Of HC&S's Well No. 7.

Hui/MTF argues that the Commission arbitrarily minimized Well No. 7's potential contributions. OHA raises a similar challenge regarding Well No. 7; it contends that the Commission did not properly weigh HC&S's potential use from the well. More specifically, OHA claims that HC&S did not demonstrate that Well No. 7 is not a practicable alternative, and that the Commission's lowering of Well No. 7's yield was arbitrary and capricious.

Well No. 7 is the only one of HC&S's sixteen brackish water wells on its plantation that is able to introduce water into HC&S's internal ditch system. From 1927 until the 1980s, Well No. 7 was HC&S's primary source of irrigation water for the 3,650-acre Waiheʻe-Hopoi Fields; HC&S pumped an average of about

21 mgd from Well No. 7 until 1988, when a competing sugar company ceased operations, freeing up a great amount of Nā Wai ʻEhā water for HC&S use. For the past twenty-five years, HC&S has minimized use of Well No. 7, but it has occasionally used the well; in fact, it used the well heavily on two occasions: for six months from June through November of 1996, HC&S pumped an average of 25 mgd, and for six months from May through October 2000, HC&S pumped an average of 18.9 mgd.

Well No. 7 is currently configured with three pumps: pumps 7A and 7B are at water level and can each pump 17.5 mgd to ground level, for a total of 35 mgd, which it can distribute to about 800 acres of the 3,650 acres of the Waiheʻe-Hopoi Fields. The third pump, Pump 7C, is a booster pump at ground level that HC&S claims can pump 14 mgd[24] from pump 7A to Waiheʻe Ditch for distribution to all of the Waiheʻe-Hopoi Fields except for the 175-acre Field 715.

During the hearings, HC&S offered four explanations for its argument that it would be impracticable to rely heavily on water pumped from Well No. 7. First, HC&S estimates that it would incur an estimated $1 million dollars in capital costs to install new pipelines and pumps. Second, HC&S claims that it

[24] The Commission's FOF indicate suspicion about the accuracy of this figure. FOF 497 states, "According to HC&S, as currently configured, Well No. 7 can supply only 14 mgd to the Waiheʻe-Hopoi Fields, with the exception of Field 715. However, HC&S's records do not indicate that Well. No. 7 was ever configured differently than its current configuration."

does not have adequate electrical power to run the pumps on a consistent and sustained basis because of its power contract with Maui Electric Company ("MECO"). HC&S estimates it would incur costs of $777,650 to upgrade its pumps and electrical equipment to meet MECO's standards for servicing such equipment; HC&S also claims it would cost $7,440 per day for energy to run Well No. 7, and that HC&S would lose $1.8 million in revenues under its contract with MECO as well as a decrease in HC&S's avoided cost rate and penalties three times the power rate for power it does not deliver. Third, HC&S claims that increased pumping would exacerbate the degree to which sustainable yield is already being exceeded and reduce the recharge from the imported surface water that sustains the Kahului aquifer. Fourth, HC&S claims that increased pumping of the well would increase the salinity of the water.

The Commission's Final D&O considered the first three factors listed above (the capital costs, energy costs, and aquifer recharge) and determined that HC&S must pump only 9.5 mgd from Well No. 7. The Commission determined that Well No. 7 is an alternative that most likely would not be available on a daily basis, citing the uncertainties about the recharge rate and electrical power. In determining that HC&S must pump 9.5 mgd, the Commission required that HC&S pay additional energy costs to pump the water, but did not require HC&S to accrue any capital

costs. The D&O requires HC&S to provide monthly ground water use reports documenting the volume of water pumped from Well No. 7, along with ground water levels and salinity measurements.

In his dissent, Dr. Miike criticized the Commission majority for its treatment of Well No. 7, writing that the 9.5 mgd figure is "without any credible foundation." This is a main point of error on appeal for Hui/MTF and OHA; they argue that the Commission arbitrarily minimized Well No. 7's potential contributions as an alternative source to Nā Wai ʻEhā water.

The Commission's response is contradictory and makes it clear that guidance is necessary in this area. First, the Commission responds that "neither the statutes nor the administrative rules require an analysis of practicable alternatives in setting the IIFS." The Commission then asserts that Well No. 7 "had a place" in the IIFS analysis because it is a consideration when weighing instream values with offstream purposes when establishing the IIFS.

The analysis with regard to alternative sources is similar to the analysis with regard to system losses, supra. The water code requires 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[.]" HRS § 174C-71(2)(D). The plain meaning of the word "importance"

requires the Commission to judge the value of a party's noninstream use against the other present or potential uses. Furthermore, as the water code's Declaration of Policy explains, "[t]he state water code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State . . . ." HRS § 174C-2(c) (1993). Allowing a water user to divert water from the public trust res when that user has exclusive access to an alternative water source that is currently un- or under-used would not effect the Legislature's policy as expressed in the water code. This suggests that the Commission's second argument is correct; Well No. 7, as an alternative source, "has a place" in the analysis of setting an IIFS because the availability of alternative water sources necessarily diminishes the "importance" of diverting Nā Wai ʻEhā water for noninstream use.

Hui/MTF, OHA, HC&S, and WWC do not dispute the relevance of Well No. 7 water to the IIFS analysis; they do, however, disagree on whether the diverting party bears a burden of proof with regard to this point of analysis. Hui/MTF argues that HC&S bears a burden to prove that using Well No. 7 is not practicable, and that the Commission is "duty bound" to hold HC&S to its burden. OHA agrees that the burden falls to HC&S to demonstrate that Well No. 7 is not a practicable alternative. HC&S and WWC both argue that the burden falls to the Commission to determine IIFS that best serve the public interest. The

Commission's FOF/COL D&O does not specify a burden of proof for alternative sources, as it did for system losses. In its introduction, however, the Commission does specify a general standard that "[f]or those seeking private, commercial uses of water, there is a higher level of scrutiny. In practical terms, this means that the burden ultimately lies with those seeking or approving such uses to justify them in light of the purposes protected by the trust." More specific to alternative sources, the Commission stated that it "is not obliged to ensure that any particular user enjoys a subsidy or guaranteed access to less expensive water sources when alternatives are available and public values are at stake," and also that "[a]n applicant's inability to afford an alternative source of water, standing alone, does not render that alternative impracticable."

In evaluating Well No. 7 and HC&S's four arguments listed above, the Commission found the following:

> 494. [. . .] From 1927 until additional Na Wai 'Eha water became available in the 1980s, HC&S's primary source of irrigation water for its Waiheʻe-Hopoi Fields was Well No. 7, [. . .] a brackish water well.
>
> 495. Between 1927 and 1985, HC&S pumped an average of about 21 mgd from Well No. 7. Since the additional Na Wai 'Eha flows became available. HC&S has minimized its use of Well No. 7 but used it heavily on to occasions: e.g., for the six-month period from June through November of 1996, an average of 25 mgd was pumped; and for the six-month period from May through October of 2000, an average of 18.9 mgd was pumped.
>
> [. . .]
>
> 497. According to HC&S, as currently configured, Well No. 7 can supply only 14 mgd to the Waiheʻe-Hopoi Fields, with the

> exception of Field 715. However, HC&S's records do not indicate that Well No. 7 was ever configured differently than its current configuration.
>
> 498. HC&S estimates that it would cost approximately $525,000 to add another booster pump and additional distribution pipeline to increase the volume that can be pumped from Well No. 7 to HC&S's Waiheʻe Ditch from 14 mgd to 28 mgd; and the cost of an additional pipeline to reach Field 715 would be $475,000.
>
> 499. HC&S also claims that it does not have adequate electrical power to run the pumps for Well No. 7 on a consistent and sustained basis because of its power contract with Maui Electric Company ("MECO") and limitations of its capacity to generate electricity through its system of burning bagasse and other supplemental fuels in its power plant and the operation of its hydro power turbines on its ditch system which are supplied by East Maui water[.]
>
> 500. HC&S also claims that any increased pumping of water from the Kahului aquifer to replace surface water being imported from the West Maui Ditch System would both exacerbate the degree to which the sustainable yield is already being exceeded and reduce the recharge from imported surface water that sustains the aquifer.

These findings of fact are plainly descriptions of testimony. In its conclusions of law section examining "Reasonable Offstream Uses," the Commission restated several of these "findings," indicating that the Commission adopted the testimony as fact. The Commission then stated

> The combined facts that the current sustainable yield of the aquifer is already being exceeded; that increased pumping from Well No. 7 may exacerbate that strain; and that the historically higher levels of pumping occurred during a period where furrow irrigation methods were affecting recharge rates for the aquifer, the practical alternative from Well No. 7 is lower than historic rates. Considering these uncertainties in combination with the Commission's decision to place the full burden of remedying losses immediately upon HC&S, discussed intra, the practical alternative from Well No. 7 is deemed 9.5 mgd. This alternative will not require capital costs, only the costs of pumping.

The Commission erred in adopting HC&S's testimony without any assessment of the evidence on the record that

contradicted HC&S's arguments. As the court explained in Waiāhole I, where "the record demonstrates considerable conflict or uncertainty in the evidence, the agency must articulate its factual analysis with reasonable clarity, giving some reason for discounting the evidence rejected." 94 Hawai'i at 163-64, 9 P.3d at 475-76. The record shows that the Commission did not explain its analysis with "reasonable clarity" regarding any of the "facts" recited above.

For example, OHA shows that, with regard to HC&S's claim that pumping Well No. 7 would result in a diminished aquifer, HC&S had represented the exact opposite to the Commission in another context but around the same time as the hearings in this case. OHA's exhibit C-90 is a letter dated January 11, 2008 to the Commission from HC&S's Senior Vice President, Rick Volner, regarding the Public Review Draft Water Resource Protection Plan ("WRPP") for parts of West Maui, including the Kahului aquifer. In its letter, HC&S states that it has five wells in the Kahului aquifer and eleven wells in the Pā'ia aquifer. HC&S writes

> Over the last twenty years, the daily average rate of withdrawal, by year, for all 16 of these wells combined has ranged from approximately 40 mgd to as much as 112 mgd far in excess of the combined sustainable yield of between 7 and 8 mgd for the Kahului and Paia aquifers recommended in the Draft WRPP. Several of these wells have been in operation for more than a hundred years, and all have been in place and operated for many decades without any long term deterioration in water quality.

Though these written comments contradict the evidence it

presented regarding its inability to pump Well No. 7 due to the alleged recharge problem, the Commission does not explain why it disregarded the written comments in favor of HC&S's evidence supporting the existence of a recharge problem.

The Commission attempted to analyze the economic impact of requiring HC&S to augment Nā Wai ʻEhā water with water from Well No. 7. HC&S claimed that the economic consequences of reduced allowable diversion or increased requirements to pump Well No. 7 would result in HC&S discontinuing all operations on Maui. The Commission found that:

> HC&S had not "done any economic analysis on how a reduction of available surface water in this case would force HC&S to shut down"; Mr. Holiday[, President of HC&S's Agricultural Group,] "[could not] say yes or no" when asked whether shifting 9 mgd of Nā Wai ʻEhā surface water to another purpose would prevent HC&S from being viable, but testified that HC&S is "assuming" that impact "for planning purposes."

As the Commission recited in its FOF/COL, Catherine Chan-Halbrendt, Professor in the Department of Natural Resources and Environmental Management at the University of Hawaiʻi, Mānoa, testified that "the lack of any economic analysis, or the data required to conduct such an analysis, prevents anyone, including this Commission, from evaluating HC&S's claims of economic impact." The Commission agreed that the record was insufficient, stating "It would have been more helpful to the Commission if either or both parties had provided information on incremental decreases in surface water to the 5,000 acres of HC&S's West Maui

Fields." Nonetheless, the Commission stated that "the lack of such analyses does not prohibit the Commission from its duty of weighing instream values with non-instream uses."

The record shows, however, that the Commission did not merely weigh instream values with noninstream uses; rather, the Commission's own explanation of how it arrived at the 9.5 mgd requirement shows that cost to HC&S was the determinative factor. The Commission concluded first that there were uncertainties regarding the aquifer recharge, and that therefore "the practical alternative from Well No. 7 is lower than historic rates." That is, even though the Commission found that historical rates for Well No. 7 showed that "[b]etween 1927 and 1985, HC&S pumped an average of about 21 mgd from Well No. 7," the Commission decided that a lower number would be more appropriate. Then, in determining that lower number, the Commission explained:

> Considering these uncertainties [regarding aquifer recharge] in combination with the Commission's decision to place the full burden of remedying losses immediately upon HC&S, discussed intra, the practical alternative from Well No. 7 is deemed 9.5 mgd. This alternative will not require capital costs, only the costs of pumping.

(emphasis added). That is, since the Commission already required HC&S to pay to eliminate some of its system losses, it would not require HC&S to incur any capital costs to improve Well No. 7.

The Commission erred when it made its decision regarding Well No. 7 based on cost while explicitly acknowledging that it did not have the data it needed to truly analyze cost.

"[T]he Commission must not relegate itself to the role of a mere 'umpire passively calling balls and strikes for adversaries appearing before it,' but instead must take the initiative in considering, protecting, and advancing public rights in the resource at every stage of the planning and decisionmaking process." Waiāhole I, 94 Hawai'i at 143, 9 P.3d at 455 (citations). When such critical information is missing, the Commission must "take the initiative" to obtain the information it needs. Where the Commission's decisionmaking does not display "a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state," the decision cannot stand. Wai'ola, 103 Hawai'i at 422, 83 P.3d at 685. On remand, the Commission must revisit its analysis of Well No. 7 as an alternative source to diverting Nā Wai 'Ehā water, as explained in this opinion.

6. The Commission Erred In Its Consideration of Recycled Wastewater.

Hui/MTF argues that the Commission erred in failing to consider the practicability of using recycled wastewater from the Wailuku/Kahului wastewater treatment plant. In its FOF/COL D&O, the Commission concluded that at least 5 mgd of recycled wastewater "is currently disposed of via underground injection." In response to Hui/MTF's urging that HC&S be required to utilize this water, the Commission found that "the County currently has

no existing infrastructure to deliver recycled wastewater to HC&S's fields." The Commission also heard testimony that "private parties could construct their own pipeline to the plant." The Commission appears to have concluded that this alternative did not merit consideration, based solely on the current lack of infrastructure. This decision does not evince "a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state." Waiʻola, 103 Hawaiʻi at 422, 83 P.3d at 685. The recycled wastewater was quantified as "at least 5 mgd"; 5 mgd is nearly enough water to satisfy all kuleana users in Nā Wai ʻEhā and would be a significant contribution to HC&S's water needs. On remand, the Commission must evaluate this alternative with "openness, diligence, and foresight" to determine whether it is a viable alternative to diverting Nā Wai ʻEhā water.

VI. CONCLUSION

As explained in Section V.A., supra, MDWS's cross-appeal is dismissed.

We recognize and appreciate the substantial time, energy, and diligence that the Commission, Dr. Miike, and the parties have invested in this case. However, for the reasons stated above, the Commission on Water Resource Management's June 10, 2010 Findings of Fact, Conclusions of Law, Decision and

Order is hereby vacated and remanded to the Commission for further proceedings consistent with this opinion.

/s/ Mark E. Recktenwald

/s/ Paula A. Nakayama

/s/ Sabrina S. McKenna

/s/ Rom A. Trader

Isaac H. Moriwake and D. Kapuaʻala Sproat of Earthjustice for Appellant Hui O Nā Wai ʻEhā and Maui Tomorrow Foundation, Inc.

Anna Elento-Sneed and Pamela W. Bunn of Alston Hunt Floyd & Ing for Appellant Office of Hawaiian Affairs

Patrick K. Wong, Corporation Counsel and Jane E. Lovell, Deputy Corporation Counsel, County of Maui, and Jon M. Van Dyke, for Appellee/Cross-Appellant County of Maui, Department of Water Supply

Donna H. Kalama and Julie H. China, Deputy Attorneys General, for Appellee Commission on Water Resource Management

David Schulmeister and Elijah Yip of Cades Schutte LLP for Appellee Hawaiian Commercial and Sugar Company

Paul R. Mancini and James W. Geiger of Mancini, Welch & Geiger and Gilbert S.C. Keith-Agaran for Appellee Wailuku Water Company, LLC