

COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

Surface Water Use Applications,)
Integration of Appurtenant Rights) Case Number CCH-MA 15-01
and Amendments to the Interim Instream)
Flow Standards, Nā Wai ‘Ehā Surface)
Water Management Areas of Waihe‘e)
River, Waiehu Stream, Wailuku River)
(previously known as ‘Īao Stream))
and Waikapū Stream, Maui)
_____)

FINDINGS OF FACT,

CONCLUSIONS OF LAW, AND DECISION & ORDER

I hereby certify that the foregoing is a true and correct copy of the original document on file in the office of the Commission on Water Resource Management


Dated Jun 28, 2021 
M. Kaleo Manuel
Deputy Director

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Figure 1: WWC Irrigation System and Location of SWUPAs

Appendix 1: SWUPAs and Corresponding Findings of Fact and Conclusions of Law

Appendix 2: Summary of Wailuku Country Estates Irrigation Company (WCEIC) Appurtenant Rights and Permits

Appendix 3: Calculation of Appurtenant Rights Acreage for Wailuku Country Estates Irrigation Company (WCEIC) Lots

COMMISSION ON WATER RESOURCE MANAGEMENT

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER

This contested case hearing addresses:

- 1) the Petition to revisit and further amend the Interim Instream Flow Standards (*hereinafter* "IIFS") of the four rivers and streams of Nā Wai ‘Ehā, because of the January 6, 2016 announcement by Alexander & Baldwin, Inc. ("A&B") that it would close Hawaiian Commercial & Sugar Company (*hereinafter*, "HC&S") by the end of the year and transition to diversified agriculture (“Hui o Nā Wai ‘Ehā's and Maui Tomorrow Foundation, Inc.'s Petition to Amend Upward the Interim Instream Flow Standards for Waihe‘e River, North and South Waiehu Streams, Wailuku River,¹ and Waikapū Stream and Their Tributaries; and Motion to Consolidate or Consider in Parallel with Case No. CCH-MA 15-01,” March 9, 2016 (*hereinafter*, “Hui/MTF's March 2016 Petition and Motion”), Exhibit B.);
- 2) the final determination and quantification of the appurtenant rights of the parcels of land previously granted provisional recognition ("Nā Wai ‘Ehā Provisional Order on Claims That Particular Parcels Have Appurtenant Rights," CCH MA 13-02: Provisional Recognition of Appurtenant Rights, Nā Wai ‘Ehā Surface Water Management Area, Waihe‘e, Waiehu, ‘Īao, Waikapū Streams, Maui, Hawai‘i, December 31, 2014 (*hereinafter*, "CCH MA 13-02: December 2014 Provisional Appurtenant Rights")); and
- 3) the surface Water Use Permit Applications (*hereinafter*, “WUPA”) for existing and/or new uses, which are required for noninstream uses because of the designation of Nā Wai ‘Ehā as a Surface Water Management Area.

¹ In 2015, the Hawai‘i Board on Geographic Names (“HBGN”) and the U.S. Board on Geographic Names approved Hui o Nā Wai ‘Ehā's request to officially reinstate the name “Wailuku River” to the portion of ‘Īao Stream beginning with its confluence with Kinihāpai Stream, which is within the ‘Īao Valley State Monument, and flowing to the ocean. (Hui/MTF's March 2016 Petition and Motion.)

The Commission makes the following Findings of Fact (*hereinafter*, “FOF”), Conclusions of Law (*hereinafter*, “COL”), and Decision and Order (*hereinafter*, “D&O”), based on the records maintained by the Commission on Water Resource Management (*hereinafter*, “Commission”) and the witness testimonies and exhibits presented and accepted into evidence.²

If any statement denominated a FOF is more properly considered a COL, then it should be treated as a COL; and conversely, if any statement denominated a COL is more properly considered a FOF, then it should be treated as a FOF.

FOF that have been proposed by the parties but not incorporated in this D&O have been excluded because they may be duplicative, not relevant, not material, taken out of context, contrary (in whole or in part) to the found facts, an opinion (in whole or in part), contradicted by other evidence, or contrary to law. Proposed FOF that have been incorporated may have modifications or corrections that do not substantially alter the meaning of the original proposed findings.

I. FINDINGS OF FACT

A. Chronology

1. On July 21, 2003, the ‘Īao Aquifer System Area was designated a Ground Water Management Area. Ground water in the ‘Īao Aquifer System includes basal, caprock, and high-level dike sources. (‘Īao Ground Water Management Area High-Level Source Water-Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihe‘e River and Waiehu, ‘Īao, and Waikapū Streams Contested Case Hearing Findings of Fact, Conclusions of Law, and Decision and Order (CCH-MA06-01) filed on June 10, 2010 (*hereinafter*, “CCH-MA06-01 D&O”)³: FOF 2.)

² References to the record are enclosed in parentheses, followed by a party’s proposed FOF, if accepted. “Exh.” refers to exhibits accompanying written or oral testimony, followed by the exhibit number. Written testimony is referred to as follows: name of the witness, the date of the written testimony (“WT”), and the page and line numbers, or paragraph, of that testimony. Oral testimony is referred to as follows: name of the witness, the date of the transcript (“Tr.”), and the page and line numbers.

³ Many of the FOF in this contested case, CCH-MA 15-01, have been adopted in whole or in part from FOF in the CCH-MA06-01 D&O and the 2014 mediated agreement that was reached on remand from the Hawai‘i Supreme Court of CCH-MA06-01 in 2012 (FOF 9-18). When such preceding FOF have been adopted, reference to the original sources have been deleted but can be found at the referenced FOF. For example, FOF 29 is referenced to CCH-MA06-01 D&O: FOF

2. On June 25, 2004, Hui O Nā Wai ‘Ehā and Maui Tomorrow Foundation, Inc. (*hereinafter*, “Hui/MTF”), filed a “Petition to Amend the Interim Instream Flow Standards for Waihe‘e, North & South Waiehu, ‘Āao, and Waikapū Streams and Their Tributaries.” (CCH-MA06-01 D&O: FOF 3.)

3. The groundwater WUPAs for caprock sources were approved by the Commission on October 25, 2005. (CCH-MA06-01 D&O: FOF 15.)

4. Seven WUPAs for basal sources from the Maui Department of Water Supply (*hereinafter*, “MDWS”) and a new use application from the Living Waters Land Foundation were approved by the Commission on February 15, 2006. (CCH-MA06-01 D&O: FOF 15.)

5. Kehalani Mauka filed a competing application for the remaining MDWS basal source WUPA, which was decided through a contested case hearing for which the Commission issued its order on January 31, 2007. (CCH-MA06-01 D&O: FOF 14.)

6. On February 15, 2006, the Commission initiated a contested case hearing for the ‘Āao high-level WUPAs and specified that the June 2004 petition to amend the IIFS of the Nā Wai ‘Ehā streams be included in the contested case hearing.⁴ (CCH-MA06-01 D&O: FOF 18.)

7. The contested case hearing's evidentiary hearing was held on Maui over 23 days, commencing on December 3, 2007, and concluding on March 4, 2008, with one additional day of hearings on October 14, 2008, after motions to reopen the evidence and to supplement the record were granted. (CCH-MA06-01 D&O: FOF 25, 28-30.)

8. In response to a December 6, 2006 petition by Hui/MTF, on March 13, 2008, the Commission designated the four streams of Nā Wai ‘Ehā as a surface Water Management Area. The effective date of designation was April 30, 2008, and applications for existing use permits had to be filed within a period of one year from the effective date of designation, or no later than April 30, 2009. (Hui/MTF's March 2016 Petition and Motion; CCH-MA 06-01 D&O: FOF 26.)

9. On June 10, 2010, the Commission issued its Decision and Order on the ‘Āao high-level WUPAs and the petition to amend the Nā Wai ‘Ehā IIFS. (CCH-MA06-01 D&O.)

29, whose reference was identified as “(Exh. E-53, p. 4, Exh. C-2, p. 1; OKI WDT 9/14/07, ¶ 5.) WWC FOF 31.”

⁴ The high-level, diked groundwaters have a direct connection to the streams.

10. MDWS was awarded permits for its existing use of 1.042 mgd for the Kepaniwai Well (Well N. 5332-05) and 1.359 mgd for the 'Īao Tunnel (Well No. 5332-02). (CCH-MA06-01 D&O, p. 195.)

11. HC&S was awarded a permit for 0.1 mgd for the 'Īao Tunnel (Well No. 5330-02). (CCH-MA06-01 D&O, p. 195.)

12. Wailuku Water Company's (*hereinafter*, "WWC") WUPA for its portion of the 'Īao Tunnel (Well No. 5332-02) that it shares with MDWS was not complete and not included in the contested case hearing. During the contested case hearing, WWC attempted to amend its WUPA to cover the amount in excess of that used by MDWS, or 0.227 mgd, but the Commission ruled that WWC would have to file a new use WUPA for that amount. (CCH-MA06-01 D&O, p. 196.)

13. WWC's WUPAs for three other tunnels were denied, because they discharged into Wailuku River upstream of all diversions, and whatever amounts they discharged were incorporated into the IIFS for Wailuku River. Even if WWC were able to quantify the amounts discharged by the three tunnels, they were not being used by WWC as separate and distinct sources of water from WWC's surface water diversions of Wailuku River and did not qualify for water-use permits from the high-level, diked ground waters. (CCH-MA06-01 D&O, p. 196.)

14. On the petitions to amend the IIFS, the Commission:

- a. returned 10 mgd to Waihe'e River,
- b. returned 1.6 mgd to North Waiehu Stream and 0.9 mgd to South Waiehu Stream, with an estimated flow of 0.6 mgd at the mouth after reducing for estimated losses of 1.9 mgd.
- c. returned no water to Wailuku River, and
- d. returned no water to Waikapū Stream.

(CCH-MA06-01 D&O, pp. 185-187.)

15. On appeal, the WUPAs (*supra*, FOF 10-13) were not contested, but on August 15, 2012, the Hawai'i Supreme Court remanded the Commission's June 10, 2010 decision for further proceedings on:

- a. Findings of Fact and Conclusions of Law regarding the effect of the amended IIFS on traditional and customary native Hawaiian practices in Nā Wai 'Ehā, and regarding the feasibility of protecting any affected practices;

b. an incomplete analysis of instream uses, as it focused on amphidromous species and did not fully consider other instream uses to which witnesses testified at the hearings;

c. the Commission's consideration of alternative water sources, and its calculation of diverting parties' acreage and reasonable system losses.

(In re 'Īao Ground Water Management Area High-Level Surface Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihe'e River and Waiehu, 'Īao, and Waikapū Contested Case Hearing (hereinafter, "Nā Wai 'Ehā"), 128 Hawai'i 228, 287 P.3d 129 (2012).)

16. Shortly before the remanded contested case hearing was to begin on March 10, 2014, the parties agreed to the Commission's chairperson's request that the parties engage in mediation, which took place from March 10-14, 2014, and which resulted in an agreement that the Hearings Officer recommended the Commission approve and adopt, which it did, on April 17, 2014. ("Commission on Water Resource Management Order Adopting: 1) Hearings Officer's Recommendation on the Mediated Agreement Between the Parties; and 2) Stipulation Re Mediator's Report of Joint Proposed Findings of Fact, Conclusions of Law, Decision and Order," April 17, 2014 (*hereinafter*, "2014 Mediated Agreement").)

17. In the 2014 Mediated Agreement:

a. The IIFS for Waihe'e River remained at 10 mgd per CCH-MA06-01 D&O.

b. Waiehu Stream:

i. The IIFS for North Waiehu Stream was modified to reflect the inactivation of the North Waiehu Ditch after the Commission's 2010 Decision and Order. The new IIFS for North Waiehu Stream would be 1.0 mgd just above the Waihe'e Ditch, reflecting the estimated 0.6 mgd in infiltration losses between the old and new IIFS locations of 1.6 mgd and 1.0 mgd, respectively. WWC would also provide water to the kuleanas previously provided water from the North Waiehu Ditch, continue to serve the Waiehu kuleana users from the Waihe'e Ditch, and modify the inactivated North

Waiehu diversion located just above the Waihe'e Ditch to facilitate passage of native stream species.

- ii. The 0.9 mgd for South Waiehu Stream below the Spreckels Ditch was replaced with a stipulation that HC&S's South Waiehu diversion provide 0.25 mgd to the kuleana intake during low-flow periods, with the remainder returned to the streams.
- iii. The Agreement did not address what would happen to stream flow at the mouth with the elimination of the 0.9 mgd for South Waiehu Stream.

c. A new IIFS for Wailuku River was set at 10 mgd, just below the diversion operated by WWC above the 'Īao-Waikapū and the 'Īao-Maniania Ditches, provided that: 1) when average flow for any day falls below 10 mgd, 3.4 mgd may continue to be diverted to accommodate MDWS's 3.2 mgd for its water treatment plant and 0.2 mgd for kuleana users served exclusively by the 'Īao-Waikapū Ditch; and 2) an IIFS of 5 mgd was established at or near the mouth; and

d. A new IIFS for Waikapū Stream was set at 2.9 mgd just below the South Waikapū Ditch.

(2014 Mediated Agreement: Exhibit 1, pp. 22-23, 25-28.)

18. The 2014 Mediated Agreement also stated that any factual finding on water-use requirements, alternative water sources, or system losses of a party to the proceeding, or of a person who may apply for a water-use permit, was made without prejudice to the rights of the parties and of the Commission to revisit those issues in connection with any proceeding involving a WUPA for water diverted from any of the Nā Wai 'Ehā streams. In a WUPA proceeding the burden of proof with respect to such issues would be upon the applicant rather than upon the Commission, who has the burden in an IIFS proceeding. (2014 Mediated Agreement, Exhibit 1, pp. 18-19.)

19. On September 27, 2011, the Commission had approved a two-step process for determining appurtenant rights in the Nā Wai 'Ehā Surface Water Management Areas, with a February 6, 2012 deadline for applications to be filed. The first step would be to determine whether there is an appurtenant water right associated with the parcel of land on which the water is being used or proposed to be used (*supra*, FOF 20), and the second step would be to quantify

the amount of water associated with that parcel. The quantity determination would be done as part of the surface WUPA process, which is the subject of this contested case hearing. (“Appurtenant Rights Determination in Nā Wai ‘Ehā Surface Water Management Areas (Waihe‘e, Waiehu, ‘Īao and Waikapū Streams) by the Commission on Water Resource Management,” October 26, 2011, published in the Honolulu Star Advertiser and the Maui News issues of November 1 and 8, 2011.)

20. On December 31, 2014, the Commission issued its “Nā Wai ‘Ehā Provisional Order on Claims That Particular Parcels Have Appurtenant Rights,” which provisionally ruled whether particular parcels have valid claims for appurtenant rights, subject to the rights of land owners to file or submit additional information at a later time. (CCH MA 13-02: December 2014 Provisional Appurtenant Rights Order (“Provisional Order”).)

21. A hearing schedule for this contested case hearing was established on November 5, 2015, and later amended to have documents due beginning March 18, 2016, with the start of the contested case hearing on July 11, 2016. (Minute Orders 3, 4.)

22. On January 6, 2016, Alexander & Baldwin, Inc. (“A&B”) announced it would close HC&S by the end of the year and transition to diversified agriculture. (Hui/MTF's 2016 Petition and Motion, Exhibit B.)

23. On March 9, 2016, Hui/MTF petitioned to amend upward the IIFS and to consolidate or consider it in parallel with the current contested case hearing. (Hui/MTF's 2016 Petition and Motion.)

24. On July 7, 2016, the Commission accepted Hui/MTF's petition and ordered that it be consolidated with the contested case hearing in a manner to be determined by the Hearings Officer. (“Order Accepting Hui o Nā Wai ‘Ehā's and Maui Tomorrow Foundation, Inc.'s Petition to Amend Upward the Interim Instream Flow Standards for Waihe‘e River, North and South Waiehu Streams, Wailuku River, and Waikapū Stream and Their Tributaries and Granting Motion to Consolidate or Conduct in Parallel with Case No. CCH-MA 15-01 Filed on March 9, 2016,” July 7, 2016.)

25. On July 25, 2016, HC&S notified the Hearings Officer and the parties that it would no longer be pursuing SWUPA 2205 for the ‘Īao-Waikapū Fields, because it had decided not to continue leasing the land from Waikapu Properties, LLC, and that instead Waikapu

Properties, LLC would continue to pursue the WUPA in place of HC&S. (“Hawaii Commercial and Sugar Company's Notice Regarding SWUPA 2206,” July 25, 2016.)⁵

26. Between July 11, 2016, and October 14, 2016, eleven days of hearings were held on Maui.

27. After two extensions, on February 17, 2017, the parties submitted their Proposed FOF, COL, and D&O to the Hearings Officer. (Minute Orders 10, 11.)

28. On November 1, 2017 the Hearings Officer submitted his Proposed FOF, COL, and D&O to the Commission and the parties. (Minute Order 12.)

B. The Nā Wai ‘Ehā Rivers and Streams

29. Nā Wai ‘Ehā, or “the four great waters of Maui,” refers to the Waihe‘e River, North and South Waiehu Stream, Wailuku River, and Waikapū Stream. (CCH-MA06-01 D&O: FOF 80.)

30. The Waihe‘e River is the northern-most of the four waters. Flowing in a long, deep, narrow valley, it drains the northeast slopes of the West Maui Mountains. Running a distance of about 26,585 feet, its watershed covers an area of about 4,500 acres. It is the principal source of water in the Nā Wai ‘Ehā area. (CCH-MA06-01 D&O: FOF 81.)

31. Waiehu Stream is formed by the confluence of the North and South Waiehu Streams. Running a distance of about 23,700 feet, its watershed covers an area of about 6,600 acres. (CCH-MA06-01 D&O: FOF 82.)

32. Wailuku River is the second largest in Nā Wai ‘Ehā. Draining a large amphitheater-headed valley, it runs for a distance of about 38,000 feet. Its watershed covers an area of about 14,500 acres. A significant portion of its lower reaches was channelized and the stream bed and banks hardened with concrete by the United States Army Corps of Engineers for flood control and drainage. (CCH-MA06-01 D&O: FOF 83.)

⁵ On February 3, 2017, HC&S informed the Hearings Officer and the Parties that throughout the contested case proceedings it had mistakenly referred to its application for its Waihe‘e-Hopoi fields as SWUPA 2205, and its application for its ‘Īao-Waikapū fields as SWUPA 2206, and that it had inadvertently switched these numbers. SWUPA 2205 refers to the ‘Īao-Waikapū fields, and SWUPA 2206 refers to the Waihe‘e-Hopoi fields. In this decision these SWUPA will be referred to by the correct SWUPA number.

33. Waikapū Stream is the southern-most stream. The longest of the four streams, it is about 63,500 feet in length, with a watershed (Waikapū Valley) that covers about 9,000 acres. (CCH-MA06-01 D&O: FOF 84.)

34. There are three types of ground water systems in the Nā Wai ‘Ehā area: (1) dike impounded; (2) the basal freshwater lens; and (3) perched. (CCH-MA06-01 D&O: FOF 85.)

35. Dike-impounded ground waters occur at high elevations; basal freshwater lenses and perched waters occur at lower elevations closer to the coast. (CCH-MA06-01 D&O: FOF 86.)

36. Gaining reaches of streams are those in which ground water contributes to the streamflow by a breaching of the ground water system by the stream. (CCH-MA06-01 D&O: FOF 87.)

37. Losing reaches of streams are where the channel bottoms are above the water table and an unsaturated zone exists between the stream and water table. (CCH-MA06-01 D&O: FOF 88.)

38. In the upper reaches of the Nā Wai ‘Ehā area, the stream channels intersect the dike-impounded ground waters, which results in a contribution of ground water to the stream, making the streams gaining in the upper reaches. (CCH-MA06-01 D&O: FOF 89.)

39. In the lower reaches of the Nā Wai ‘Ehā area, the stream channels overlies the basal freshwater lenses, allowing stream waters to migrate from the stream bed to the basal lenses, making the streams losing in the lower reaches. (CCH-MA06-01 D&O: FOF 90.)

40. At the mouths of the streams in the Nā Wai ‘Ehā area, some of the stream channels intersect the basal freshwater lenses, making those streams gaining in those areas. (CCH-MA06-01 D&O: FOF 91.)

41. The Nā Wai ‘Ehā streams are generally gaining streams above the existing diversions (described *infra*) and losing streams below the diversions. (CCH-MA06-01 D&O: FOF 92.)

42. The loss rate in a stream is expected to increase as flow increases because: 1) the potential streambed area through which infiltration of water can occur increases with flow; and 2) the increased water level in the stream creates a large vertical hydraulic gradient, which controls the rate of subsurface flow. In addition, loss rates change as a function of the

permeability of the streambed sediments, which may vary over different stream reaches. (CCH-MA06-01 D&O: FOF 93.)

43. A United States Geological Survey (*hereinafter*, “USGS”) study of stream flows in Hawai‘i concluded that flows had decreased significantly over a 90-year period. (CCH-MA06-01 D&O: FOF 94.)

44. While USGS has not observed any significant trends in median flows in the Waihe‘e River over the period, 1984 to 2007, USGS data also show that average (or mean) monthly total stream flows for the Waihe‘e and Wailuku Rivers for the three 8-year periods 1984-1991, 1992-1999, and 2000-2007, decreased by about 25 percent and 10 percent, respectively. For Waihe‘e River, the monthly flows averaged 1639.1 mgd, 1436.0 mgd, and 1236.6 mgd, respectively, for these eight-year periods. These monthly averages translate into daily averages of 54.64 mgd for 1984-1991, 47.87 mgd for 1992-1999, and 41.22 mgd in 2000-2007. (CCH-MA06-01 D&O: FOF 95.) (See FOF 46, *infra*, for a description of median flow.)

1. Stream Flows

45. One of the most useful ways to summarize stream-flow data is through the use of flow-duration curves. A flow-duration curve shows the percentage of time that specified stream flows were equaled or exceeded during a given period of record. (CCH-MA06-01 D&O: FOF 96.)

46. The Q_{50} flow, or median flow, is the flow that is equaled or exceeded 50 percent of the time and is reflective of typical flow conditions. For example, a Q_{50} of 25 mgd means that the flow of the specified stream was 25 mgd or more for half of the measurements of stream flow and less than 25 mgd for the other half of the measurements during the specified period of time; e.g., “the Q_{50} for stream X was 25 mgd for the period 1985-2000.” (CCH-MA06-01 D&O: FOF 97.)

47. Stream flow consists of: (1) ground water discharge, or base flow, where the stream intersects the water table; (2) direct runoff, or overland flow and subsurface storm flow (or interflow) that rapidly returns infiltrated water to the stream following a period of rainfall; (3) water returned from stream bank storage; (4) rain that falls directly on streams; and (5) any additional water, including excess irrigation water, discharged to the stream by humans. (CCH-MA06-01 D&O: FOF 98.)

48. Because ground water levels vary over time, base flow also varies: base flow is higher during periods when the ground water level is high; lower during periods when the ground water level is low; and may cease if the ground water level is lowered below the water level in the stream. (CCH-MA06-01 D&O: FOF 99.)

49. Although measurement of flow in a stream on any given day will reflect the total flow in the stream, separating base flow from total flow is helpful to indicate the ground water contribution to a stream. (CCH-MA06-01 D&O: FOF 100.)

50. For stream flows where more than ground water discharge is contributing to stream flow, USGS uses a computerized base-flow separation method: 1) to estimate the percent of total flow that comes from ground water discharge as total flow varies; and 2) averages these variations to estimate mean base flow. USGS has concluded that mean base flow of perennial streams in Hawai'i generally is between the Q_{60} to Q_{80} flows. (CCH-MA06-01 D&O: FOF 101.)

51. Thus, USGS has concluded that in general, the Q_{70} discharge could be an appropriate estimate of mean base flow for Hawai'i streams. (CCH-MA06-01 D&O: FOF 102.)

52. In dry periods, the USGS model assumes that the base and total flow are the same. In wetter periods, the model uses criteria designed to take away the rain, runoff, and seepage components of stream flow to try to estimate the average base flow at all times when the stream is flowing. Although it has been tested against some form of data, ultimately there is no solid way of validating the model and its results. (CCH-MA06-01 D&O: FOF 103.)

53. The Q_{90} flow is commonly used to characterize low flows in a stream. In Hawai'i, Q_{90} flows may range from near zero for ephemeral streams in areas that receive little rainfall, to tens of cubic feet per second in areas that receive significant rainfall or ground water discharge. The Q_{100} flow represents the lowest flow recorded in the stream, which is most likely all from ground water discharge. (CCH-MA06-01 D&O: FOF 104.)

54. USGS does not calculate base flow for water management purposes; instead, base flows are calculated for other purposes, such as extracting the direct runoff components of total stream flow for estimating water budgets (underestimating base flow results in overestimating direct runoff), identifying the raw component of rainfall when estimating recharge, and surveying how conditions such as base flow may have changed over time. (CCH-MA06-01 D&O: FOF 105.)

2. Waihe'e River

55. Waihe'e River and its main diversions are shown in Figure 1 (Figure 1 has been modified to show reservoirs that have been decommissioned while this case has been pending).

56. In the period of climate years 1984-2007 (a climate year begins on April 1 and is designated by the calendar year in which it begins) at USGS stream-gaging station 16614000 on Waihe'e River near an altitude of about 605 feet upstream of all diversions, the minimum daily mean flow (Q_{100}) was 14 mgd (this minimum flow occurred on only 6 days over 22 years, an average of about 0.3 days per year). For the 1984-2007 climate period, at an altitude of 605 feet, the Q_{90} flow was 24 mgd; the Q_{70} flow was 28 mgd; and the Q_{50} flow was 34 mgd. (CCH-MA06-01 D&O: FOF 107; Exhibit A-R1 in 2014 Mediated Proceedings at pg. 69⁶.)

57. The two main diversions are Waihe'e Ditch near an altitude of about 600 feet, and Spreckels Ditch, near an altitude of about 400 feet and about 0.6 miles downstream from the Waihe'e Ditch. (CCH-MA06-01 D&O: FOF 108.)

58. Estimated stream flow losses in Waihe'e River downstream of the Spreckels Ditch may range from 2.1 to at least 5.9 mgd. Although actual losses may vary as a function of streamflow, because data are limited, a constant loss of 4 mgd is assumed by USGS. (CCH-MA06-01 D&O: FOF 109.)

59. Water also returns to the river in the form of return flows and leakage from ditches⁷ at several locations downstream of the diversions. In some places, the return flows enter the river in well-defined channels, whereas in other places the return flows enter as diffuse flows. (CCH-MA06-01 D&O: FOF 110.)

60. Waihe'e and Spreckels Ditches are capable of diverting all of the dry-weather flow available at the intakes. However, stream flow immediately downstream of the intakes may exist because of leakage through or subsurface flow beneath the dams at these sites. Estimated dry-weather flow immediately downstream of the Waihe'e and Spreckels Ditch intakes

⁶ Exhibit A-R1 is incorporated in the 2014 Mediated Agreement is the USGS Scientific Investigations Report 2010-5011, "*Effects of Surface-Water Diversion on Streamflow, Recharge, Physical Habitat, and Temperature, Nā Wai 'Ehā, Maui, Hawai'i*" which will be referenced hereafter as "USGS SIR 2010-5011."

⁷ The terms "ditch" and "auwai" may be used interchangeably in this decision.

commonly is on the order of about 0.1 mgd, but the stream may not have continuous surface flow from mauka to makai. (CCH-MA06-01 D&O: FOF 111.)

3. North and South Waiehu Streams

61. North Waiehu Stream is shown in Figure 1.

62. Low-flow characteristics for North Waiehu Stream during the 1984-2007 climate years were estimated using record-extension techniques and available historical data during 1911-1917 from discontinued USGS gaging stations 16608000, 16609000, and 16609500. The minimum discharge (Q_{100}) measured at gaging station 16608000 at an altitude of 880 feet was 1.6 mgd during March 1915. For the 1984-2007 climate period, at an altitude of 880 feet, the estimated Q_{90} flow is 1.7 mgd; the estimated Q_{70} flow is 2.5 mgd; and the estimated Q_{50} flow is 3.2 mgd. (CCH-MA06-01 D&O: FOF 113; USGS SIR 2010-5011 pg. 70.)

63. Water was diverted by the North Waiehu Ditch near an altitude of about 860 feet, but has since been abandoned. (CCH-MA06-01 D&O: FOF 114.)

64. USGS estimates that the stream loses 1.3 mgd between the North Waiehu Ditch and the confluence of North and South Waiehu Streams. (Oki, WDT 9/14/07, ¶ 60.) (CCH-MA06-01 D&O: FOF 115.)

65. The North Waiehu Ditch generally diverted most of the water available at the diversion structure, but leakage from the North Waiehu Ditch sometimes returned to the stream. (CCH-MA06-01 D&O: FOF 116.)

66. South Waiehu Stream and its main diversion at the Spreckels Ditch are also shown in Figure 1.

67. Low-flow characteristics for South Waiehu Stream for the 1984-2007 climate years were estimated using record-extension techniques and available historical data during 1911-1917 from discontinued USGS gaging station 16610000. The minimum discharge (Q_{100}) measured at gaging station 16610000 at an altitude of 870 feet was 1.5 mgd during July 1913. For the 1984-2007 climate period, at an altitude of 870 feet, the estimated Q_{90} flow is 1.7 mgd; the estimated Q_{70} flow is 2.3 mgd; and the estimated Q_{50} flow is 3.2 mgd. (CCH-MA06-01 D&O: FOF 119; USGS SIR 2010-5011 pg. 70.)

68. Water is currently diverted from South Waiehu Stream by the Spreckels Ditch and two kuleana ditches farther upstream. The main diversion is the Spreckels Ditch, near an altitude

of about 270 feet and about 1000 feet upstream from the confluence of North and South Waiehu Streams. (CCH-MA06-01 D&O: FOF 120.)

69. No information is available on estimated losses in South Waiehu Stream, but USGS estimates that the loss in Waiehu Stream itself, between the confluence of North and South Waiehu Streams and the mouth, is 0.6 mgd. (CCH-MA06-01 D&O: FOF 121.)

70. Return flows and leakage from the kuleana ditches have been observed entering South Waiehu Stream. In addition, overflow or releases from the Waihe'e and Spreckels Ditches may sometimes enter South Waiehu Stream. (CCH-MA06-01 D&O: FOF 122.)

71. Spreckels Ditch is commonly capable of diverting all of the flow of South Waiehu Stream during dry-weather conditions, although stream flow immediately downstream of the intake may exist because of leakage through or subsurface flow beneath the dam at the intake. Waiehu Stream is commonly dry farther downstream near Lower Waiehu Beach Road, and therefore, Waiehu Stream does not flow continuously from mauka to makai. (CCH-MA06-01 D&O: FOF 123.)

72. 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 just below the highway culverts in lower Waiehu Stream. (CCH-MA06-01 D&O: FOF 124.)

4. Wailuku River

73. Wailuku River and its main diversions are shown in Figure 1.

74. On the basis of 22 years of complete records (climate years 1984-2005) at USGS stream-gaging station 16604500 on Wailuku River near an altitude of 780 feet and above all diversions, the minimum daily mean flow (Q_{100}) was 7.1 mgd (the minimum flow occurred on 29 days, an average of about 1.3 days per year); the Q_{95} flow was 11 mgd; the Q_{90} flow was 12 mgd; the Q_{70} flow was 17 mgd; and the Q_{50} flow was 25 mgd. (CCH-MA06-01 D&O: FOF 126; 2014 Mediated Agreement, Exh. 1, p. 5; USGS SIR 2010-5011 pg. 71.)

75. The two main diversions on Wailuku River are (1) 'Īao-Waikapū/'Īao-Maniania Ditches near an altitude of about 780 feet (there is also a small privately owned pipe farther downstream), and (2) Spreckels Ditch near an altitude of about 260 feet, about 2.4 miles downstream from the 'Īao-Waikapū/'Īao-Maniania Ditches. (CCH-MA06-01 D&O: FOF 127.)

76. The Wailuku River Flood Control Project starts about 2.5 miles above the mouth of Wailuku River and consists of a debris basin, a concrete channel that runs from the debris basin to just downstream of North Market Street, a 20-foot vertical drop, a broadened but unlined channel running to Waiehu Beach Road, and concrete wing walls running about one-half of the distance from the Waiehu Beach Road to the mouth of the stream. (CCH-MA06-01 D&O: FOF 128.)

77. USGS estimates that Wailuku River loses 5.6 mgd in reaches that are not lined with concrete and that are downstream of the common intake of the 'Īao-Waikapū and 'Īao-Maniania Ditch diversions (which is at about 780 feet elevation), or 3.00 miles from about 595 feet elevation down to 35 feet elevation. (CCH-MA06-01 D&O: FOF 129; 2014 Mediated Agreement, Exh. 1, p. 5.)

78. Water that overflows or leaks from the ditch systems or that is discharged through gates in the systems sometimes returns to Wailuku River downstream of the diversions. (CCH-MA06-01 D&O: FOF 130.)

79. Before the 2014 restoration, in the absence of ditch return flows and runoff during and following periods of rainfall, Wailuku River remained dry in some reaches downstream of the main diversion intake for the 'Īao-Maniania and 'Īao-Waikapū Ditches and did not flow continuously from mauka to makai. (CCH-MA06-01 D&O: FOF 131.)

5. Waikapū Stream

80. Waikapū Stream and its main diversions are shown in Figure 1.

81. On the basis of record extension techniques applied to the historical data from Waikapū Stream at gaging station 16650000 near an altitude of 880 feet to Waikapū Stream near an altitude of 1,160 feet above South Side Waikapū Ditch, for climate years 1984-2007, USGS determined the estimated Q_{90} flow ranged from 1.9 mgd to 2.8 mgd; the estimated Q_{70} flow ranged from 2.7 mgd to 3.7 mgd; and the estimated Q_{50} flow ranged from 3.6 mgd to 4.7 mgd. The lowest recorded flow was 3.3 mgd in October 1912. A tributary enters the north side of Waikapū Stream near an altitude of about 1,050 feet and contributes an average of about 1.16 mgd to the main stream, with inflow ranging from 1.99 mgd to 1.47 mgd. (USGS SIR 2010-5011 pg. 72, table 21; *Id.* at 64.)

82. The record extension techniques applied to the historical data to estimate the natural flow near gaging station 16650000 combined 1910-1917 historical data from gaging

station 16650000, flows in the South Side Waikapū Ditch near an altitude of about 1,120 feet, and flows in the Everett Ditch near an altitude of about 900 feet. (Oki, WDT 9/14/07, ¶ 27.) While the Everett Ditch is no longer active, the South Side Waikapū Ditch is. The estimates of natural flow assume no gains, losses, or return flows between the South Side Waikapū Ditch diversion and station 16650000 during the period when the gaging stations were operated. Recent USGS seepage-run data from 2004 indicate no significant net gain or loss between the South Side Waikapū Ditch diversion and station 16650000. (Oki, WDT 9/14/07, ¶ 27.) Thus, the estimated natural flows just above the South Side Waikapū Ditch diversion should be the same as those estimated at station 16650000, while the actual flows at gaging station 16650000 for climate years 1984-2007 should be lower than the estimated natural flow for climate years 1984-2007 by an amount currently diverted at the South Side Waikapū Ditch. (CCH-MA06-01 D&O: FOF 134.)

83. Active diversions on Waikapū Stream include the South Side Waikapū Ditch near an altitude of about 1,120 feet and an intake on the Waihe‘e Ditch (elevation not specified). The Reservoir 6 Ditch (elevation not specified) has since been abandoned.

84. Numerous return flows have been observed in Waikapū Stream downstream of the diversions. (CCH-MA06-01 D&O: FOF 136.)

85. Diversions in Waikapū Stream may not cause the stream to be dry immediately downstream of the diversions, although it is commonly dry downstream of all diversions because of infiltration losses into the streambed, and the stream did not flow continuously from mauka to makai. (CCH-MA06-01 D&O: FOF 137.)

C. Withdrawals and Diversions

1. Tunnels

86. Twelve tunnels were known to be excavated in Nā Wai ‘Ehā between 1900 and 1926. Eight tunnels were excavated in Nā Wai ‘Ehā’s dike complex to tap dike-impounded ground water. The other four tunnels were excavated beneath Wailuku River and Waiehu Stream and collect water from beneath the streams in the valley-floor alluvium. (CCH-MA06-01 D&O: FOF 141-143.)

87. About nine mgd of dike-impounded ground water was developed by tunnels, although most of the water (7.5 mgd) may have discharged naturally to streams below the level of the tunnels had it not been intercepted by the tunnels. (CCH-MA06-01 D&O: FOF 144.)

88. The tunnels that discharge directly into the streams are the Black Gorge Tunnel, ‘Īao Needle Tunnels No. 1 and No. 2, and Waikapū Tunnels No. 1 and No. 2. (CCH-MA06-01 D&O: FOF 145.)

89. Black Gorge Tunnel and ‘Īao Needle Tunnels No. 1 and No. 2 discharge into Wailuku River above all diversions (*See* CCH-MA06-01 D&O, Figure 3). Development of the ‘Īao Tunnel (MDWS/WWC’s Well No. 5332-02, *supra*, FOF 12) caused the Black Gorge Tunnel to go dry. There is no information available to quantify the effects of ‘Īao Needle Tunnels No. 1 and No. 2 on Wailuku River's total flow. (CCH-MA06-01 D&O: FOF 148.)

90. Waikapū Tunnel No. 1 flows into a tributary that joins Waikapū Stream below the diversion for the South Side Waikapū Ditch (*See* CCH-MA06-01 D&O, Figure 4), but its estimated yield is less than 0.01 mgd. (CCH-MA06-01 D&O: FOF 146.)

91. Waikapū Tunnel No. 2 flows into Waikapū Stream above the South Side Waikapū Ditch (*See* CCH-MA06-01 D&O, Figure 4) and has an estimated yield of 1.0 mgd. (CCH-MA06-01 D&O: FOF 147.)

92. Waihe‘e North and Waihe‘e South Tunnels (*See* CCH-MA06-01 D&O, Figure 1), built in 1909, may have contributed to the total flow of Waihe‘e River for a period of time after their construction, but it is not likely that they presently contribute appreciably to the total flow. (CCH-MA06-01 D&O: FOF 149.)

93. The County of Maui and WWC built the ‘Īao Tunnel (Well No. 5332-02) in 1937. (CCH-MA06-01 D&O: FOF 150.)

94. Water from the ‘Īao Tunnel is first directed to MDWS’s water treatment plant, and the remainder enters the ditch at WWC’s ‘Īao Stream diversion. (*See* CCH-MA06-01 D&O, Figure 3.) (CCH-MA06-01 D&O: FOF 151.)

95. Under an agreement between WWC and MDWS, MDWS uses 1.074 mgd, with WWC having the use of the amounts over 1.074 mgd. MDWS pays WWC a delivery fee for any amounts in excess of 1.074 mgd. (CCH-MA06-01 D&O: FOF 152.)

96. MDWS has a WUPA for 1.359 mgd, and WWC has been using between 0.25 to 0.35 mgd (*supra*, FOF 10, 12).

97. Mahi Pono has a separate ‘Īao Tunnel (Well No. 5330-02), for which it has a WUPA for 0.1 mgd. (*supra*, FOF 11,)

98. Mahi Pono's 'Īao Tunnel discharges into the Spreckels Ditch between Mahi Pono's intakes on South Waiehu Stream and Wailuku River. (CCH-MA06-01 D&O: FOF 155.)

2. Ditches

99. The distribution system from the Nā Wai 'Ehā rivers and streams included intakes, reservoirs, connectors, kuleana systems, and gauging stations. (CCH-MA06-01 D&O, Figure 5.)

100. There are two primary and two secondary systems that distribute the waters diverted from the Nā Wai 'Ehā rivers and streams. (CCH-MA06-01 D&O: FOF 156.)

101. The primary distribution systems are the WWC ditch system and the Mahi Pono reservoir/ditch system. (CCH-MA06-01 D&O: FOF 157.)

102. The secondary distribution systems are the "kuleana" ditches/pipes that either have an intake directly in a stream or that receive water from the primary systems, and the MDWS water treatment plants. (CCH-MA06-01 D&O: FOF 158.)

103. Almost all of the kuleana distribution systems receive water by delivery from ditches or reservoirs that are a part of the primary distribution systems. (CCH-MA06-01 D&O: FOF 159.)

104. These distribution systems and the end users are called "kuleana" by WWC because they have historically obtained ditch water through WWC's delivery system at no cost to the users. WWC has no documentation to determine whether these kuleana users have appurtenant or riparian rights. (CCH-MA06-01 D&O: FOF 160.)

a. The Primary Distribution Systems

105. The primary distribution systems receive river and stream waters via seven active diversions, two on Waihe'e River, one on South Waiehu Stream, two on Wailuku River, and two on Waikapū Stream. (Figure 1.)

106. Historically, there were five additional diversions, one on Waihe'e River which is presently sealed (Field 1 intake), one on North Waiehu Stream which was recently abandoned, one on Wailuku River which no longer exists (Kama Ditch), and two on Waikapū Stream (the sealed Everett Ditch and the recently abandoned Reservoir 6 Intake). (CCH-MA06-01 D&O: FOF 162; Strauch, Tr., October 14, 2016, p. 95, l. 24 to p. 96, l. 8.)

107. In addition, there were three kuleana intakes directly on the streams, one each in South Waiehu Stream, Wailuku River, and Waikapū Stream. (CCH-MA06-01 D&O: FOF 163.)

108. WWC and its predecessors used the system to divert water from the streams and deliver it to users for agricultural (crops and animals), industrial (commerce and stores), and domestic (camps, villages and towns) purposes. (CCH-MA06-01 D&O: FOF 164.)

109. The WWC distribution system included 11 registered stream diversions, 2 major ditches, 7 minor ditches, and 16 reservoirs. (CCH-MA06-01 D&O: FOF 170.)

110. In addition to sharing in the cost and maintenance of the portions of the system operated by WWC, Mahi Pono operates a diversion intake on South Waiehu Stream at the Spreckels Ditch, a diversion intake on Wailuku River at the Spreckels Ditch, and the Spreckels Ditch from Reservoir 25 to its terminus at Mahi Pono's Reservoir No. 73 (the "Waiale Reservoir"). (CCH-MA06-01 D&O: FOF 171.)

111. WWC distributes water to three major user groups: agricultural, kuleana systems, and domestic. (CCH-MA06-01 D&O: FOF 173.)

112. WWC's system is divided into northern and southern sections. (CCH-MA06-01 D&O: FOF 174.)

113. The northern sector of the system included the Waihe'e, Spreckels, North Waiehu (since abandoned), and 'Iao-Maniania ditches, which receive water from the Waihe'e River and Wailuku River. (CCH-MA06-01 D&O: FOF 175.)

114. The southern section of the system included the South Waikapū, Reservoir No. 6 (since abandoned), and 'Iao-Waikapū Ditches, which divert water from Waikapū Stream and Wailuku River. (CCH-MA06-01 D&O: FOF 176.)

115. There are two major ditches in the system: the Waihe'e and Spreckels Ditches. (CCH-MA06-01 D&O: FOF 177.)

i. Waihe'e Ditch

116. The Waihe'e Ditch begins at the Waihe'e Ditch Diversion in Waihe'e River and terminates at Reservoir 9. (CCH-MA06-01 D&O: FOF 178.)

117. The Waihe'e Ditch diversion on Waihe'e River is at approximately 620 feet elevation and consists of two concrete structures that direct stream flow over metal grates that drop water into the intake. (CCH-MA06-01 D&O: FOF 179.)

118. The Waihe'e Ditch Intake has a design capacity of 60 mgd but was set to divert 40 mgd. (CCH-MA06-01 D&O: FOF 180.)

119. There is an additional intake into the Waihe‘e Ditch at Waikapū Stream. (CCH-MA06-01 D&O: FOF 181.)

120. Water from the Waihe‘e Ditch can be transferred to the Spreckels Ditch in two places: 1) a “drop” ditch in Waihe‘e Valley located north of all reservoirs, which transfers approximately 6 mgd into the Spreckels Ditch; and 2) through the Hopoi Chute located near Wailuku River, which transfers water into the Spreckels Ditch at its terminus at Waiale Reservoir. (CCH-MA06-01 D&O: FOF 182.)

121. Water can also be added to the Waihe‘e Ditch from Wailuku River via the ‘Īao-Maniania and ‘Īao-Waikapu Ditches. (*See infra.*) (CCH-MA06-01 D&O: FOF 183.)

ii. Spreckels Ditch

122. The Spreckels Ditch starts at its intake on Waihe‘e River at 420 feet elevation (downstream from the Waihe‘e Ditch intake), crosses North Waiehu Stream, South Waiehu Stream, and Wailuku River, and terminates at the point where the Hopoi chute drops water from the Waihe‘e Ditch to Mahi Pono’s Waiale Reservoir. (CCH-MA06-01 D&O: FOF 184.)

123. The Spreckels Ditch intake at Waihe‘e River has a design capacity of 30 mgd, but the gate was typically set at 12 mgd. The intake is controlled by WWC. (CCH-MA06-01 D&O: FOF 185.)

124. The Spreckels Ditch also has intakes at South Waiehu Stream and Wailuku River, which are controlled by Mahi Pono. (CCH-MA06-01 D&O: FOF 186.)

125. Mahi Pono’s intakes are not metered, but Mahi Pono estimated that the intake on South Waiehu Stream ranged from a low of 2-3 mgd during dry periods to a maximum of 10-15 mgd during wet periods. There is also a kuleana intake via a pipe that takes water from the ditch that connects the diversion to Spreckels Ditch, which Mahi Pono estimated takes approximately 0.25 mgd. (CCH-MA06-01 D&O: FOF 187.)

126. The intake on Wailuku River is also not metered, but Mahi Pono estimated that the amount diverted ranged from a low of 3-4 mgd during dry periods to a high of about 20 mgd during wet periods. (CCH-MA06-01 D&O: FOF 188.)

127. Mahi Pono’s ‘Īao Tunnel (Well No. 5330-02), for which it has a WUPA for 0.1 mgd (*supra*, FOF 11), enters the Spreckels Ditch between the intakes from South Waiehu Stream and Wailuku River. (CCH-MA06-01 D&O: FOF 189.)

128. Mahi Pono measures the aggregate water flow in the Spreckels Ditch at its Wailuku gauging station located downstream of the South Waiehu Diversion, the intake pipe from Mahi Pono 'Īao Tunnel, and the Wailuku River intake, none of which is separately gauged. In addition to these three sources, the gauged amount includes water diverted by WWC from Waihe'e River via two ditches: 1) the Waihe'e Ditch via the drop ditch to Spreckels Ditch; and 2) the Spreckels Ditch, downstream from the Waihe'e Ditch diversion. (CCH-MA06-01 D&O: FOF 190.)

129. As described under the Waihe'e Ditch, water can be transferred from the Waihe'e Ditch to the Spreckels Ditch through a drop ditch and the Hopoi Chute (*supra*, FOF 120).

130. WWC controls the Spreckels Ditch from its intake on Waihe'e River to Mahi Pono's intake at South Waiehu Stream, and Mahi Pono controls the Ditch from South Waiehu Stream to its terminus at Waiale Reservoir (*supra*, FOF 110). (CCH-MA06-01 D&O: FOF 192.)

iii. 'Īao Ditch

131. The 'Īao Ditch starts with an intake at Wailuku River, which has a capacity of 60 mgd, but a control gate in the Ditch after the intake was set to divert at most 20 mgd. (CCH-MA06-01 D&O: FOF 195.)

132. Separate gates control the amount of water that is diverted north to the 'Īao-Maniania Ditch or south to the 'Īao-Waikapū Ditch. Any water beyond the gate settings for the 'Īao-Maniania and the 'Īao-Waikapū ditches was returned to Wailuku River about 1000 feet below the intake. The settings for this control gate varied according to needs and were changed as often as weekly. Mahi Pono gave WWC a weekly plan of their irrigation needs by day and reservoirs so that WWC could adjust the control gate accordingly. (CCH-MA06-01 D&O: FOF 196.)

133. The 'Īao-Maniania Ditch is an unlined ditch of about 2.07 miles in length. It has a rated capacity of 30 mgd, but its control gate was set to receive 2 mgd of flow from the main 'Īao Ditch. The 'Īao-Maniania Ditch can deliver water back north and deposit water back into the Waihe'e Ditch. (CCH-MA06-01 D&O: FOF 197.)

134. The 'Īao-Waikapū Ditch is approximately 70 to 80 percent lined and is 2.95 miles in length. It has a rated capacity of 30 mgd, but its control gate was set to receive 18 mgd of flow from the main 'Īao Ditch. The 'Īao-Waikapū ditch can send water south to service the Waikapū region and the area from 'Īao Valley Road back to the south. Any water remaining in

the ʻĪao-Waikapū Ditch was put into the Waiheʻe Ditch downstream of the Hopoi Chute. (CCH-MA06-01 D&O: FOF 198.)

iv. Waikapū Ditch

135. The Waikapū Ditch is located off of the top intake on Waikapū Stream (the other intake on Waikapū Stream is at the Waiheʻe Ditch (*supra*, FOF 119)). The intake to the ditch has a rated capacity of 5 mgd, but the control gate was set at 3 mgd. The ditch delivered water to Reservoir No. 1. (CCH-MA06-01 D&O: FOF 199.)

v. Inactive Ditches

136. The North Waiehu Ditch was inactivated after the Commission's 2010 Decision and Order. (2014 Mediated Agreement, Exh. 1, p. 26.) It had a capacity of 5 mgd, the control gate had been set at 1.5 mgd, and it diverted water to the north and could drop water into the Waiheʻe Ditch. (CCH-MA06-01 D&O: FOF 193-194.)

137. The recently abandoned Reservoir No. 6 Ditch delivered water from the lowest Waikapū Stream intake back north to Reservoir No. 6, located just below Honoapiilani Highway. (CCH-MA06-01 D&O: FOF 200.)

138. The Kama Ditch, Everett Ditch, and Field One Intake are inactive. (CCH-MA06-01 D&O: FOF 201.)

b. The Kuleana Systems

139. Before the 1980s, delivery of water to most kuleana systems only occurred during periods when water was delivered for agricultural operations through the ditches and reservoirs to which the kuleana systems were connected. (CCH-MA06-01 D&O: FOF 214.)

140. In the 1980s, as WWC shifted from furrow irrigation to drip irrigation, WWC changed its delivery system by installing pipes to replace ditches, which made deliveries more reliable and consistent. (CCH-MA06-01 D&O: FOF 215.)

141. During plantation operations, HC&S and WWC frequently provided the maintenance of the kuleana systems when their workers maintained the ditch systems used to provide irrigation for agricultural operations. (CCH-MA06-01 D&O: FOF 216.)

142. After the installation of drip irrigation in the 1980s, users of the kuleana systems which received water through the WWC distribution system were expected to maintain their own systems. (CCH-MA06-01 D&O: FOF 217.)

143. WWC's practice since that time has been and remains that it will maintain its ditches to the point of delivery of water into the kuleana ditch or pipe system. (CCH-MA06-01 D&O: FOF 218.)

144. Maintenance of the kuleana ditches and pipes by the present users has been inconsistent, with some users maintaining limited portions of some of the systems and other systems receiving no maintenance from the users. (CCH-MA06-01 D&O: FOF 219.)

145. Figure 1 identifies the kuleana ditch/pipe systems, most of which are connected to one of the primary distribution systems, and water diverted directly from the rivers and streams. (CCH-MA06-01 D&O, Figure 1.)

c. Monitoring

146. The primary intakes of the Waihe'e, Spreckels, 'Āao-Maniania, and 'Āao-Waikapū ditches had 24-hour gauging stations to measure the ditch flow. In addition, ditch flows at other stations along the ditches operated by WWC were read and recorded daily. (CCH-MA06-01 D&O: FOF 204.)

147. The waters that enter the distribution system travel by gravity flow into reservoirs that in turn deliver the water into smaller ditches for end use. Because the flows of the streams vary daily, reservoirs were made a part of the system to allow for a more constant delivery of water to end users. WWC built and maintains 16 reservoirs that were designed to hold about 79 million gallons, but due to siltation, the reservoirs have a current capacity between 55 and 60 million gallons. Each reservoir has a water meter to measure the flow from the reservoir. (CCH-MA06-01 D&O: FOF 205-207.)

148. Some of the kuleana ditches/pipes that receive water through the WWC distribution system are metered. (CCH-MA06-01 D&O: FOF 222-223, 226, Tables 3-6.)

149. WWC does not measure water delivered to, or collect data on, individual users of the kuleana systems. (CCH-MA06-01 D&O: FOF 228.)

D. Appurtenant Rights in Nā Wai 'Ehā

1. Water Use on Kuleana Awards at the Time of the Māhele

a. Acres Irrigated at the Time of the Māhele

150. Lilikalā Kame'eleihiwa was recognized as an expert in Native Hawaiian history and culture, and specifically on the Māhele and Māhele records. (Tr., 7/11/2016, p. 38, ll. 9-15.)

151. The Māhele resulted in the recognition of three types of conveyances: 1) konohiki awards, life estates that could be converted to fee-simple if the konohiki paid a commutation of one-third of the value of the land or one-third of the land itself; 2) government grants, awarded mostly to foreigners based on oral land claims, which could be sold in fee-simple; and 3) kuleana awards (fee-simple). (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶¶ 8, 17.)

152. Lands over which the King retained personal control became known as the crown lands. Some of these lands were given to the Hawaiian Kingdom Government, and these lands are known as government lands. Lands the konohiki paid as a commutation also became part of the government lands. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 10.)

153. Government lands could be sold in fee-simple, and there was no requirement that these lands be in cultivation. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 16.)

154. Lilikalā Kame‘eleihiwa has not studied government grants at all. (Lilikalā Kame‘eleihiwa Tr., 7/11/2016, p. 85, 1-4.)

155. Kuleana lands were awards to hoā‘āina (native tenants) for any lands located on crown, government or konohiki land which the hoā‘āina had improved with a house lot and/or were actually cultivating. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 11.)

156. There were 14,000 kuleana claims made throughout the islands, and 8,400 that were actually awarded. Eight hundred, or about one-tenth, were awarded in Nā Wai ‘Ehā, which was the largest contiguous area of kalo cultivation in Hawai‘i. (Lilikalā Kame‘eleihiwa, Tr., 7/11/2016, p. 46, ll. 6-9, p. 65, ll. 11-16, and p. 103, ll. 8-15.)

157. Hoā‘āina were entitled only to the amount of land they were actually cultivating, and the amount of land that could be awarded for a house lot (“pāhale”) was limited to one-quarter of an acre. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶¶ 13-14.)

158. “There is no way to determine the precise area of cultivation, and, accordingly, water use, based on Māhele documents. Most Māhele records, however, particularly those pertaining to kuleana, contain a description of the crops in cultivation on a specific ‘āpana (parcel). Knowing the purposes of key Māhele records associated with kuleana awards, as well as the parcel descriptors commonly utilized in these records, helps to identify what was being cultivated on the land in question, and to achieve reasonable estimates of the areas in cultivation.” (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶¶ 21-22.)

159. Māhele records sometimes provide the number of lo‘i being cultivated on a kuleana or ‘āpana, but generally do not specify the size of the lo‘i. Without knowing the size of the lo‘i, which can vary among kuleana, it is Kame‘eleihiwa’s opinion that the number of lo‘i is not a useful guide for estimating the acres in cultivation, but it is useful to indicate the existence and general extent of wetland kalo cultivation within a kuleana or ‘āpana. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 27.)

160. Lilikalā Kame‘eleihiwa developed the following rebuttable presumptions and guiding principles for kuleana awards. They have nothing to do with government grants. (Lilikalā Kame‘eleihiwa, Tr., 7/11/2016, p. 84, ll. 9-25.)

161. Presumption #1:

If no pāhale (house lot) is mentioned in a kuleana award, the entire kuleana should be presumed to be in cultivation, because kuleana awards were restricted to lands ho‘ā‘āina were actually cultivating or living on at the time. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 40.)

162. Presumption #2:

If a pāhale is referenced in the kuleana award, but no size of the pāhale is provided, the area for the pāhale should be presumed to be no more than one-quarter of an acre, based on the limit for house lots to one-quarter of an acre in the Kuleana Act. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 41.)

163. Presumption #3:

If the following descriptors are used to describe kuleana or an ‘āpana with a kuleana, without referencing any other crop or pāhale, the entire parcel should be presumed to be cultivated in lo‘i kalo:⁸

- a. Kalo
- b. Loi
- c. Loi kalo
- d. Pauku kalo
- e. Pauku loi

⁸ The following terms are spelled the way in which they are usually recorded in the original documents, without modern-day diacritical marks.

- f. Moo kalo
- g. Poalima
- h. Loi aupuni
- i. Loi paahao
- j. Aina kalo

(Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 42.)

164. Presumption #4:

All pō‘alima (lands farmed by hoā‘āina for the ali‘i or konohiki) should be presumed to be cultivated in lo‘i kalo.⁹ (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 43.)

165. Presumption #5:

Where Māhele records for a particular kuleana do not specify the crop being farmed on the land or the presence of a house lot, if the kuleana includes, abuts, or is near to a stream, ‘auwai, or other lands for which lo‘i kalo documentation exists, such as a pō‘alima, it should be presumed that wetland kalo was being cultivated on that kuleana. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 44.)

166. Guiding principle #1:

Where Māhele records are ambiguous in describing the land use for an ‘āpana (i.e., multiple uses are described without providing the location and size for each use (e.g., kula and lo‘i), or the land use description covers more than one ‘āpana), the land use for neighboring ‘āpana can serve as a guide. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 45.)

167. Guiding principle #2:

In some instances, existing cultural land features can help to determine the location and size of the lo‘i on a kuleana or ‘āpana. For example, remnants of lo‘i walls and terraces still exist on some kuleana in Nā Wai ‘Ehā. These land features provide evidence of the location and size of lo‘i, and, accordingly, an estimate of water use at the time of the Māhele. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 46.)

168. Guiding principle #3:

⁹ “That’s the land that’s being worked for the ali‘i of the konohiki. Why would you want the lo‘i kalo? Because that’s the highest and best use of the land in lo‘i kalo, and you can make ten to 15 times more food per acre...(I)f the ali‘i had somebody working for them, and the konohiki had somebody working with them on a piece of land, why would they plant anything else except lo‘i kalo?” (Lilikalā Kame‘eleihiwa, Tr., July 11, 2016, p. 46, l. 25 to p. 47, l. 8.)

If the Māhele records for surrounding kuleana and the subject kuleana’s current land features are not helpful, there is likely no way to arrive at a reasonably accurate water use quantification for that parcel. In these instances, an equal distribution of land among the noted land uses may be the only justifiable compromise. For example, if the parcel is described as “lo‘i and kula,” fifty percent of the land should be attributed to lo‘i and the other fifty percent should be attributed to kula. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶ 47.)

169. It cannot be automatically presumed that the land is in kalo cultivation if there is any mention of kalo in the Māhele records. One needs to go through the assumptions and principles before reaching any conclusion. (Lilikalā Kame‘eleihiwa, Tr., 7/11/2016, p. 57, l. 4 – p. 58, l. 5.)

170. For the one-quarter acre assigned to a house lot, it is likely that the land was planted with such crops as sweet potatoes and bananas, because a quarter acre is big for a house. But it is hard to say that there would be some quantification of water. In the old days, generally you would wait for rain to fall from the sky. So Kame‘eleihiwa cannot speak for water for the pāhale. (Lilikalā Kame‘eleihiwa, Tr., 7/11/2016, p. 69, l. 2 – p. 70, l. 8.)

171. The term “kula” generally refers to unirrigated pasture or plains. The Māhele records for Nā Wai ‘Ehā, however, also use this term to refer to dryland agricultural crops. Use of this descriptor in Nā Wai ‘Ehā is sparse, compared to records for other regions throughout Hawai‘i. (Lilikalā Kame‘eleihiwa, WT, February 2, 2016, ¶¶ 36-37.)

b. Use of Water for Kalo Lo‘i at the Time of the Māhele

172. Paul Reppun was recognized as an expert in the cultivation of kalo, specializing in the water needs of kalo, based on 42 years of growing taro and knowing all the major taro growing areas fairly well. (Tr., July 11, 2016, p. 107, ll. 8-22, p. 109, ll. 21-24.) He does not have any publications on taro cultivation other than his testimonies. (Paul Reppun, Tr., July 11, 2016, p. 114, l. 25 to p. 115, l. 7.)

173. As part of his testimony in this Contested Case, Reppun introduced Exhibit OHA-1, his September 9, 2007, testimony in a previous contested case (*supra*, FOF 6-9). In that 2007 testimony, Reppun referred to a 1980 report on “Prehistoric Irrigation Hydrology of Pondfield Taro” and stated that “(t)he researchers used a different method to determine water use in ancient times: they analyzed the dimensions of the ‘auwai systems in Halawa Valley, on Moloka‘i, and in the South Pacific. Based on the size and slope of the ‘auwai, they determined the amount of

water it could safely carry. Their approach of correlating the acreage of taro land with the capacity of the ‘auwai led them to estimate that 85% to 90% of the ‘auwai flow was used as throughflow to cool the taro.” Reppun states that by their calculations and using 30,000 gallons per acre per day (“gad”) as the amount lost to consumption, the average inflow would be 30,000 gad divided by 15% to 10%, or 300,000 gad to 200,000 gad, somewhat higher than what Reppun maintains is needed to grow taro today—100,000 gad to 300,000 gad (*infra*, FOF 178). (Exh. OHA-1, ¶¶ 37-38.)

174. Reppun did not enter the 1980 report into evidence, so it is not clear which statements come from the report, and which are supplemental comments by Reppun. According to Reppun, the authors determined the amount of water the ‘auwai could safely carry based on the size and slope of the ‘auwai, and that by correlating the acreage of taro land with the capacity of the ‘auwai, they estimated that 85% to 90% of inflow exited as outflow. Reppun then speculates what the inflows would have been, based on assuming 30,000 gad in consumptive losses (*supra*, FOF 173).

175. In stark contrast to his 2007 testimony, which Reppun introduced in the current contested case as his written testimony, Reppun stated in his oral testimony that “how much water taro needed at the time of the Māhele is almost an irrelevant question... We need more today than before to some degree.” (Paul Reppun, Tr., July 11, 2016, p. 113, ll. 6-22.)

176. “I think conditions for growing taro are different now than they were in ancient times... We have far more weeds than we used to have before. Even during my short period of time growing taro, we have had numerous different weeds come in, some of them really, really noxious weeds. I think ancient Hawaiians had a very benign set of weeds. So controlling the amount of water wasn’t as important, because when your lo‘i go dry, that’s when weeds germinate. So now we have a situation where if we let lo‘i go dry and those weeds germinate, we suffer enormously. We have had crops where we have to weed every couple of weeks.” (Paul Reppun, Tr., July 11, 2016, p. 110, ll. 7-22.)

177. “The other thing is our climate is changing... something like ten percent drop in precipitation, which adds up to an enormous quantity of water. So the water in streams is declining naturally. As the flow of the streams declines, the temperature goes up a little bit. So our needs for flowing water is little bit higher than it used to be... So it might be, as time goes on, we experience more severe effects of climate change, global warming, that kind of thing. Our

streams decline further, water temperatures go up, air temperatures going to go up, soil temperatures going go up, and going to need to have more water to grow taro.” (Paul Reppun, Tr., July 11, 2016, p. 111, ll. 2-20.)

2. Current Water Needs for Kalo Lo‘i

178. Reppun estimates that “wetland taro needs between 100,000 to 300,000 gallons per acre (per day) (gad) of ‘new’ water, which is water that can still serve the essential function of maintaining temperatures low enough to prevent crop failure due to rot and pests, and which has not been rendered useless for this cooling function by previous use in upstream lo‘i. In the warmer months of the year, and under a normal production system using lo‘i complexes without excess fallowed land, the higher figure should be used.” (Exh. OHA-1, ¶ 4.) The lower end would apply, for example, if a farmer had only two lo‘i and kept one fallow. (Paul Reppun, Tr., December 3, 2007, p. 114, l. 21 to p. 115, l. 9.) (Hui/MTF and OHA: FOF B-45.)

179. Reppun bases his estimate “on my experience of my own lo‘i, and also based on my experience with talking to numerous other farmers in other places and trying to get a sense of what amount of water they’re using. I have a pretty good sense of being able to look at water and tell you what the quantity is. So if I go to visit a farmer in Keanae, look at his water, look at (his) taro crop, I’ve a pretty good idea if he’s using more water or not. If I can get him to tell me if he’s having trouble with rot, I can correlate that to what I know and what I learned from other farmers through quantity of water. So that’s—I’m not doing this in a scientific way, but I’m applying all my experiences to it and that of all the farmers I run into. I’m always trying to refine that idea...So all these different things are feeding into my estimation of what taro needs.” (Paul Reppun, Tr., July 11, 2016, p. 134, l. 10 to p. 136, l.10.)

180. “I’ve seen farmers get away with less water than what I’m saying they need, but generally I can find that there’s a reason for that. And it might be that they don’t grow taro as intensively as a local farmer might. I think if a farmer doesn’t grow taro, you know, plant taro on his land, he rests his field ideally. Some farmers can’t afford (to) do that, and some of them think they can. Some of them think they have to be continuously planting because income is not high enough where they can afford to rest. It’s my opinion that if you rest your fields, you can grow better taro, better income, better quality taro. But some farmers who sell to large poi factories are not particularly concerned about the quality of their taro, because they are not eating it, not making poi out of it themselves. The poi factory isn’t complaining to them because of feedback

to operation. I've been making poi for as long as I have been growing taro, I founded the first ever machine, and it takes us long time so for us. So for my brother and I as farmers, we are continuously being educated about the quality of our taro because we make poi out of it every other week or so. So if taro is not very good quality, our yield of poi is less. In other words, if we take 100 pounds of taro, make poi out of it(,) come(,) out 90 pounds of poi. And because our poi is thick, we don't add a lot of water to it, we have good yield of taro. If it comes out 60 pounds of poi, the taro is going to be loli, not very good quality. So all these different things are feeding into my estimation of what taro needs." (Paul Reppun, Tr., July 11, 2016, p. 135, l. 1 to p. 136, l. 10.)

181. "A complex of lo'i has taro at different phases. If you have a field that's fallow, obviously it requires no water. If you have a field just planted, it require(s) just a thin skin of water. If you have one that is in full vegetative state, might require not very much water, because very good leaf coverage and stays cool. If you have one that's maturing, shrinking down, then it's going to require a further increase in water again." (Paul Reppun, Tr., July 11, 2016, p. 117, ll. 16-24.) "(T)he figure of 100,000 to 300,000 gad takes into account the various factors affecting water needs of taro. It incorporates both periods of less water use, and periods of peak water use, when water availability can make or break a crop. A complex of lo'i at a good level of production in the summer would need a minimum close to 300,000 gad. If the complex were on the leeward side, it might need that year round." (Exh. OHA-1, ¶ 25.)

182. Nā Wai 'Ehā is on the windward side of Maui. (Exh. OHA-3, p. 43.)

183. Reppun is of the opinion that "(i)n Nā Wai 'Ehā I would say any of the lo'i there on the lower half of the complex are going to need towards the high end of that figure, and then closer to the mountain, it's going to need less." (Paul Reppun, Tr., July 11, 2016, p. 136, l. 24 to p. 137, l. 3.)

184. A complex of lo'i has taro at different phases: fallow, just planted, full vegetative state, and maturing. (Paul Reppun, Tr., July 11, 2016, p. 117, ll. 16-24.)

185. "The water duty for taro must incorporate a range of amounts that recognize periods of less water use and also accommodates periods of peak demand, when the full amount of water is critical to ensure the success and survival of the crop." (Exh. OHA-1, ¶ 13.)

186. "The period from planting to harvest spans an average of about 14 to 15 months." (Exh. OHA-1, ¶ 15.)

187. In the initial planting stage, the lo'i are flooded and planted, then just enough water is applied to keep the soil covered, and about a month later the flow of water is started. (Paul Reppun, Tr., July 11, 2016, p. 149, ll. 6-12.)

188. Most taro farmers fertilize their crop usually once every one or two months for the first eight to ten months, depending on the variety of taro. With chemical fertilizers, the inflow of water is stopped, leaving the water about two inches deep to dissolve the fertilizer, then leaving the water to sit in the lo'i until it subsides into the soil. Then about a week later, the lo'i is flooded, and about another week later after the water has subsided into the soil, water is run through again. So for fertilizing, there might be a two-week period out of every month to two months during the eight to ten months when fertilizer is applied, where water would not be needed except for a one-time flooding. (Exh. OHA-1, ¶ 17; Paul Reppun, Tr., July 11, 2016, p. 148, l. 11 to p. 149, l. 5.)

189. For the organic method, dry organic material, such as limu, sulphate of potash, and tree trimmings, is put in the soil and left to rot down. (Reppun did not state how long this would take.) Two to three weeks before planting, fish meat bonemeal is added, and no more fertilizing is done for the life of the crop. (Paul Reppun, Tr., July 11, 2106, p. 147, l. 8 to p. 149, l. 11.)

190. "When your lo'i go dry, that's when weeds germinate... We have had crops where we have to weed every couple of weeks." (Paul Reppun, Tr., July 11, 2016, p. 110, ll. 16-21.) How long it takes to weed varies a lot. (Paul Reppun, Tr., July 11, 2016, p. 149, l. 24 to p. 150, l. 8.) When weeding is needed, the inflow and outflow of water are stopped to prevent muddy water to run out of the lo'i to minimize soil loss. (Exh. OHA-1, ¶ 19.)

191. Reppun states in his current testimony that "I have never observed it to be a general rule or assumption that no water is needed to flow into taro lo'i fifty percent of the time, or 'half the crop cycle.' Nor have I observed a common practice among taro farmers to allow water to flow through their lo'i only fifty percent of the time...(T)he typical practice of taro farmers is to shut the inflow to the lo'i only when applying fertilizer or performing tasks that would stir up mud and cause muddy water to run out of the lo'i. Although flow requirements of taro may vary depending on the stage in the crop cycle, weather, and other conditions, taro requires flowing water throughout the 14-15 month period from planting to harvest." (Paul Reppun, WT, February 5, 2016, ¶ 5.)

192. From Reppun's own testimony, flowing water is not required for a month after planting and for 2 to 5 months when fertilizing,¹⁰ plus additional time when weeding is required (*supra*, FOF 188-190).

a. Water Temperature and Taro Rot

193. When water reaches 77° F, taro rot begins to accelerate and spread. In more recent years, apple snails have also become a problem, because they thrive in lo'i and feed on the taro. Cooler water helps to control the snails by slowing down their metabolism and reproductive cycle. (Exh. OHA-1, ¶¶ 5-6.)

194. In Reppun's opinion, 80° F is more critical. The rate of acceleration depends on the "farmer's practices and the history of that field. If that field previously had a lot of rot in it, then rot is going to be more of a problem in subsequent crops. So if you have a field that has been really clean and hasn't had a problem in the past, the chance of rot starting to accelerate at 77 degrees is very small. It may start to accelerate at 82 degrees." (Paul Reppun, Tr., July 11, 2016, p. 130, ll. 8-19.)

195. "The farmers' primary means of maintaining the necessary cool temperatures is in adequate 'throughflow.' Throughflow is water that flows through the lo'i and carries heat away. Throughflow is distinct from water that is 'consumed.' Consumed water is water that is lost to percolation through the soil..." (Exh. OHA-1, ¶ 7.)

196. Reppun estimates that the difference between inflow and outflow, or losses from evaporation, seepage and transpiration, vary quite a bit but generally is in the neighborhood of ten percent and is generally higher than lower than ten percent (see also FOF 174, *supra*). (Paul Reppun, Tr., July 11, 2016, p. 122, l. 24 to p. 123, l. 8; p. 129, ll. 5-8.)

197. "There are a number of practices that you can use (to) try and keep rot from becoming a problem. One is fallowing your field. One is growing something like grass or sorghum that has extensive root system(s) that actually uses cyanide (that) can help to kill organisms. You can also change varieties of taro." (Paul Reppun, Tr., July 11, 2016, p. 131, ll. 9-15.)

¹⁰ From a minimum of two weeks every two months for eight months, or two weeks x 4 = 8 weeks, or two months; to a maximum of two weeks every month for ten months, or two weeks x 10 = 20 weeks, or five months.

198. Reppun doesn't know how long water has to be at 77 or 80 degrees before rot begins, nor whether it has to be continuous or only intermittent, but if you encounter high temperatures, there's a reason for it, and that reason tends to persist. If it persists over a period of time, you start to see soil temperatures go up, which will go well past the hottest part of the day and into the night. (Paul Reppun, Tr., July 11, 2016, p. 131, l. 16 to p. 132, l. 15.)

b. The 2007 USGS Survey

199. Reppun participated in and included in his prepared testimony a 2007 United States Geological Survey ("USGS") on "Water Use in Wetland Kalo Cultivation in Hawai'i," which was a survey of water use over a two-month period (7/29/2006 – 9/22/2006). (Exh. OHA-3; Paul Reppun, Tr., July 11, 2016, p. 125, ll. 9-12.)

200. The survey measured the amount of water that flowed in and out of lo'i complexes and the temperatures of the water, but it did not address crop yields nor the effects of water temperature on crop yields. (Reppun, Tr., July 11, 2016, p. 128, ll. 10-12.)

201. To ensure that flow and temperature data collected at different lo'i complexes reflected similar irrigation conditions, only lo'i with crops near the harvesting stage, with continuous flooding of the mature crop, were selected for water-temperature data collection. Farmers generally allocate a greater amount of water to lo'i with crops at harvesting stage and less water to lo'i with crops at earlier stages to maximize the use of limited water resources. (Exh. OHA-3, p. 3.)

202. Data were collected during the dry season (June-October), when water requirements for cooling kalo approach upper limits, and were collected on commercial kalo farms, because commercial farmers "maximize their production by the very nature of being commercial." (Exh. OHA-3, p. 1.), (Paul Reppun, Tr., December 3, 2007, p. 128, ll. 20-23.) (Hui/MTF and OHA: FOF B-50.)

203. Flow measurements were taken only twice, at the beginning and at the end of the two-month study period and generally made during the warmest part of the day. Temperature measurements were made every fifteen minutes for the two-month period. (Exh. OHA-3, p. 1.)

204. Seventeen windward and two leeward lo'i complexes were studied on Kaua'i, O'ahu, Maui, and Hawai'i. The average inflow value for the 17 windward lo'i complexes was 270,000 gad, and the median inflow value was 150,000 gad. The average inflow value for five

individual windward lo'i was 370,000 gad, and the median inflow value was 320,000 gad. (Exh. OHA-3, p. 1.)

205. A total of 62 flow measurements and 46 sets of temperature data were made across all sites. The Maui sites were reported to have taken flow measurements on July 29-31, 2006, when the temperature loggers were deployed, and September 21-22, 2006, when the temperature loggers were removed. (Exh. OHA-3, pp. 6, 43-47.)

206. A lo'i complex at Waihe'e was one of the complexes chosen on Maui. Flow measurements were reported for the Waihe'e lo'i complexes for 7/29/2006 and 9/22/2006, while temperature measurements were reported for the period 7/29/2006 -9/22/2006. (Exh. OHA-3, pp. 43-45.)

207. The Waihe'e lo'i complex of 2.30 acres was considered to be two complexes, an upper complex of 1.54 acres with 33 lo'i, and a lower complex of 0.76 acres, with 23 lo'i. The water source is the Waihe'e River through an 'auwai supplied by the Spreckel's Ditch. Water enters the upper portion through a single intake and exits through two 'auwai into the lower portion, where it exits through a single outtake. (Exh. OHA-3, p. 43 and p.46, figure 23.)

208. On 7/29/2006, inflow from the 'auwai into the upper complex of 1.54 acres was measured at 340,000 gallons, and on 9/22/2006, at 300,000 gallons, or 221,000 gad and 195,000 gad, respectively.¹¹

209. Combined inflow through the two 'auwai from the upper to lower complexes were measured at 85,000 gallons on 7/29/2006, and at 125,000 gallons on 9/22/2006, or 112,000 gad and 164,000 gad, respectively for the lower 0.76 acres.¹² (Exh. OHA-3, p. 44, table 6.)

210. Therefore, for those two days, losses in the upper complex of 1.54 acres were 255,000 gallons (340,000 – 85,000) or 166,000 gad, and 175,000 gallons (300,000 – 125,000), or 114,000 gad, respectively. These losses represent 75 percent (166,000/221,000) and 58 percent

¹¹ For unexplained reasons, the study reported this flow by dividing the inflow into the 1.54 acres by the combined 2.3 acres, which resulted in 150,000 gad and 130,000 gad, for the respective dates. (Exh. OHA-3, p. 44, table 6.) But as described next, lesser amounts of water reached the lower 0.76 acres because of significant leakage in the upper complex, and the study reported these amounts as reaching the lower complex of 0.76 acres.

¹² The study reported these numbers as 110,000 gad and 160,000 gad, but applying the flows as reported, the specific flows would be slightly more, or 112,000 gad and 164,000 gad, respectively. (Exh. OHA-3, p. 44, table 6.)

(114,000/195,000) of inflows into the upper complex, respectively, far in excess of Reppun's estimate that losses are in the range of 10 percent (*supra*, FOF 196).

211. Because of such large losses in the upper complex, the lower 0.76-acre complex received only 112,000 gad and 164,000 gad, while the upper complex of 1.54 acres was receiving 221,000 gad and 195,000 gad, respectively (*supra*, FOF 208-209).

212. No measurements were taken at the outlet from the lower complex, so losses in the lower complex are not known. (Exh. OHA-3, p. 44, table 6.)

213. Temperature measurements were taken on a continual 15-minute basis between 7/29/2006 and 9/22/2006 in the 'auwai feeding the upper complex, in one of the two outlets from the upper to the lower complex, and in the outlet from the lower complex. (Exh. OHA-3, p. 45, table 7, and pp. 46-48, figures 23-25.)

214. In the 'auwai feeding the upper complex, no readings exceeded 27°C (80.6°F),¹³ with water temperatures ranging from 19.9 – 24.0°C (67.8°F – 75.2°F) and daily peak temperatures occurring between 10:15 and 18:45. (Exh. OHA-3, p. 45, table 7.)

215. In the 'auwai from the upper to the lower complex, 25.4 percent of readings exceeded 27°C, with temperatures ranging from 20.3 – 34.0°C (68.5°F – 93.2°F) and daily peak temperatures occurring between 11:30 and 16:15. (Exh. OHA-3, p. 45, table 7.)

216. In the 'auwai exiting the lower complex, 27.0 percent of readings exceeded 27°C, with temperatures ranging from 20.0 – 35.5°C (68.0°F – 95.9°F) and daily peak temperatures occurring between 11:15 and 16:45. (Exh. OHA-3, p. 45, table 7.)

217. There were no daily readings where the temperature exceeded 27°C for 24 hours. For the outflow from the upper complex into the lower complex, there were no readings exceeding 27°C prior to about 10:00 and after about 19:00. For the outflow from the lower complex, there were no readings exceeding 27°C prior to between 9:00 and 10:00 and after about 22:00. (Exh. OHA-3, p. 48, figure 25.)

218. Because flow measurements were only taken twice during the two-month period—at the installation and removal of the temperature gauges—there is no information: a) to correlate inflow rates with outflow temperatures; and/or b) to conclude whether the loss rates in the upper complex of 58 and 75 percent (*supra*, FOF 210) were typical losses. Furthermore, no

¹³ Using the formula: $F = 9/5C + 32$.

data were collected on outflow from the lower complex, so its loss rates, even for only the two measurement periods, are unknown.

219. Outflow temperatures are partially dependent on inflow temperatures, but the only inflow measurements were done in the ‘auwai immediately prior to the intake into the upper complex. No measurements were made in the Spreckel’s Ditch, nor in Waihe‘e River at the Spreckels Ditch, which would have provided information on the extent of warming of the water as it was conveyed from the River, through the Spreckel’s Ditch, and through the ‘auwai. (Exh. OHA-3, p. 45, table 7, and pp. 46-48, figures 23-25.)

220. Finally, 25.4 percent of the water entering the lower complex from the upper complex already exceeded 27°C, but this increased only to 27.0 percent after passing through the lower complex, with maximum temperatures increasing from 93.2°F to 95.9°F (*supra*, FOF 215-216), even though the flow rate in the lower complex decreased significantly from the inflow into the upper complex, from 221,000 gad to 112,000 gad and 195,000 gad to 164,000 gad during the period of the two measurements (*supra*, FOF 208-209).

E. Instream Uses

221. “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:

- a. Maintenance of fish and wildlife habitats;
- b. Outdoor recreational activities;
- c. Maintenance of ecosystems such as estuaries, wetlands, and stream vegetation;
- d. Aesthetic values such as waterfalls and scenic waterways;
- e. Navigation;
- f. Instream hydropower generation;
- g. Maintenance of water quality;
- h. The conveyance of irrigation and domestic water supplies to downstream points of diversion; and
- i. The protection of traditional and customary Hawaiian rights.

(HRS § 174C-3.)

222. Out of the 376 perennial streams it identified in Hawai'i, the Commission has designated only 44 streams statewide as "Candidate Streams for Protection." Each of the Nā Wai 'Ehā streams earned this designation among only nine streams selected from the entire island of Maui. The Commission also designated the Nā Wai 'Ehā streams as "Blue Ribbon Resources," meaning that they featured the "few very best resources" in their respective resource areas. (CCH-MA06-01 D&O: FOF 63.)

1. Maintenance of Fish and Wildlife Habitats

a. Hawaiian Streams' Amphidromous Fauna

223. The term "amphidromous" describes fishes that undergo regular, obligatory migration between freshwaters and the sea at some stage in their life cycle other than the breeding period. All 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 marine environment, the larvae undergo development as zooplankton before returning to fresh water to grow to maturity. An important ecological characteristic of the amphidromous fauna is the ability to move upstream, surmounting riffles and small falls, and for some species, even very high waterfalls. (CCH-MA06-01 D&O: FOF 65.)

224. The life history of amphidromous stream macrofauna can be divided into three phases: 1) recruitment into the stream; 2) adult population biology and instream habitat use; and 3) reproductive output. All of these must be operative for a population in a particular stream to be considered successful. (CCH-MA06-01 D&O: FOF 66.)

225. The native amphidromous fauna of Hawaiian streams consists of five species of goboid fishes: *Awaous guamensis* ('o'opu nākea), *Sicyopterus stimpsoni* ('o'opu nōpili), *Lentipes concolor* ('o'opu alamo'o), *Stenogobius hawaiiensis* ('o'opu naniha), and the eleotrid *Eleotris sandwicensis* ('o'opu akupa). Native amphidromous invertebrates include two gastropods, *Neritina granosa* (hihiwai) and the estuarine *Neritina vespertina* (hapawai); and the decapods, *Atyoida bisulcata* ('opae kala'ole) and *Macrobrachium grandimanus* ('opae 'oeha'a). (CCH-MA06-01 D&O: FOF 64.)

226. The five native Hawaiian amphidromous species have no distinct breeding season. (CCH-MA06-01 D&O: FOF 67.)

**b. Factors Affecting the Biological and Ecological Integrity of
Hawaiian Streams' Amphidromous Fauna**

227. An overriding factor impairing the biological and ecological integrity of diverted Central Maui streams, compared to their non-diverted counterparts, is the disruption of natural flow via large-scale offstream diversions. (CCH-MA06-01 D&O: FOF 68.)

228. Diversions of streamflow harm stream life by degrading or destroying habitat, diminishing food availability, and disturbing species interactions and food web processes. Particularly during low flow or drought conditions, the diversions exaggerate the negative impact of low flows and can eliminate most stream life and habitat below the diversions and leave the streams barren of recruitment. (CCH-MA06-01 D&O: FOF 69.)

229. Stream diversions have been found to dampen the natural seasonal discharge cycle, exacerbate natural low flow conditions, and increase the likelihood of prolonged periods of extremely low flow. (CCH-MA06-01 D&O: FOF 70.)

230. Diversions particularly compromise the life cycles of native amphidromous species in numerous ways that compound the negative impacts on their overall populations from mauka to makai. (CCH-MA06-01 D&O: FOF 71.)

231. Diversions diminish larval drift by capturing eggs and larvae. (CCH-MA06-01 D&O: FOF 72.)

232. Diversions also impair flows necessary to transport larvae to the ocean. Any factor that hinders flow or increases retention time in a stream will delay the transport of larvae to the marine environment and negatively impact and possibly kill larvae. (CCH-MA06-01 D&O: FOF 73.)

233. Terminal discharge at the stream mouth into the ocean of sufficient duration and volume is necessary to attract and accommodate upstream migration of post-larval fishes, mollusks, and crustaceans. (CCH-MA06-01 D&O: FOF 74.)

234. There is a direct correlation between streamflow volume under non-freshet conditions and postlarval recruitment in Central Maui streams, such that increased streamflow correlates with increased recruitment at the stream mouth. (CCH-MA06-01 D&O: FOF 75.)

235. At the hearings leading to the Commission's June 2010 Decision and Order on the 'Āao high-level WUPAs and the petition to amend the Nā Wai 'Ehā IIFS (CCH-MA06-01 D&O, *supra*, FOF 9), Hui/MTF's expert witness maintained that "the amphidromous life cycle requires

continuous flow to link biologically the mountains (mauka) to the ocean (makai).” (CCH-MA06-01 D&O: FOF 76.)

236. On the other hand, HC&S’s expert witness stated that “(i)t has not been definitively established that the life cycle of native Hawaiian amphidromous species absolutely depends on continuous mauka to makai flow. There are naturally interrupted and intermittent streams in Hawai‘i that host amphidromous organisms. Statewide surveys conducted by the Division of Aquatic Resources (“DAR”) have found an abundance of ‘o‘opu alamo‘o and ‘opae in the upper reaches of leeward streams that were assumed to be dry year round. Standing pools in the mid-reaches of such streams provide ecologically important habitat for native amphidromous species during baseflow and drought conditions.” (CCH-MA06-01 D&O: FOF 77.)

237. HC&S’s expert witness distinguished between “ecological” and “physical” connectivity, believing that ecological connectivity in a stream is more important than physical connectivity for purposes of sustaining the biological integrity of the stream. He concluded that ecological connectivity exists if stream flows of sufficient volume and frequency allow the normal distribution of native amphidromous species within a given watershed, and that physical connectivity exists if there is uninterrupted flow of surface waters between the headwaters of a stream and its mouth. He therefore concluded that ecological connectivity could exist irrespective of whether there is physical connectivity. (CCH-MA06-01 D&O: FOF 78.)

238. Thus, the volume and duration of stream flows needed to sustain the life cycle of amphidromous species were not known at the time of the evidentiary hearings of CCH-MA06-01, which were held between December 3, 2007 and March 4, 2008, with one additional day of hearings on October 14, 2008, (*supra*, FOF 7).

239. Nevertheless, in its 2010 D&O, the Commission was able to conclude that:

- a. Waihe‘e River had the highest restorative potential;
- b. Waiehu Stream showed evidence of recruitment of amphidromous species,

and that further recruitment could result if improvements were made to assist amphidromous species traverse the 12-foot drop in the elevation of the South Waiehu stream just below the diversion and the vertical concrete apron located just below the highway culverts in lower Waiehu Stream;

c. recruitment can occur through the channelized portion of Wailuku River and the 20-foot vertical drop in the channelized area can be bypassed, but the reproductive (spawning) potential of the channelized, lower stretch is minimal; and

d. Waikapū Stream may not have flowed continuously mauka to makai prior to the diversions of the stream because of extensive infiltration of streamflow into the lower reaches of the streambed, and even when there is streamflow during extensive periods of flooding, stream water does not travel via a continuous channel through Keālia Pond and into the ocean, but fans out into a big delta. (CCH-MA06-01 D&O: COL 214-217.)

240. In 2009, Bishop Museum and the Division of Aquatic Resources published a report that quantified Hawaiian streams' habitat for amphidromous species: Parham *et al.*, "The Use of Hawaiian Stream Habitat Evaluation Procedure to Provide Biological Resource Assessment in Support of Instream Flow Standards for East Maui Streams." Division of Aquatic Resources and Bishop Museum. Honolulu, HI., 2009, 104 p. (James Parham, WT, 02/14/2014, Exh. F-2, p. 2, 2014 Mediated Agreement.)

241. The Habitat Evaluation Procedure accounts for local, network (up and downstream conditions), and watershed differences among sites and can be used for any Hawaiian stream. It provides an assessment of habitat suitability with respect to its location in a stream. (James Parham, WT, 02/14/2014, Exh. F-2, p. 99, 2014 Mediated Agreement.)

242. For the Nā Wai 'Ehā rivers and streams, Waihe'e River and Wailuku River together make up 87.8% of the total naturally occurring habitat units for native amphidromous species within all Nā Wai 'Ehā rivers and streams combined. Wailuku River has 49% of the total habitat units within Nā Wai 'Ehā, and Waihe'e River has 37.8%. Waikapū Stream contains less than 1% of naturally occurring habitat units. (2014 Mediated Agreement: FOF 30.)

243. However, the presence of suitable characteristics at a site is not the only important variable when determining site occupancy. A site can only be occupied by a species if that species can reach that habitat. Both habitat and passage are needed to achieve suitable habitat. "Diversions can entrain animals as they pass up and downstream during their required migrations. Requiring the animal to successfully pass multiple diversions greatly decreases the probability that recruitment, growth, reproduction, and migration...are also successful. Water and suitable instream habitat must exist, but reducing the barriers and potential entrainment

greatly enhances the reproductive productivity of the stream habitat.” (James Parham, WT, 02/14/2014, Exh. F-2, p. 99, 2014 Mediated Agreement.)

244. “Flow restoration at diversion locations is modeled with water returned to the stream passing the diversion and staying in the stream channel. Water flowing past the diversion in this way would provide an obvious wetted pathway with clear up and down queues for migrating animals. In contrast to this water return approach, some restoration efforts have passed a small amount of water over the diversion dam for “biological connectivity” (*supra*, FOF 190) while the bulk of the water is released downstream through the diversion structure... This approach may work fine for downstream drifting larvae, but it is not clear if upstream moving animals can navigate the diversion structure to find a way upstream. While water over the dam does provide a wetted pathway, how easy it is for an animal to find this small pathway in comparison to the large diversion flow is unclear.” (James Parham, WT, 02/14/2014, Exh. F-2, p. 99, 2014 Mediated Agreement.)

2. Maintenance of Ecosystems

a. Estuarine and Nearshore Marine Ecosystems

245. Streams are a major source of nutrients and minerals to the tropical marine system, and biological communities use these organic resources in numerous ways, creating a natural functioning mauka to makai ecosystem. (Exh. A-220 (Lindstrom study) at 69; Benbow, WT, September 14, 2007, ¶ 14 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-104.)

246. By limiting the natural transport of organic matter to the ocean, diversions impact the biological communities that depend on these resources, including crustaceans, cephalopods, and nearshore and pelagic fishes. (Benbow, WT, September 14, 2007, ¶ 14 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-107.)

247. Kama‘āina and cultural practitioners in Nā Wai ‘Ehā provided cultural testimony reflecting the interconnection between the rivers/streams and nearshore marine habitats. (Sevilla, WT, September 14, 2007, ¶ 9, and Bailey, WT, September 14, 2007, ¶ 4 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-108.)

b. Wetland Ecosystems

248. Each of the four waters of Nā Wai ‘Ehā support coastal wetland ecosystems, which are recognized by the U.S. Fish and Wildlife Service. (Exh. A-78 (Hawai`i Stream Assessment) at 182, 286 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-116.)

249. A 2008 USGS report predicted that streamflow restoration would increase fresh groundwater levels across Nā Wai ‘Ehā, including in the coastal wetland area, by a range starting from 0.1 to 0.5 feet and extending to more than 3 feet. (Exh. A-R2 (USGS Groundwater Report), at 69 (Figure 45), 63, 66 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF OHA: FOF A-117.)

250. The ‘ili of Paukūkalo between Wailuku River and Waiehu Stream is historically and culturally renowned for its springs and wetlands, collectively known as Ka‘ehu Wetlands. Paukūkalo community members, including ‘ohana with multi-generational ties to these lands, confirm that when Wailuku River and Waiehu Stream flow continuously to the ocean, the seeps and springs on their land “come alive” and are recharged with water. (Ivy, WT, September 14, 2007, ¶ 8, March 2, 2008, ¶¶ 1, 9; Exh. A-54 at ii, 6; Kekona, WT, September 14, 2007, ¶¶ 3-4; Sevilla, WT, September 14, 2007, ¶¶ 2, 8 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-119 to A-120.)

251. Waikapū Stream’s delta is at the Keālia Pond wetlands, which has been established as a National Wildlife Refuge to preserve, restore, and manage essential habitat for endangered waterbirds. The Commission has designated Waikapū Stream as a “Blue Ribbon” candidate for protection of its riparian resources, specifically based on its connection with the wetlands at Keālia Pond. (Hui/MTF and OHA: FOF A-127 to A-128.)

3. Recreational and Aesthetic Values

252. The Nā Wai ‘Ehā waters have supported recreational activities such as hiking, fishing, swimming, parks, scenic views, and nature study. (Exh. A-78 (Hawai‘i Stream Assessment) at 248, 252 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-130.)

253. Community members have uniformly testified to the degraded aesthetic and recreational values of the rivers and streams in their historically diverted conditions. (Alueta, WT, September 14, 2007, ¶ 9; Higashino, WT, September 14, 2007, ¶¶ 5-6; Pellegrino, WT, September 14, 2007, ¶ 28 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-133.)

4. Scientific Study and Education

254. The scientific consensus is that long-term flow restoration is essential to support ecological studies. (Benbow, WT, September 14, 2007, ¶¶ 18-21. (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-136.)

255. Community members use or would like to use Nā Wai ‘Ehā streamflows as part of numerous community-based cultural education activities. These programs collectively serve

thousands of visitors and students, but have been limited by the historical lack of flows. (Pellegrino, WT, September 14, 2007, ¶¶ 24-28; Alboro, WT, September 14, 2007, ¶¶ 4-6; Bailey, WT, September 14, 2007, ¶ 2; Sevilla, WT, September 14, 2007, ¶¶ 10-13; Fisher, WT, September 14, 2007, ¶ 18 (CCH-MA06-01 D&O); Sevilla, WT, January 7, 2014, ¶ 7; Piko, WT, January 7, 2014, ¶¶ 1-4 (2014 Mediated Agreement).) (Hui/MTF and OHA: FOF A-137.)

5. Water Quality

256. Nā Wai ‘Ehā account for three of the ten streams on Maui that DOH has determined to be impaired. The designated uses of Nā Wai ‘Ehā streams include: “recreational purposes,” “support and propagation of aquatic life,” “scientific and educational purposes,” “protection of native breeding stock,” “aesthetic enjoyment,” and “other nondegrading uses.” (Penn, WT, September 14, 2007, pp. 23-24; Tr., December 6, 2007, at p. 222, l. 17 to p. 223, l. 1 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-138 to A-139.)

257. There is a direct relationship between offstream diversions and water quality. Greater diversions mean greater impairment, including decreased stream assimilative capacity, increased pollutant concentrations, increased pollutant deposition, longer pollutant resident times, degraded stream habitat quality, and decreased stream biotic integrity. (Penn, WT, September 14, 2007, p. 24 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-140.)

258. Constant base flows are able to assimilate and transport pollutants in a fairly continuous manner. Reduced base flows have low assimilative capacity and allow pollutants to settle out and deposit. Storm flows deliver a massive pollutant load extremely rapidly, including the pollutants accumulated over time because of reduced flows. (Penn, Tr., December 16, 2007, p. 210, l. 19 to p. 211, l. 21. (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-141.)

6. Groundwater Aquifer Recharge

259. In the lower reaches of Nā Wai ‘Ehā, the stream channels overlie the basal freshwater lenses, allowing stream waters to migrate from the stream bed down to the basal lenses. (Oki, WT, September 14, 2007, ¶ 12 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-147.)

260. Waihe‘e River overlies the Waihe‘e Aquifer, Wailuku River and Waiehu Stream overlie the ‘Īao Aquifer, and Waikapū Stream overlies the Waikapū Aquifer. All these surface and groundwater resources lie within the larger Wailuku Aquifer Sector. (Exh. B-13 (aquifer

map); Exh. A-R2 (USGS Groundwater Report) at 31 (Figure 18), 2 (Figure 1) (CCH-MA06-01 D&O.) (Hui/MTF and OHA: FOF A-148.)

261. The ‘Īao and Waihe‘e Aquifers both supply public drinking water for the County of Maui. The ‘Īao Aquifer is central Maui’s principal drinking water source. The Waikapū Aquifer is also being contemplated for various prospective potable water wells. (Taylor, MDWS Dec. February 5, 2016, ¶ 8; Eng, MDWS Dec. September 14, 2007, ¶ 7; Exh. 2189 WCEIC-270 (Nance Report), at 7-8.) (Hui/MTF and OHA: FOF A-149.)

262. Downstream of the uppermost Nā Wai ‘Ehā diversions, USGS estimated the total amount of natural recharge under natural, undiverted low-flow conditions of 1.7 mgd from Waihe‘e River, 2.9 mgd from Waiehu Stream, 5.6 mgd from Wailuku River, and 4.3 mgd from Waikapū Stream. The diversions were capable of reducing this recharge by more than 89 percent for Waihe‘e River, Wailuku River, and Waikapū Stream, and by more than 33 percent for Waiehu Stream. (Exh. AR-1 (USGS Streamflow Report), at iii-v (2014 Mediated Agreement).) (Hui/MTF and OHA: FOF A-150.)

7. Needs of Downstream Users

263. Amending the IIFS must consider the needs of present and future users downstream of present diversions. These users are addressed in the analysis, *infra*, of appurtenant rights and surface water-use permit applications in this contested case

8. Protection of Traditional and Customary Native Hawaiian Rights

264. Due to the profusion of fresh-flowing water in ancient times, Nā Wai ‘Ehā 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. (CCH-MA06-01 D&O: FOF 34.)

265. Nā Wai ‘Ehā’s abundant water resources served as a base of political and economic power for the region in ancient times. (CCH-MA06-01 D&O: FOF 48.)

266. Upper ‘Īao 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. (CCH-MA06-01 D&O: FOF 44.)

267. Nā Wai ‘Ehā is home to several important heiau. Of particular significance are Haleki‘i and Pihana Heiau, located between Waiehu and ‘Īao Streams. These heiau were re-consecrated in 1776 as an offering before the famous battle between Hawai‘i 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. (CCH-MA06-01 D&O: FOF 45.)

268. The presence of heiau (places of worship, temples) in a windward environment indicates large populations and agricultural pursuits. In Nā Wai ‘Ehā, there are a total of 36 documented heiau, which is the largest number of heiau among all Maui island communities and underscores the cultural, historical, and political importance of this region. (CCH-MA06-01 D&O: FOF 46.)

269. Nā Wai ‘Ehā’s water resources sustained “the second largest population on the island of Maui.” “In 1831-32, 827 people resided in the Waihe‘e ahupua‘a, representing a very large population” that was surpassed only by the population in ‘Īao (or Wailuku). (CCH-MA06-01 D&O: FOF 47.)

270. The waters of Nā Wai ‘Ehā 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.” (CCH-MA06-01 D&O: FOF 43.)

271. The abundance of water in Nā Wai ‘Ehā enabled extensive lo‘i kalo (wetland kalo) complexes, including varieties favored for poi-making such as “throat-moistening lehua poi.” (CCH-MA06-01 D&O: FOF 35.)

272. The four ahupua‘a of Nā Wai ‘Ehā and their streams comprised the largest continuous area of wetland taro cultivation in the islands. (CCH-MA06-01 D&O: FOF 36.)

273. ‘Īao Valley was known for its two famous ‘auwai called the Kama‘auwai and Kalani‘auwai, which fed many kuleana lands. (CCH-MA06-01 D&O: FOF 37.)

274. Numerous springs feeding lo‘i kalo existed in the district of Wailuku in ancient days. (CCH-MA06-01 D&O: FOF 38.)

275. “All indications are that Waihe‘e Valley was traditionally a rich, fertile valley supporting a substantial population. Hawaiians constructed extensive lo‘i (irrigated taro terraces) and elaborate ‘auwai systems to provide water for the lo‘i . . . Many lo‘i can be seen today, although most are not in use.” (CCH-MA06-01 D&O: FOF 39.)

276. In particular, 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 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. (CCH-MA06-01 D&O: FOF 60.)

277. In Hawaiian culture, “(o)ur ancestor was the kalo itself.” The first born child of Wākea (Sky father) and Ho‘ohōkūkalani (daughter of Papa, the Earth mother) was stillborn. Shortly after being buried, his body reemerged from the ground in the form of a kalo plant, which Wākea named Hāloanakalaukapalili (long stem, trembling leaf). Their next child was a healthy boy whom they named Hāloa after his deceased older sibling. Hāloa grew to be a strong man and became the ancestor of all Hawaiians. The story of Hāloa acknowledges Native Hawaiians’ familial relationship with kalo as an elder sibling, and the resulting cultural significance of cultivating kalo in a traditional manner. (CCH-MA06-01 D&O: FOF 61-62.)

278. In the ahupua‘a of ‘Īao, “the waters of the region provided for a diet which ‘consisted mainly of fish (napili and nakea), opae, hihi-wai (all obtained from ‘Īao Stream), and lehua (red) taro which was grown in lo‘i (irrigated terraces) lining the banks of the stream.” (CCH-MA06-01 D&O: FOF 42.)

279. In addition to extensive agricultural production, traditional and customary practices thrived in Nā Wai ‘Ehā, including the gathering of upland resources, such as thatch and tī, and protein sources from the streams, including ‘o‘opu, ‘ōpae, and hīhīwai. (CCH-MA06-01 D&O: FOF 40.)

280. 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 ‘Ehā area due to the lack of freshwater flowing in Nā Wai ‘Ehā’s streams and into the nearshore marine waters. (CCH-MA06-01 D&O: FOF 49.)

281. Despite significant challenges, some Native Hawaiian practitioners in Nā Wai ‘Ehā continue to exercise traditional and customary rights and practices, including “gathering

stream life such as hihiwai, ‘ōpae, ‘o‘opu, 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.” (CCH-MA06-01 D&O: FOF 51.)

282. According to Hōkūlani Holt-Padilla, in Nā Wai ‘Ehā, it is a traditional Native Hawaiian practice for cultural practitioners to gather in the ahupua‘a in which she lives; an ahupua‘a in which she has ancestral ties, even if no family member then resides there; or an ahupua‘a that “contains certain resources of value to her as a member of a Hawaiian cultural group such as traditional Hawaiian healers, who may use a specific area to gather lā‘au lapa‘au (native plants for medicine); hālau hula, whose chants and dances may honor deities associated with a specific natural resource area, and which may need to gather certain native plants from these areas; and fishermen, hunters, and gatherers who have accessed and used the ahupua‘a for subsistence.” (CCH-MA06-01 D&O: FOF 52.)

283. Kumu Hula Akoni Akana gathers materials such as hau, palapalai, lā‘ī, and laua‘e from Waihe‘e 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.” (CCH-MA06-01 D&O: FOF 53.)

284. The spiritual practice of hi‘uwai, 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 hi‘uwai in a stream magnifies the mana(.)” (Hui/MTF and OHA: FOF A-51; CCH-MA06-01 D&O: FOF 54.)

285. 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. Many families seek to reestablish the tradition of growing kalo in Nā Wai ‘Ehā. (CCH-MA06-01 D&O: FOF 55; 2014 Mediated Agreement: Exhibit 1, FOF 39-40.)

286. “Nā Wai ‘Ehā 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 ‘Ehā “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. (CCH-MA06-01 D&O: FOF 57.)

287. “Restoration of mauka to makai flow to the streams is critical to the perpetuation and practice of Hawaiian culture in Nā Wai ‘Ehā.” “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.” (CCH-MA06-01 D&O: FOF 58.)

288. “The return of the waters of Nā Wai ‘Ehā 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 ‘Ehā.” (CCH-MA06-01 D&O: FOF 59.)

F. Impact of the 2010 and 2014 Amendments to the IIFS

289. Under its 2010 Decision and Order (*supra*, FOF 14), the Commission:

- a. returned 10 mgd to Waihe‘e River (with an estimated flow at the mouth of 6.5 mgd due to infiltration losses),
- b. returned 1.6 mgd to North Waiehu Stream and 0.9 mgd to South Waiehu Stream (with an estimated flow at the mouth of Waiehu Stream of 0.6 mgd because of infiltration losses),
- c. returned no water to Wailuku River, and
- d. returned no water to Waikapū Stream.

290. Under the 2014 Mediated Agreement (*supra*, FOF 17) the IIFS were set as follows:

- a. Waihe‘e River:
 - i. Per CCH-MA06-01 D&O, the IIFS remained at 10 mgd at both the Waihe‘e Ditch and the Spreckels Ditch intakes.
- b. Waiehu Stream:
 - i. The IIFS for North Waiehu Stream was modified to reflect the inactivation of the North Waiehu Ditch after the Commission's 2010 Decision and Order. The IIFS of 1.6 mgd that had been measured just below the point where the stream was being diverted by WWC into the now abandoned Upper North Waiehu Ditch was

replaced by a new IIFS of 1.0 mgd at a lower location just below the existing North Waiehu diversion structure located just above the Waihe'e Ditch. The new IIFS of 1.0 mgd was intended to reflect the approximately 0.6 mgd of seepage loss in the streambed between these two points. In connection with the relocation and the amendment of the IIFS, WWC was to:

- a. provide water to the kuleana property that previously was provided water from the North Waiehu Ditch;
 - b. in consultation with Commission staff, modify the existing North Waiehu diversion structure located just above the Waihe'e Ditch to facilitate the upstream and downstream passage of native stream species; and
 - c. continue to service the Waiehu kuleana users from the Waihe'e Ditch.
- ii. The IIFS of 0.9 mgd for South Waiehu Stream immediately below the Spreckels Ditch Diversion was modified with the stipulation that the sluice gate on HC&S's South Waiehu diversion structure be set to allow sufficient water to enter the diversion ditch during low stream flows to result in approximately 250,000 gpd to flow from the diversion ditch to the kuleana intake, with the remainder of the low flows returned to the stream.
- c. Wailuku River:
- i. A new IIFS was set at 10 mgd, just below the diversion operated by WWC above the 'Iao-Waikapū and the 'Iao-Maniania Ditches, provided that:
 - a. when average daily flow measurements are between 15 mgd and 10 mgd and has continued in that range for three consecutive days, the greater of one-third (1/3) of the river flow or 3.9 mgd may be diverted for noninstream use until the flow returns to 15 mgd or above;

- b. when average flow for any day falls below 10 mgd, 3.4 mgd may continue to be diverted to accommodate MDWS's 3.2 mgd for its water treatment plant and 0.2 mgd for kuleana users served exclusively by the 'Īao-Waikapū Ditch; and
- c. in lieu of setting an IIFS at the Spreckels Ditch diversion, a new IIFS of 5 mgd was established at or near the mouth; HC&S could not divert water at the Spreckels Ditch except when the river flow is adequate to meet the IIFS of 5 mgd at the mouth.
- d. Waikapū Stream:
 - i. A new IIFS was set at 2.9 mgd just below the South Waikapū Ditch (Reservoir 1) Diversion.
 - ii. At the Waihe'e Ditch Diversion, the status quo continued, which was that water remaining in Waikapū Stream at that point is diverted into Waihe'e Ditch except during periods of high flow, when most of the flow of Waikapū Stream passes or tops the diversion and flows toward Keālia Pond, and excess ditch flow is discharged into Waikapū Stream. The intent was that the frequency and amount of intermittent flows that pass this diversion during rainy periods would not be diminished by any change in the manner in which this diversion was being operated.

(2014 Mediated Agreement, Exh. 1, pp. 26-28.)

291. The improved flow conditions in Waihe'e River and Waiehu Stream under the 2010 Decision and Order resulted in large increases in combined species habitat. Waiehu Stream gained over 3,500 combined species habitat units and went from 6.1% to 55.5% of natural habitat units. Waihe'e River gained over 2,400 combined species habitat units and went from less than 1% to 11.1% of natural habitat units. (2014 Mediated Agreement: FOF 32.)

292. No further habitat studies have been conducted since the April 2014 Mediated Agreement which returned 10 mgd to Wailuku River and 2.9 mgd to Waikapū Stream. (Tr., October 14, 2016, p. 78, l. 25 to p. 79, l. 3.)

293. Because the North Waiehu Diversion has been closed, WWC is no longer diverting water from North Waiehu Stream, so the passage upstream and downstream of native stream species is not affected. (Chumbley, Tr., 10/14/16, p. 131, l. 16 to p. 132, l. 11.)

294. As for providing water from the Waihe'e Ditch for kuleana property that were previously served from the North Waiehu Ditch, WWC has not developed an engineering plan to be able to determine if it can take water out of the Waihe'e Ditch at that point. (Chumbley, Tr., 10/14/16, p. 132, l. 19 to p. 133, l. 16.)

295. Area residents have experienced observable changes attributable to the Commission orders restoring flows to the four rivers and streams.

296. For the earlier restorations of Waihe'e River and Waiehu Stream, Mr. Nakama, whose 'ohana has been farming kalo for generations in Waihe'e and Waiehu, expressed thanks for the restoration of consistent flow and testified that, before his father passed away, "he would be overcome with joy at the sight and sound of water flowing," and "to me, that was priceless." (Nakama, Tr., September 19, 2016, p. 97, ll. 3-12.) (Hui/MTF and OHA: FOF A-135.)

297. On the north side of Waihe'e River near the mouth, the Poka 'ohana kuleana lands contained spring flows and wetlands that supported kalo cultivation, but these quickly dried up when WWC and HC&S augmented their stream diversions. Paeloko, a sacred pond that is part of the freshwater cycle in Waihe'e and connected to the Kapoho Wetlands, was previously filled when the highway was expanded, but the wetlands have recently been returning and providing habitat for endangered native birds and a resource for cultural education. (Schwartz, WT, November 29, 2007, ¶¶ 1-7 (CCH-MA06-01 D&O); Piko A'o, WT, January 7, 2014, ¶¶ 5-19 (2014 Mediated Agreement).) (Hui/MTF and OHA: FOF 126.)

298. When Wailuku River and Waiehu Stream flow continuously to the ocean, Paukūkalo community members, including 'ohana with multi-generational ties to these lands, confirm that the springs and seeps on their lands "come alive" and are recharged with water. (Ivy, WT, September 14, 2007, ¶ 8; Kekona, WT, September 14, 2007, ¶¶ 3-4; Kekona, Tr., December 4, 2007, p. 211, ll. 2-7; Sevilla, WT, September 14, 2007, ¶ 8 (CCH-MA06-01 D&O).) (Hui/MTF and OHA: FOF A-120.)

299. Resident children have begun to swim in Wailuku River again. Mr. Ornellas, cultural descendant and long-time resident of 'Īao Valley, testified that his "grandchildren

learning how to swim right there in the river” is “the highlight of it all.” (Ornellas, Tr., July 18, 2016, p. 37, ll. 1-5.) (Hui/MTF and OHA: FOF A-135.)

300. Long-time kama‘āina community member Duke Sevilla reports that with the partial restoration of Wailuku River, the flow in the Waiola Spring on his ‘ohana’s land has increased and become more consistent, remaining saturated throughout the hot summer months. This confirms his lifetime experience and the broader community understanding of the correlation between the amount of water in the river and the amount of water in the springs. (Sevilla, WT, March 18, 2016, ¶¶ 13, 35; Exh. 2275 Sevilla-7 (before and after photographs of Waiola Spring).) (Hui/MTF and OHA: FOF A-123.)

301. For Waikapū Stream, Mr. Dodd, long-time resident of Waikapū, testified that when he was growing up, Keālia Pond “was mud flats,” but since water has been returned to Waikapū Stream, Keālia Pond has water, “(a)nd this has brought joy to my life. Water has returned to Kealia where it belongs.” (Dodd, Tr. July 28, 2016, p. 14, l. 19 to p. 15, l. 7.) (Hui/MTF and OHA: FOF A-135.)

G. Noninstream Uses

302. “Noninstream use” means the use of stream water that is diverted or removed from its stream channel and includes the use of stream water outside of the channel for domestic, agricultural, and industrial purposes. (HRS § 174C-3.)

1. Irrigation Requirements

a. Lo‘i Kalo

303. Irrigation requirements for lo‘i kalo are discussed in Section I.D.2, *supra*, FOF 178-220.

b. Diversified Agriculture

304. Many applicants whose existing or proposed new uses include diversified agriculture, cite *Waiāhole*’s 2,500 gad¹⁴ for diversified agriculture as their existing or anticipated use requirements.

305. There also are irrigation guidelines for various types of crops, including trees, which have been offered by some of the applicants. For example SWUPA 2298/2299N—Varel references the Commission’s 1990 Hawai‘i Water Plan, O‘ahu Management Plan’s standards of

¹⁴ *In re Water Use Permit Applications*, 105 Hawai‘i 1, 22, 93 P.3d 643, 664 (2004) (hereinafter “*Waiāhole II*”).

4,400 gad for macadamia nuts and 5,000 gad for foliage plants. (Varel, WT, September 12, 2016, ¶¶ 60-68.)

306. Applicants reported a range of uses for various types of agriculture, for example:
- a. 283 gad:141.7 gpd for 0.5 acre of fruit trees. (SWUPA 4444N, p. 2, table 1, p. 3, table 2.)
 - b. 417 gad:1,667 gpd for 4 acres of fruit trees. (SWUPA 4445N, p. 2, table 1, p. 3, table 2.)
 - c. 250 gad, increasing to 500 gad, then 750 gad:1,000 gpd for 4 acres of 9-year-old fruit trees, expected to increase to about 2,000 gpd, then to about 3,000 gpd when fully grown. (SWUPA 3671N, dated 7/5/16, p. 2, table 1, p. 3, table 2; Sloan, WT, 2/26/16, ¶ 3; Sloan, Tr., 7/22/16, p. 109, ll. 19-24, p.112, ll. 6-17.)
 - d. 1,043 gad:22, 938 gpd for 22 acres of bananas, tapioca, beans, okra, dryland taro, and eggplant. (SWUPA 2144, p. 2, table 1, p. 4, table 3.)
 - e. 1,100 gad:3,300 gpd for 3 acres of landscape and fruit trees. (Ota, Tr., 7/19/16, p. 72, ll. 8-9, p. 73, l. 14 to p. 74, l. 17.)
 - f. 1,445 gad:1,950 gpd on 0.89 acre of apple bananas and 0.46 acre of fruits and vegetables. (SWUPA 2339-Yamaoka, p. 2, table 1, p. 3, table 2.)
 - g. 1,550 gad:6,200 gpd on 4 acres of ornamental and nursery plants. (Exh. 2203-MTP-1.)
 - h. 2,217 gad:33,261 gpd on 15 acres of various landscape plants, both in the ground and on nursery benches, for propagation of plant starts such as shrubs, groundcovers and trees. (SWUPA 2183, p. 2, table 1, p. 4, table 3.)
 - i. 2,058 gad:82,332 gpd on 40 acres of row crops. (Exh. 2203-MTP-1.)
 - j. 2,400 gad:36,000 gpd on 15 acres of landscaping. (Exh. 2203-MTP-1.)
 - k. 4,138 gad:21,371 gpd for 4.2 acres of bitter melon, pasture, dryland taro, fruit trees, and landscaping. (SWUPA 2155, p. 2, table 1, p. 4, table 3; Suzuki, Tr., 7/18/16, p. 148, ll. 15-24.)
 - l. 17,777 gad:10,400 gpd for 0.585 acres—0.30 acre of vegetable truck crops, 0.10 acre of fruit trees, and 0.185 acre of landscaping. (SWUPA 2156, p. 2, table 1, p. 4, table 3; Suzuki, Tr. 7/18/16, p. 151, ll. 1-7.)

c. Household and Domestic Uses

307. An “average typical residential customer” in Maui County uses 400 to 600 gpd of combined indoor and outdoor use, and as high as 1,500 to 2,000 gpd for irrigation of “lush tropical landscape treatment” in arid areas. (Eng, Tr., December 13, 2007, p. 191, l. 7 to p. 192, l. 5; Tr., December 14, 2007, p. 4, l. 9 to p. 5, l. 17.) (Hui/MTF and OHA: FOF C-169.)

308. Maui County has accommodated agricultural development lots with 600 to 1,200 gpd, but limits further allocations so as not to provide excessive amounts of water to developments not engaged in bona fide agriculture. (CCH-MA06-01 D&O: FOF 402.) (Hui/MTF and OHA: FOF C-169.)

309. “Domestic use” means any use of water for individual personal needs and for household purposes such as drinking, bathing, heating, cooking, noncommercial gardening, and sanitation. (HRS § 174C-3.)

2. Possible Alternative Water Sources Shared by Applicants

310. Many of the SWUPAs share the same possible alternatives to river/stream surface waters and have provided similar analyses on these possible alternatives. Rather than repeating these analyses for each SWUPA, they will be identified here and incorporated by reference in the SWUPAs. For some SWUPAs, their particular circumstances will be addressed individually.

a. Ground Water Resources

i. Potable Water

311. MDWS’s Central Maui System has a total peak available source of 25.696 mgd, with average daily use of 20.5 mgd. By 2030, population growth for Central Maui is projected to increase demand by 7.7 mgd to 19.4 mgd, with a baseline of 13.6 mgd used for planning purposes. (Exhs. 2178-County-1, -2; 2178-County 11, table 4; 2178-County-12, p. 6.) (MDWS: FOF 24-26, 31-32.)

312. Of the total average daily use of 20 mgd as of April 30, 2008, 0.21 mgd, or 1 percent, was used for agriculture. Future use for agriculture is projected to remain at 1 percent. (Exhs. 2178-County-1, -2; 2178-County 11, table 4; 2178-County-12, p. 6.) (MDWS: FOF 24-26, 31-32.)

313. While the current system meets the needs of the Central Maui System, MDWS will need to develop new sources of water to meet future needs.

- a. MDWS currently has a SWUPA in this contested case hearing for new uses of 1.416 mgd to divert water from Wailuku River, in addition to its existing use SWUPA for 1.784 mgd.
- b. MDWS's withdrawal of 4 mgd from the Waihe'e Aquifer and 2 mgd from the Kahului Aquifer are already at the limits established by the Commission, and USGS has indicated that new wells may not be as productive or cost-effective as hoped.
- c. Eastward basal groundwater development, with a series of wells at elevation 1000 feet, transmission pipelines, storage tanks, and booster pump stations, is restricted by a Consent Decree which was recently used to prevent MDWS from even developing test wells.
- d. USGS had also previously indicated that the Waikapū Aquifer may be a possible source of new water, but the sustainable yield is only 2 mgd, and MDWS expected competition from private landowners for the available water. Waikapu Properties have five (5) wells, three shown to be potable and two in final testing for potability at the time of the contested case hearing.

(Taylor, WT, 7/5/16, ¶¶ 30-31; Taylor, Tr., 7/19/16, p. 28, l. 3 to p. 29, l. 2, p. p. 41, ll. 18-23, p. 42, ll. 3-16, p. 43, ll. 9-24; Exhs. 2178-County-9, p. 59 ¶¶ 371-373, -11, p. 6, table 12, -9. P. 59 ¶ 370, -12, pp. 30-43; Atherton, WT, 2/5/16, ¶ 27.) (MDWS: FOF 40-45.)

314. Besides MDWS, potable water wells have been developed by SWUPAs 2356, 2297N, 3471N, and 3472N—Waikapu Properties, as mentioned above, and SWUPAs 2298/2299N—Varel, which will be addressed in their SWUPAs.

ii. Non-potable Water

315. For non-potable groundwater:

- a. SWUPA 2206—Mahi Pono has a groundwater well; and
- b. SWUPAs 2356, 2297N, 3471N, and 3472N—Waikapu Properties has two wells in development that are not yet determined if they are potable or non-potable.

These sources will be addressed in each of the SWUPAs.

b. Recycled Water

316. MDWS's Wailuku-Kahului Wastewater Reclamation Facility ("WWRF") generates about 4 mgd of recycled wastewater, of which only 0.2 mgd is currently used on and near the WWRF. MDWS has developed estimates of demand and costs within its own system, in which R-1 treated wastewater would replace potable water currently being used for nonpotable purposes, thereby freeing up more potable water for potable uses. These uses within the MDWS system are limited, as agriculture and private irrigation represent only 2 percent of use.

a. The amount of water that could be replaced by treated water is an estimated maximum of 0.601 mgd and average annual demand of 0.38 mgd.

b. It would require significant capital expenses, including the expansion of existing treatment facilities, construction of storage tanks, and extended transmission lines. Costs would be \$37.60 million:

- i. \$5.37 million to upgrade the WWRF from R-2 to R-1;
- ii. \$25.94 million to deliver 0.191 mgd to the Maui Lani area;
- iii. \$4.29 million to deliver 0.225 mgd to Kahului Airport and Kanahā Beach Park; and
- iv. \$2.00 million to deliver 0.185 mgd to distribute from Queen Ka'ahumanu Center to existing HC&S pipelines formerly used for pineapple cannery wastewater to what was HC&S's seed cane fields, Maui High School, Kahului Community College and Park, Kahului Elementary, and Hale Mahaolu.

Most of the large users in the Maui Lani area currently use brackish groundwater for irrigation, so only 0.191 mgd is projected to replace potable water at a cost of \$25.94 million. (Taylor, WT, 7/5/16, ¶ 26; Taylor, Tr., 7/19/16, p. 24, ll.1-20, p. 47, l. 14 to p. 48, l. 13; Exhs. 2178-County-1, -2, -11, pp. 8-9, tables 8 and 10) (MDWS: FOFMDWS: FOF 31-32, 51-52.)

317. For uses outside the MDWS system:

a. Of a potential 4 mgd of R-1 water, MDWS is using 0.2 mgd and estimates increased use at 0.38 mgd average and 0.601 mgd maximum demand, *supra*. Therefore, potentially more than 3 mgd of R-1 water could be available to outside users. Moreover, MDWS would be able to cease disposing of the treated wastewater into injection wells.

- i. At the time of the 2014 Mediated Agreement, it was estimated that approximately 2.95 mgd of R-2 treated water could potentially be available upon construction of improvements at an estimated

capital cost of approximately \$16.9 million and a definitive agreement reached between HC&S and the County of Maui, stating the terms and conditions under which the County would provide, and HC&S would accept, reclaimed wastewater, including allocations of the improvement costs, the quality and quantity of water to be delivered, and the water rate charged by the County. Even if agreement between HC&S and the County could be reached, the Commission had concluded in 2014 that completion of the necessary infrastructure would not occur until 2020 at the earliest. (CCH-MA06-01 D&O: COL 107; 2014 Mediated Agreement: FOF 55-57, COL 15.) (HC&S: FOFHC&S: FOF 77.)

- ii. Upgrading the water from R-2 to R-1 would make it available not only to MDWS's current users but also to other potential users. The cost and logistics of delivering R-1 water to other users would have to be estimated, as MDWS has already done for potential users within its system. Such costs would be expected to vary widely, as MDWS's estimates within its system ranged from \$2.00 million to \$25.94 million, and the cost-effectiveness of delivery had no relationship to the amount delivered, as the \$2.00 million estimate was for delivering 1.85 mgd, while the \$25.94 million estimate was for delivering 1.91 mgd, *supra*.

c. Desalination

318. There are no desalination plants on Maui. The strategy for desalination of brackish groundwater to potable water would consist of development of a 5 mgd reverse osmosis desalination facility either in the Kahului aquifer or from deeper wells into the salt water below an aquifer. (Exhs. 2178-County-11, pp. 6-7, -12, pp 67-68; Lekven, Tr., 7/19/16, p. 44, ll. 5-8.) (MDWS: FOF 46.)

319. Desalination would require both capital costs associated with building the desalination facility and operational costs associated with the high intensity energy needs of the desalination process. Brackish groundwater must be pumped up to the treatment plant, reverse osmosis would remove salt and other minerals to create potable water, and the residual brine liquid must be disposed via deep injection wells into salt water below the source of brackish groundwater or at least 1000 feet away if the source itself is seawater.

a. MDWS's evaluation concluded that desalination of brackish groundwater from the Kahului Aquifer was more cost-effective than using sea water as the source.

- i. However, the desalination process is expensive, complex, and an energy-intensive way of meeting future needs dependence on

imported energy and uncertainty associated with future energy prices adds a significant implementation risk.

- ii. This option, which would use brackish water from the Kahului aquifer, does not address the current withdrawal of 2.00 mgd of potable water from the aquifer, and how the potability of that water might be affected by withdrawing an additional 5 mgd of brackish water.

(Taylor, Tr., 7/19/16, p. 44, ll. 5-11, p. 44, l. 21 to p. 45, l. 8; Exhs. 2178-County-11, pp. 6-7, table 12, p. 12, -12, pp. 67-68.) (MDWS: FOF 46-49.)

- b. WCEIC's consultant also examined desalination as a possible alternative.

Desalination of groundwater onsite would require: a) a deep well to exclusively draw saline groundwater from beneath the 'Īao basal groundwater lens at between 900 to 1100 feet below sea level and a salt-water pump capacity of 1.75 mgd; b) a reverse osmosis plant; c) deep wells to dispose of the hypersaline concentrate from the reverse osmosis process, located at least 1000 feet away from the saltwater supply well and delivering the hypersaline concentrate between 1300 to 1500 feet below sea level, to avoid recirculation back to the saltwater supply well; and d) booster pumps at the plant, 6000 feet of 8-inch transmission pipeline, and a 200,000 gallon steel tank at the head of the irrigation delivery system. Costs were estimated at \$10.2 million, with operating costs estimated at \$12.05 per thousand gallons. The consultant did not examine where on WCEIC's property such a facility might be sited. (Exh. 2189-WCEIC-270, pp. 7-12.) (WCEIC: FOF 73-77.)

3. Appurtenant Rights and Surface Water-Use Permit Applications

320. The following SWUPAs are grouped by source; i.e., Waihe'e River, Waiehu Stream, Wailuku River, Waikapū Stream, and Multiple Sources. "Multiple Sources" in particular refers to the Waihe'e and Spreckels Ditches—which originate from the Waihe'e River—after their waters are commingled with water from Waiehu Stream, Wailuku River, and/or Waikapū Stream. For example, Waihe'e River would include diversions directly from the River, plus diversions from the Waihe'e and Spreckels Ditches before they receive water from Wailuku River into the Waihe'e Ditch¹⁵ and from South Waiehu Stream into the Spreckels Ditch.

321. SWUPAs are addressed in the order they appear in Figure 1.

¹⁵ The Waihe'e Ditch previously received water from North Waiehu Stream, but that diversion has since been abandoned, *supra*, FOF 136.

322. SWUPA 2157—Wailuku Water Company

a. On April 22, 2009, WWC filed an existing use application for system losses equal to 7.34% of total diversions as measured from seven stream diversions: the Waihe‘e and Spreckels Ditch diversions on Waihe‘e River, the North Waiehu Ditch diversion on North Waiehu Stream, the ‘Īao diversion on Wailuku River, and the South Waikapū Ditch, Waihe‘e Ditch, and Reservoir 6 diversions on Waikapū Stream. (SWUPA 2157, Table 1 Attachment.) (WWC: FOF 19.)

b. System losses had been determined by a study conducted in 1988, at which time losses were about 11.6% of total diversions. WWC had then repaired structures and ditches, resulting in a reduction of system losses to about 7.34% of total diversions. (Chumbley, WT, 1/7/14, pp. 2-3 (2014 Mediated Agreement); Chumbley, WT, 2/2/16, p. 1; Chumbley, Tr., 7/22/16, p. 85, l. 25 to p. 86, l. 18.) (WWC: FOF 20-21.) (Hui/MTF and OHA: FOF C-262.)

c. After the Commission’s Decision and Order on CCH-MA06-01 D&O, WWC conducted further repairs and modifications, including repairing ditch and intake structures, as well as closing reservoirs and the North Waiehu Ditch, and minimized “flow-through” losses from unused water reaching the end of the ditch system.

1. In 2010, WWC made repairs to the Spreckels Ditch at Field 25, the ‘Īao-Waikapū Ditch near Kukahi Drive, the Waihe‘e Ditch at South Waiehu Stream, and Reservoir 10.

2. In 2011, the intakes on South Waikapū Stream, the Waihe‘e Ditch at Field 8 were repaired, and the North Waiehu Stream diversion was shut down.

3. In 2012, WWC repaired structures at the Spreckels Ditch intake on Waihe‘e River, the Waihe‘e Ditch where water is dropped at the Hopoi Chute to Spreckels Ditch, sealed the Reservoir 27 intake from Waihe‘e Ditch, closed Reservoir 27, and made modifications to the intake and Reservoir 27 ditch.

4. In 2013, WWC repaired structures at the Waihe‘e Ditch intake on Waihe‘e River, the Waihe‘e Ditch at Field 97, the Waihe‘e Ditch at Mā‘alaea, the Spreckels Ditch intake on the Waihe‘e River, and the Reservoir 97 intake ditch.

5. Reservoirs 6, 8, 13, 14, and 29 were also closed.

(Chumbley, WT, 1/7/14, p. 2, l. 15 to p. 3, l. 22 (2014 Mediated Agreement).)
(WWC: FOF 22-28.)

d. In its prehearing filings, WWC reduced its request for system losses from 7.34% to 4.97% of water diverted for delivery to authorized users. (WWC Opening Brief, pp. 1, 7.) (Hui/MTF and OHA: FOF C-261.)

e. WWC's system losses of 4.97% are less than:

1. USDA's Soil and Conservation Service's National Engineering Handbook, which indicates that a carefully managed, manually operated irrigation water delivery system should have losses of 10% or less.

2. The American Water Works Association's information and standards for potable water systems indicate that system losses for such a system should be 10% or less.

3. MDWS's testimony that system losses for open distribution systems are typically 10 to 15%.

(Chumbley, WT, 1/7/14, pp. 3-4; WWC Opening Brief, p. 5.) (WWC: FOF 29-30, 32-33.)

f. 4.97% equates to a system loss of 2.73 mgd. (2014 Mediated Agreement: FOF 62; WWC Opening Brief, p. 5.)

g. System losses could be reduced further by about 400,000 gpd if portions of the ditch that are open were converted to a cement gunite-lined ditch, but at a cost in excess of \$5 million. (Chumbley, Tr., p. 87, l. 15 to p. 88, l. 4.) (WWC: FOF 34.)

a. Waihe'e River

i. Waihe'e River

323. The following applicants divert water directly from Waihe'e River, below the Spreckels Ditch diversion, as shown in the lower right-hand corner of Figure 1.

324. SWUPA 2365N—Diannah Lai Goo

a. Diannah Lai Goo filed a total of five SWUPAs for lands her 'ohana owns mauka and makai in Waihe'e, which receive water directly from Waihe'e River and two kuleana 'auwai—the "Waihe'e Valley North" and the "Waihe'e Valley South" 'auwai: SWUPAs 2231, 2232N, 2233, 2234N, and 2365N. Diannah's daughter April Goo testified in support of all applications. (Goo, WT, January 11, 2016, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-62.)

b. The Goo 'ohana seek a new use water permit for two parcels that would receive water directly from the Waihe'e River: TMK Nos. (2) 3-2-004:008 ("Parcel 8") and (2)

3-2-004:010 (“Parcel 10”). (Goo, WT, January 11, 2016, ¶ 1; SWUPA 2365N at 3, Addendum at 1.) (Hui/MTF and OHA: FOF B-63.)

c. The Goo ‘ohana requests recognition of appurtenant rights for Parcels 8 and 10 of 315,000 gpd and a permit to grow kalo in the same amount, based on 1.05 acres and Reppun’s high estimate of 300,000 gad. (Goo, WT, January 11, 2016, ¶ 5; SWUPA 2365N at 3, Addendum at 2.) (Hui/MTF and OHA: FOF B-64.)

d. The Goo ‘ohana’s maternal side has owned these lands since the time of the Māhele and still possesses the original deeds. (Goo, WT, January 11, 2016, ¶ 2.)

e. The Commission provisionally approved appurtenant rights for LCA 3507:2. (Provisional Order, Attachment C, Revised Exh. 7, p. 1.) (Hui/MTF and OHA: FOF B-69.)

f. Parcels 8 and 10 make up the entirety of LCA 3507:2, confirmed by RP 4114. Parcel 8 is all of ‘āpana 2, mahele 1 and Parcel 10 is all of ‘āpana 3, mahele 2 of LCA 3507. The foreign testimony supporting LCA 3507 states that ‘āpana 2 was a “section of lois.” The LCA map for ‘āpana 2 depicts a pō‘alima separating mahele 1 and mahele 2, and an ‘auwai adjacent to both mahele is further evidence that both parcels were cultivated in lo‘i kalo. (Goo, WT, January 11, 2016, ¶¶ 8-9, 11; Exh. 2365-Goo-1 to -2; SWUPA 2365N Addendum at 1.) (Hui/MTF and OHA: FOF B-68 to B-69.)

325. SWUPA 3617N—Joshua Chavez

a. Joshua Chavez filed a new use SWUPA on July 26, 2012 for TMKs No. (2) 3-2-004:1 (“Parcel 1”) and No. (2) 3-2-004:21 (Parcel 21”), comprised of 21.89 acres and 2.59 acres, respectively, which straddle Waihe‘e River. (SWUPA 3617, p. 3, Table 2; Exh. 3617N-Chavez, p. 1.)

b. Chavez requested 300,000 gpd for lo‘i kalo on 1.5 acres of Parcel 1 and 0.5 acres of Parcel 21, spread across an existing lo‘i and four new lo‘i in Parcel 1, and another new lo‘i that straddled Parcels 1 and 21. (SWUPA 3617, p. 3, Table 2; Exh. 3617N-Chavez, p. 1.)

c. Chavez also requested recognition of appurtenant rights and was provisionally approved by the Commission. (Provisional Order, Attachment C. Revised Exh. 7, p. 2.)

d. However, Chavez provided no further information on his permit request and quantification of his provisionally recognized appurtenant rights and did not participate in the contested case hearing.

326. SWUPA 3470N—John Varel (Emmanuel Lutheran Church)

a. John Varel owns four properties in Waihe'e and Waiehu for which he is seeking permits, three of which he acquired after the SWUPAs were filed and is thus pursuing in place of the original applicants: SWUPAs 2262 and 2263N (Paleka), 2298 and 2299N (Varel), 2593N (Koolau Cattle Co.), and 3470N (Emmanuel Lutheran Church). (Varel, WT, September 12, 2016, ¶¶ 1, 3.) (Hui/MTF and OHA: FOF B-74.)

b. Emmanuel Lutheran Church of Maui filed SWUPA 3470N on February 3, 2012, for TMK No. (2) 3-2-004:005 ("Parcel 5"). (Varel, WT, September 12, 2016, ¶¶ 150, 152, 168.) (Hui/MTF and OHA: FOF B-75 to B-76.)

c. Varel stated that the Emmanuel Lutheran Church incorrectly filed a new use application and actually had an existing use, because lo'i kalo was being grown on the property prior to 2008, although at the time of designation the lo'i were being fallowed (with the 'auwai still flowing on the property) according to best management practice. (Varel, WT, September 12, 2016, ¶ 149.) (Hui/MTF and OHA: FOF B-79.)

d. As submitted by the Church, SWUPA 3470N requested 6,000 gpd for 1 acre of taro using a "flood" irrigation system, which was based on a table of crop water requirements which apparently was not referring to wetland kalo. Also requested was 3,600 gpd for two dwellings, based on a figure of 1,800 gpd for domestic use for each dwelling. (SWUPA 3470N, at 2-3, Addendum at 1.) (Hui/MTF and OHA: FOF B-80.)

e. Varel requests recognition of appurtenant rights of 567,000 gpd for 1.89 acres and a permit for 300,000 gpd to irrigate 1.0 acre of lo'i kalo, both based on Reppun's high estimate of 300,000 gad for taro lo'i. (Varel, WT, September 12, 2016, ¶¶ 158-159.) (Hui/MTF and OHA: FOF B-78.)

f. Varel claims that water to irrigate 1.0 acre was for the amount of land that was being cultivated before and after the time of designation in 2008. (Varel, WT, September 12, 2016, ¶¶ 162-163.) (Hui/MTF and OHA: FOF B-81.)

g. The Commission recognized provisional appurtenant rights for Parcel 5. (Provisional Order, Attachment C, Revised Exh. 7, p. 2.) (Hui/MTF and OHA: FOF B-77.)

h. Parcel 5 is the entirety of LCA 11258, confirmed by RP 5348, and encircles a pō‘alima, which is not part of Parcel 5 and which Varel does not own. The LCA is described as “aina kalo.” This description, coupled with the presence of a pō‘alima inside the kuleana and ancient lo‘i walls, is additional evidence that Parcel 5 was cultivated exclusively in lo‘i kalo. (Varel, WT, September 12, 2016, ¶¶ 153, 155-158; Exhs. 3470-Emmanuel-1 and -2.) (Hui/MTF and OHA: FOF B-77.)

i. Excluding the pō‘alima, Parcel 5 is 1.89 acres. (Varel, WT, September 12, 2016, ¶ 157. (Hui/MTF and OHA: FOF B-78.)

327. SWUPA 2362N—Joseph Alueta

a. Joseph Alueta filed a new use SWUPA on April 23, 2009 for his 3.84-acre parcel TMK No. (2) 3-2-003:001 (“Parcel 1”). (Alueta, WT, January 17, 2016, ¶ 1; SWUPA 2362N at 1, 3.) (Hui/MTF and OHA: FOF B-82.)

b. Alueta requests a permit for the amount of water necessary for hydroelectricity generation, 2.0 acres of lo‘i kalo, and 0.5 acre of diversified agriculture. He plans to divert water from the Waihe‘e River using a pipe, first to generate hydroelectricity before the water flows into his lo‘i kalo. After flowing through the lo‘i, some of the water will then be piped to his other diversified agriculture crops like betelnut, ma‘o (Hawaiian cotton), tobacco, sweet potato, fruit trees, and flowering trees, before flowing back to Waihe‘e River. (Alueta, WT, January 17, 2016, ¶¶ 21-24.) (Hui/MTF and OHA: FOF B-88.)

c. Alueta requests 600,000 gpd for two acres of lo‘i, using Reppun’s high estimate of 300,000 gad. He is not requesting the approximately 1,250 gpd that he estimates for his 0.5 acres of diversified agriculture, because it will be used after flowing through the lo‘i kalo. (Alueta, WT, January 17, 2016, ¶¶ 22-23; Alueta, Tr., July 12, 2016, p. 17, ll. 19-22.) (Hui/MTF and OHA: FOF B-89.)

d. Wailuku Sugar Company reserved the water rights when it sold the property in 1979. Alueta bought the property on July 28, 2003. (SWUPA 2362N, Addendum at 1; Alueta, WT, January 17, 2016, ¶ 1.)

e. Alueta’s 3.84-acre parcel is comprised of a portion of LCA No. 7713:24, and the entirety of three kuleana parcels: LCA Nos. 2412, apana 3; 4405-P, apana 3, and 3770-B, apana 3. There are also ancient lo‘i kalo on his land and an ancient ‘auwai that historically fed them. LCA No. 2412:3 was described as containing 4 lo‘i kalo. LCA No. 4405-P:3 was

described as containing 8 lo‘i kalo. LCA No. 3770-B:3 was described as containing 6 kalo lo‘i. (Alueta, WT, January 17, 2016, ¶¶ 6, 13-15; SWUPA 2362N, Addendum at 1.)

f. The Commission recognized provisional appurtenant rights for Parcel 1 based on LCAs 2412:3 and 3770-B:3, but LCA 4405-P:3 was denied because of no mention of water use, and no documents were provided for LCA 7713:224. (Provisional Order, Attachment C, Revised Exh. 7, p. 1.)

g. Of Alueta’s 3.84-acre parcel, 0.1 acre is covered by LCA No. 2412:3, 0.24 acre is covered by LCA No. 4405-P:3, and 0.06 acre is covered by LCA No. 3770-B:3, for a total of 0.4 acre. (Alueta, WT, January 17, 2016, ¶ 17.)

h. Alueta requests appurtenant rights recognition of 120,000 gpd (0.4 acre x 300,000 gad), based on Reppun’s highest estimate, if his appurtenant rights have not been extinguished. (Alueta, WT, January 17, 2016, ¶ 20.)

ii. Waihe‘e Ditch

328. SWUPA 2298/2299N—John Varel

a. John Varel owns four properties in Waihe‘e and Waiehu for which he is seeking permits, three of which he acquired after the SWUPAs were filed and is thus pursuing in place of the original applicants: SWUPAs 2262 and 2263N (Paleka), 2298 and 2299N (Varel), 2593N (Koolau Cattle Co.), and 3470N (Emmanuel Lutheran Church). (Varel, WT, September 12, 2016, ¶¶ 1, 3.) (Hui/MTF and OHA: FOF B-74.)

b. On April 29, 2009, Varel filed SWUPA 2298 for an estimating existing use of 25,500 gpd and SWUPA 2299N for a new use of 1,474,500 gpd on TMK No. (2) 3-2-001:001 (“Parcel 1”). (*Id.*, ¶ 38.) (Hui/MTF and OHA: FOF B-144.)

c. Parcel 1 is 983.807 acres, of which 474 acres are designated Conservation lands, with Varel farming the remaining 509.807 acres, on which he lives and operates a commercial farm grossing about \$800,000 a year from macadamia nut and fruit trees and bananas and employing a minimum of 25 families consistently. (*Id.*, ¶ 35; Varel, Tr., 9/19/16, p. 134, ll. 1-11, p. 135, ll. 8-9.) (Hui/MTF and OHA: FOF B-146.)

d. After he purchased the property from Wailuku Agribusiness in 2002, he did not agree to the terms of the offer for sale of water to irrigate Parcel 1, so Wailuku Agribusiness cut all the irrigation lines, stripping any water available to the existing macadamia

nut trees sold to Varel. He lost over a thousand trees, and production was reduced by over two-thirds at its lowest point. (Varel, Tr., 9/19/16, p. 134, l. 17 to p. 135, l. 9.)

e. For the past 13 years, Varel has been getting all of his water from leaks in the Waihe'e Ditch System, gradually corralling and redirecting the leaks, installing a drip irrigation system, and allowing the excess water to flow back into the lower Spreckels Ditch. At their peak, each of the three major leaks was 1,000,000 gpd, but a few years ago, WWC attempted repairs, and Varel now receives approximately 72,000 gpd from each leak, for a total of approximately 216,000 gpd. Two of the leaks feed his nursery and fruit trees, and the remaining leak feeds a portion of his macadamia nut orchard, which has no other source of water. Varel estimated the 72,000 gpd from each leak by estimating that three 2-inch pipes run constantly off the leaks, a 2-inch pipe is 50 gallons per minute, and running 24 hours provides about 72,000 gpd per pipe. (*Id.*, ¶ 59; Varel, Tr., 9/19/16, p. 136, ll. 8-13, p. 171, l. 19 to p. 172, l. 1.) (Hui/MTF and OHA: FOF B-147.)

f. The existing use request of 25,500 gpd was for 5 acres of diversified agriculture and fruit trees at 2,500 gad, or 12,500 gpd; 2 acres of a nursery at 5,000 gad, or 10,000 gpd, and 5 households at 600 gpd, or 3,000 gpd. (SWUPA 2298, p. 2, table 1, p. 3, table 2.) (Hui/MTF and OHA: FOF B-146.)

g. The new use request was for 340 acres of existing macadamia trees at 4,400 gad, or 1,496,000 gpd (tabulated as 1,474,500 gpd in the SWUPA), based on the Water Commission's 1992 Hawai'i Water Plan, O'ahu Management Plan, standard of 4,400 gad for macadamia nuts. (SWUPA 2299N, p. 2, table 1, p. 3, table 2.) (Hui/MTF and OHA: FOF B-146.)

h. In his written testimony of September 12, 2016, Varel amended his existing use SWUPA 2298 to include the estimated 1,496,000 gpd for the 340 acres of macadamia trees he was using from the leaks, stating that, on the advice of Commission staff, he had included that amount in new use SWUPA 2299N, but that the narrative in SWUPA 2298 had stated this use. The narrative in SWUPA 2298 states: "For the last five years, I have been getting all of my water from 2 major leaks in the Waihe'e ditch system. Each leak is at a minimum a million gallons a day and more consistently 2 million gallons a day, the flow fluctuates with the adjustment of the amount of water flowing through the Waihe'e Ditch. There are no meters on these leaks and up until I acquired the property, the waters were running freely on my property. I have redirected much of the water to my fields and allowed excess water that I did not use in my

fields, nursery, and diversified ag crops to flow back to the lower ditch (Spreckels). The water diversions have supplied all of the water for 550 acres of ag land since I have acquired the property 6 years ago. My existing needs for crops currently in production are: 1,474,500 gallons for 340 tree acres currently in macadamia nuts (4,400 gallons per acre per day) per the Water Commission's 1992 Hawai'i Water Plan, O'ahu Water Management Plan." (*Id.*, ¶ 58; Varel, Tr., 9/19/16, pp. p.170, l. to p. 171, l. 7; SWUPA 2298, SWUPA-E Addendum, p. 1.) (Hui/MTF and OHA: FOF B-149.)

i. While his request for 2 acres of nursery remain unchanged, his request for 5 acres of diversified agriculture and fruit trees has increased to 15 acres, and households have increased from 5 households to 23 households. (*Id.*, ¶¶ 63-65.)

j. Varel now requests:

1. Existing use: 1,500,000 gpd, based on the Water Commission's 1992 Hawai'i Water Plan, O'ahu Management Plan, standard of 4,400 gad for macadamia nuts.; and

2. New use: 57,300 gpd:

- i. 37,500 gpd: 15 acres of diversified agriculture and fruit trees at Waiāhole's 2,500 gad for diversified agriculture;
- ii. 10,000 gpd: 2 acres of nursery plants at the Commission's 1992 Hawai'i Water Plan's standard of 5,000 gad for foliage plants; and
- iii. 13,800 gpd: 23 houses at 600 per household for Maui County single-family homes, stating that because his farm grosses more than \$800,000 a year, he would be eligible to construct 23 houses for workers, in addition to the two homes his family occupies (which would be a total of 25, not 23 houses).

(*Id.*, ¶¶ 60-68.) (Hui/MTF and OHA: FOF B-150.)

k. With these changes, Varel's existing use and new use requests should actually be:

1. Existing uses: 1,521,500 gpd

- i. 1,496,000 gpd for 340 acres of macadamia trees;
- ii. 12,500 gpd for 5 acres of diversified agriculture and fruit trees;

- iii. 10,000 gpd for 2 acres of nursery plants; and
 - iv. 3,000 gpd for 5 homes.
2. New uses: 37,000 gpd
- i. 25,000 gpd for an additional 10 acres of diversified agriculture and fruit trees;
 - ii. 12,000 gpd for an additional 20 homes.

l. The deed to Parcel 1 contains a reservation of appurtenant rights when it was sold to Varel by Wailuku Agribusiness in 2002. (*Id.*, ¶ 34; Varel, Tr., 9/19/16, p. 13, ll. 11-12, p. 137, ll.10-11.) (Hui/MTF and OHA: FOF B-145.)

m. Parcel 1 received provisional approval of appurtenant rights for one LCA by the Commission, which noted that: 1) LCA 780 referred to part under cultivation and remainder occupied by cattle; 2) LCA 4405-BB:1-4 referred to ‘āpana 1 as a house lot and ‘āpana 2 as 4 mo‘o of kalo, but only a small portion of the LCA was in Parcel 1; 3) LCA 4405-EE:1 was not shown on the map; and 4) LCA 7713:24 had no reference to water use. (Provisional Order, Attachment C, Revised Exh. 7, p. 4.)

n. Varel states that Parcel 1 is composed of portions of LCA 780, confirmed by RP 4551, LCA 7713:24, confirmed by RP 4475, and Government Grant 10562 to Wailuku Sugar Company. (*Id.*, ¶¶ 39-42.)

o. Parcel 1 contains approximately 133.88 acres of LCA 780, described as “partly under cultivation and the remainder occupied by cattle.” Varel assumes an equal division between pasture and lands in diversified agriculture, applies a feed and forage standard of 7,700 gad for the amount of land in pasture land for cattle, and a diversified agriculture standard of 2,500 gad for the lands under cultivation, resulting in his claim that appurtenant rights would be 682,788 gpd for 133.88 acres of Parcel 1. (*Id.*, ¶¶ 46-48.)

p. Parcel 1 contains 833.517 acres of LCA 7713:24, for which Varel states that the land use at the time of the Māhele is difficult to determine because what was in cultivation is not described due to the vast expanse of the award. He states that there is extensive historic irrigation and cultivation of land in Parcel 1 but also that the majority of ancient lo‘i and ‘auwai were destroyed when the land was transformed into commercial agriculture. Judging by

the remaining rock walls and lo‘i, he conservatively estimates that at least 15 acres of LCA 7713:24 within Parcel 1 were in lo‘i kalo at the time of the Māhele, and therefore claims that appurtenant rights for these 15 acres would be 4,500,000 gpd (using Reppun’s high estimate of 300,000 gad). (*Id.*, ¶¶ 49-52.)

q. Parcel 1 contains 16.41 acres of Government Grant 10562, which was 40 acres in size and which consisted of 19.40 acres of sugar cane, 1.10 acres of pasture land, and 19.50 acres of wasteland. Setting aside the small pasture land, Varel claimed half for sugar cane at 6,800 gad, or 55,794 gpd in appurtenant rights. (*Id.*, ¶¶ 53-55.)

r. In total, Varel requested recognition of appurtenant rights in the amount of 5,238,582 gpd. (*Id.*, ¶¶ 38, 56.) (Hui/MTF and OHA: FOF B-144.)

s. However, expert opinion is that only lo‘i kalo were irrigated at the time of the Māhele, and appurtenant rights accrue to the entire LCA, not just to the portion that was using water at the time of the Māhele, *supra*, FOF 153, 170-171.

t. Alternate sources:

1. Potable water:

i. Varel has a temporary groundwater permit for a well drilled down to 290 feet, limited to 3,000 gpd, pending resolution of this contested case hearing. His permit application was contested by both WWC and the County of Maui. His SWUPAs are alternatives to his groundwater application. Everything on his property is solar-powered and he is off the grid completely, and it wouldn’t cost him a whole lot more to pump. (SWUPA 2298, Addendum, p. 2; Varel, Tr., 9/19/16, p. 151, l. 24 to p. 154, l. 10; p. 167, l. 7 to p. 168, l. 1; p. 168, l. 16 to p. 169, l. 11.) (Hui/MTF and OHA: FOF B-151.)

ii. Varel has two domestic water meters: one is a mile and a half from their homes, and the other does not have adequate pressure to make it up to their homes. (SWUPA 2298, Addendum, p. 2.)

2. Non-potable water:

i. Varel intends to recycle domestic effluent for use on their personal gardens but will not generate enough water to irrigate even 2 acres, much less 550 acres of agriculture. (SWUPA 2298, Addendum, p. 2.)

- ii. The County is not providing any new water meters for agricultural use in Waihe‘e. (SWUPA 2298, Addendum, p. 2.)

329. The following SWUPAs are in Waiehu and were previously served by the now-closed North Waiehu Ditch and/or by a kuleana ‘auwai on the Waihe‘e Ditch just below the North Waiehu intake, which is now in disrepair. With the closure of the North Waiehu Ditch, they were to be served by Waihe‘e River water in the Waihe‘e Ditch, which does not get additional water until the ‘Īao-Maniania Ditch with water from Wailuku River. WWC needs an engineering alteration to the Waihe‘e Ditch and has not yet developed an engineering plan to be able to determine if it can take water out of Waihe‘e Ditch at that point. (Chumbley, Tr., 10/14/16, p. 132, l. 12 to p. 133, l. 16.)

330. In addition, SWUPA 2342—Paul Higashino, who is listed under North Waiehu Stream, states that he accessed the same kuleana ‘auwai. (Higashino, WT, 2/3/16, ¶ 19; Higashino, Tr., 7/28/16, p. 187, ll. 1-8.) Water from these sources also previously continued to reservoir 25 and to four other Waiehu properties, SWUPA 2144—Living Waters, SWUPA 2153—Hanusa, SWUPA 2348—Bailie, SWUPA 2182—Chang (Jung), and SWUPA 2593—Koolau Cattle Co. These too are now served only by Waihe‘e Stream from waters continuing down from Waihe‘e Ditch (See Figure 1.)

331. SWUPA 2340—Rudy Fernandez

a. On April 30, 2009, Rudy Fernandez filed an existing use SWUPA for TMK No. (2_ 3-2-018:006 (“Parcel 6”), a 2.1-acre property for which he claimed appurtenant rights and requested existing use of 125,000 gpd for 1 acre of bananas and 0.5 acre of vegetables. (SWUPA 2340, p. 1, p. 2, table 1, p. 4, table 3.)

b. The Commission had granted provisional approval. (Provisional Order, Attachment C, Revised Exh. 7, p. 17.)

c. Fernandez did not submit testimony nor participate in the contested case hearing.

332. SWUPA 2305/2306N—Douglas Myers & Alex Buttaro

a. On April 30, 2009, Douglas Myers and his lessee, Alex Buttaro, filed existing and new use SWUPAs for TMK No. (2) 3-2-018:005 (“Parcel 5”), a 0.585-acre property, for which they requested 1,200 gpd for 0.19 acre of domestic use for two households,

and 111,000 gpd for 0.37 acre of proposed lo‘i kalo for subsistence purposes. (SWUPA 2305, p. 2, table 1, p. 4, table 3, Attachment A, p. 2; SWUPA 2306N, p. 2, table 1, p. 3, table 2.)

b. They stated that appurtenant rights were reserved but did not specify the date of the deed and were granted provisional approval without any notation of a reservation. (Provisional Order, Attachment C, Revised Exh. 7, p. 16.)

c. Myers and Buttaro did not submit written testimony or appear at the contested case hearing.

333. SWUPA 2355—Fred Coffey

a. On April 30, 2009, Fred Coffey filed an existing use SWUPA for TMK No. (2) 3-2-018:003 (“Parcel 3”). (Coffey, WT, 2/8/16, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-861.)

b. Parcel 3 is 0.61 acres. It was slightly enlarged from 0.55 acre to 0.61 acre with the purchase of a remnant parcel of land containing an area of approximately 2,765 square feet, more or less, identified as TMK No. (2) 3-2-017:018. No appurtenant right is being claimed for this parcel. (*Id.*, ¶ 9; Exh. 2355-Coffey-3.)

c. The Commission had given provisional approval, with the notation that water rights were reserved. Coffey stated in his SWUPA that the deed transferring the property reserved the water rights, but at the hearing, he said: “No reservation for the water. Everything is entirely good to go, no problems that way.” The only reference to a reservation in his documents is a description of the property, with the standard notation: “Reservation in favor of the State of Hawaii of all mineral and metallic mines.” (SWUPA 2235, Attachment, p. 1; Coffey, Tr., 7/13/16, p. 98, ll. 20-22; Exh. 2355-Coffey-2; Provisional Order, Attachment C, Revised Exh. 7, p. 17.) (Hui/MTF and OHA: FOF B-862.)

d. Parcel 3 is ‘āpana 2 of LCA 3275-L, confirmed by RP 3230, which was 1.2 acres and consisted of three ‘āpana. Coffey states that the leveled, entirely terraced area, the boundary lines of the LCA and his TMK, and kama‘āina familiar with the area all suggest that all parts of the LCA and his TMK were using water at the time of the Māhele. Parcel 3’s original 0.55 acre is ‘āpana 2, described as either a taro mo‘o or 17 lo‘i; ‘āpana 1 is described twice as a taro mo‘o; and ‘āpana 3 is described as a kula, 18 lo‘i, and 1 kula, or as a taro pasture. (*Id.*, ¶¶ 3-5; Exh. 2355-Coffey-1.)

e. Coffey's documents include drawings from the time of the Māhele that show 'āpana 1 and 2, but not 'āpana 3. Those drawings show 'āpana 1 with a small pō'alima within it, and about half the size of 'āpana 2. (Exh. 2355-Coffey-1.)

f. However, in the documents accompanying his written testimony, Exh. 2355-Coffey-1 contains two pages of English translation following this drawing that describes 'āpana 1 as 0.55 acre, and 'āpana 2 as 2/10 acre. (Exh. 2355-Coffey-1 (attached to written testimony). These descriptions must be inadvertently reversed, and 'āpana 1 must be 0.2 acre, not the 0.55 acre of 'āpana 2. Therefore, of LCA3275-L's 1.2 acres, 'āpana 1 was 0.2 acre, 'āpana 2 was 0.55 acre, and 'āpana 3 was 0.45 acre.

g. As 'āpana 3 was variously described as a kula, 18 lo'i, and 1 kula, or as a taro pasture, half should be ascribed to lo'i kalo, *supra*, FOF 168, so appurtenant rights would accrue to 81 percent, or 0.975 acre of LCA 3275-L's 1.2 acres.

h. Coffey claimed that all of the original 0.55 acre of Parcel 3 should have appurtenant rights, or 165,000 gpd (0.55 acre x 300,000 gad). (*Id.*, ¶ 8.)

i. However, his claim for Parcel 3 should be reduced to 0.446 acre (0.55 acre x 0.81).

j. Coffey also requests a permit for 600 gpd for a yard and garden of a two-family household, having an existing use of 640 gpd based on the 2002 State of Hawai'i Water System Standard for Maui County of 600 gallons per single family home. (*Id.*, ¶¶ 10-11, 13,17.) (Hui/MTF and OHA: FOF B-861, B-863.)

334. SWUPA 2342—Paul Higashino

a. Paul and Jennifer Higashino filed an existing use SWUPA on April 30, 2009, for TMK No. (2) 3-2-016:017 ("Parcel 17"), a 5.75-acre parcel, for which they request recognition of appurtenant rights of 390,192 gpd and an existing use permit for 692,700 gpd. (Higashino, WT, 2/3/16, ¶ 1.) (Hui/MTF and OHA: FOF B-478.)

b. They purchased the land from Wailuku Agribusiness in 2000, and the deed reserved the appurtenant rights. Paul Higashino's grandparents own the property next door and had leased the property he now owns since the 1960s to grow kalo. (*Id.*, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-482.)

c. The Commission granted provisional approval of appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 17.)

d. Their claim of appurtenant rights is based on their 5.75 acres containing the entirety of 5 LCAs and one pō‘alima, which collectively comprise 1.889 acres:

- i. LCA 3440, confirmed by RP 7779, comprising 0.375 acres and described as a section of kalo.
- ii. LCA 5454:2, confirmed by RP 5147, comprising 0.259 acres and described as containing 31 lo‘i.
- iii. LCA 3275M, no RP provided, comprising 0.356 acres, with the foreign testimony describing only lo‘i. In the Provisional Approval hearings, the LCA was 3275I, described as kalo and kula land. However, Higashino shows 3275M as within Parcel 17. (Exh. 2342-Higashino-1.)
- iv. LCA 3274:1, confirmed by RP 5982, comprising 0.805 acres, described as taro pauka, pasture, and a house. In the Provisional Approval hearings, this LCA had been denied for lack of documentation. (Provisional Order, Attachment C, Revised Exh. 7, p. 17.)
- v. LCA 3528:1 confirmed by RP 3229, comprising 0.064 acres and described as being cultivated in lauhala; and
- vi. a pō‘alima of 0.04 acres. There is no documentation other than its being drawn as sandwiched between two parts of LCA 3440. (Exh. 2342-Higashino-1.)

(*Id.*, ¶¶ 8-14.)

- e. The Higashinos’ claim of appurtenant rights for 390,192 gpd consists of:
- i. 389,250 gpd for 1.2975 acres of kalo lo‘i at 300,000 gad;
 - ii. 750 gpd for 0.25 acre of the houselot;
 - iii. 192 gpd for 0.064 acre of lauhala at 3,000 gad; and
 - iv. no claim for 0.2775 acre of pasture.

(*Id.*, ¶¶ 13, 18.)

- f. The Higashinos’ existing use permit request of 692,700 gpd is comprised of:
- i. 1,500 gpd for 0.5 acres of a non-commercial garden (principally bananas) at 3,000 gad; and

- ii. 691,200 gpd for 2 acres of kalo lo‘i (equivalent to 345,600 gad), measured by the 5-gallon bucket method.

(*Id.*, ¶¶ 20-23.)

g. Paul Higashino, who testified, stated that his wife did the measurements and he was not present, but he was sure it was several measurements done over a period of time. 691,200 gpd is equivalent to taking only 0.6 seconds to fill a 5-gallon bucket, and Paul Higashino could not explain how the measurement was done nor how reliable the measurements were. (Higashino, Tr., 7/28/16, p. 186, l. 22 to p. 190, l. 2.)

335. SWUPAs 2290N/3905N—Murray & Carol Smith

a. On January 22, 2014, Murray & Carol Smith filed a new use SWUPA for TMK No. (2) 3-2-017:041 (“Parcel 41”), which they purchased in October 2013 and which was formerly part of TMK No. (2) 3-2-017:018 (“Parcel 18”), a 250-acre property for which Waiehu Aina, LLC (David Singer) had filed SWUPA 2290N on April 27, 2009. (SWUPA 3905N, Addendum, p. 1; SWUPA 2290N.) (Hui/MTF and OHA: FOF B-855.)

b. SWUPA 3905N partially amends SWUPA 2290N and only concerns Parcel 41. (SWUPA 3905N, Addendum, p. 1; Smith, Tr., 9/19/16, p. 58, ll. 4-15, p. 60, ll.3-8.) (Hui/MTF and OHA: FOF B-855.)

c. Parcel 41 is 2.75 acres, for which the Smiths in their new use SWUPA of January 2014 requested 247,350 gpd: 240,000 gpd for 0.8 acre of lo‘i kalo, 6,600 gpd for 1.5 acres of macadamia trees, and 750 gpd for 0.25 acre of domestic uses (the remaining 0.2 acre was for a proposed dwelling and driveway). (SWUPA 3905N, p. 2, table 1; SWUPA 2290N, Addendum, p. 3.)

d. On November 1, 2014, the Smiths leased the land to the Hafokas until October 31, 2019. The Hafokas have planted nearly all of 1.84 acres in row crops: 70 percent dryland taro, 25 percent sweet potato, and 5 percent “other,” with banana and papaya interspersed between. (SWUPA 2290N-Smith-18; Smith, WT, 2/5/16, p. 816.) (Hui/MTF and OHA: FOF B-857.)

e. The Smiths now request 16,700 gpd:

- i. 12,000 gpd for 1.84 acres of row crops.

¹⁶ Smith’s written testimony does not include page numbers, so these findings refer to the page number of the pdf file posted on the Commission’s website.

- ii. 2,200 gpd for 0.5 acre of macadamia trees.
- iii. 1,500 gpd for domestic use on 0.42 acre.

(*Id.*; Exh. 2290-Smith-20.)

f. Prior to leasing to the Hafokas, the Smiths had installed a water line—approximately one-quarter of a mile long—to transport potable County water to their property. Hafoka uses the minimum of water to keep the crops watered but finds the cost prohibitive to water the crops the way they should be, and therefore Smith requests the 16,700 gpd which he estimates would be sufficient. (*Id.*; Smith, Tr., 9/19/16, p. 48, l. 22 to p. 49, l. 1.) (Hui/MTF and OHA: FOF B-857, B-859.)

g. The quitclaim deed that conveyed Parcel 18 (which included Parcel 41) to Waiehu Aina, LLC in 2000 reserved water rights to Wailuku Agriculture. (*Id.*, p.5; Exh. 2290N-Smith-03.) (Hui/MTF and OHA: FOF B-856.)

h. The Commission had granted provisional approval. (Provisional Order, Attachment C, Revised Exh. 7, p. 16.)

i. Parcel 41 is the entirety of LCA 3431, confirmed by RP 6100, described as “kale and kula lands joined with a house lot in one piece,” and with 61 lo‘i. The LCA is a long narrow piece of land, with a protrusion—the house lot—about one-fifth down from the upper end. The upper end is bordered by kula, and the lower, larger end is bordered by pō‘alima on one side and pō‘alima and kula on the bottom side. The upper section is about 0.71 acre, the house lot about 0.24 acre, and the bottom section about 1.8 acre. (*Id.*, pp. 6-7; Exhibit 2290N-Smith-7A.)

j. The Smiths request recognition of appurtenant rights of 540,000 gpd for 1.8 of Parcel 41’s 2.75 acres, based on Reppun’s high estimate of 300,000 gad. (*Id.*, p.7.) (Hui/MTF and OHA: FOF B-856.)

336. SWUPAs 2326/2327N—Lester Nakama (Ciacci)

a. Mary Ciacci and Lester Nakama filed existing and new use SWUPAs for TMKs No. (2) 3-2-018:021 (“Parcel 21”) and No. (2) 3-2-018:044 (“Parcel 44”) on April 30, 2009. Nakama subsequently purchased Parcel 21 from Ciacci and is no longer requesting water for Parcel 44, which he no longer owns. (Nakama, WT, 2/3/16, ¶¶ 114-115.) (Hui/MTF and OHA: FOF B-488.)

b. Parcel 21 is 1.101 acres and is the entirety of LCA 3448:2, confirmed by RP 6124. Provisional approval of appurtenant rights had been granted. (*Id.*, ¶¶ 122-123; Provisional Order, Attachment C, Revised Exh. 7, p. 16.) (Hui/MTF and OHA: FOF B-490, B-491.)

c. LCA 3448 is described as “one piece of kalo and kula land.” Based on the presence of ancient rock walls, Nakama estimates that 1.0 acre of the 1.101 acres was in kalo cultivation. (*Id.*, ¶¶ 122-123.) (Hui/MTF and OHA: FOF B-491, B-492.)

d. Nakama requests appurtenant rights of 300,000 gpd (1.0 acre x 300,000 gad) and a permit for 330,000 gpd (1.1 acre x 300,000 gad), of which the existing use was 153,600 gpd. (*Id.*, ¶¶ 118, 125.) (Hui/MTF and OHA: FOF B-489, B-492.)

e. Based on the 5-gallon bucket method and measuring at two intakes five times and averaging 4.5 and 3.75 seconds, respectively, Nakama estimates that he used 153,600 gpd to irrigate 1.1 acres (*Id.*, ¶ 127; SWUPA 2326, Attachment 1, p. 2.)

f. For the past six years, because North Waiehu ‘auwai has been in disrepair, Parcel 21 has been totally dry. (Nakama, Tr., 9/19/16, p. 100, l. 15 to p. 101, l. 8, p. 115, ll. 12-22.)

337. SWUPAs 2288/2289N—Donnalee & David Singer

a. On April 28, 2009, Donnalee and David Singer filed existing and new use SWUPAs for TMKs No. (2) 3-2-018:009 (“Parcel 9”), No. (2) 3-2-018:014 (“Parcel 14”), No. (2) 3-2-018:015 (“Parcel 15”), No. (2) 3-2-018:017 (“Parcel 17”), and No. (2) 3-2-018:034 (“Parcel 34”). (SWUPA 2288, p. 2, table 1, p. 4, table 3; SWUPA 2289N, p. 3, table 2.)

b. Because the existing use of water as of April 30, 2009 was severely limited to the kuleana lands used to cultivate taro, the Singers submitted both existing and new use applications for the same acreage that they had had in lo‘i kalo, requesting one-fourth in their existing use SWUPA 2288, and three-quarters in their new use SWUPA 2289N. (unlabeled addendum at the end of SWUPA 2289N; SWUPA 2288, Attachment A, p. 3; SWUPA 2289N, Attachment A, p. 3.)

c. Parcel 9 is 1.47 acre, on which they have 1.20 acres of lo‘i kalo. Parcel 14 is 0.35 acre, all in lo‘i kalo. Parcel 15 is 0.7 acre, all in lo‘i kalo. Parcel 17 is 0.65 acre, all in lo‘i kalo. Parcel 34 is 2.94 acre, of which 2.40 acre is lo‘i kalo. (SWUPA 2288, p. 4, table 3; SWUPA 2289N, p. 3, table 2.)

d. The Singers requested 430,626 gpd under SWUPA 2288 and 1,291,874 under SWUPA 2289N, for a total of 1,727,000 gpd to 1,756,800 gpd for 5.30 acres of lo‘i kalo, or 325,850 gad to 331,470 gad. (SWUPA 2288, p. 3, table 2; SWUPA 2289N, p.2, table 1.)

e. The Singers had claimed appurtenant rights and been granted provisional recognition for all five parcels without any mention of any reservations. (Provisional Order, Attachment C, Revised Exh. 7, p. 16.)

f. The Singers did not submit written testimony nor participate in the contested case hearing.

338. SWUPAs 2328/2329N—Lester Nakama

a. Lester Nakama filed existing and new use SWUPAs for TMK No. (2) 3-2-018:015 (“Parcel 15”) on April 30, 2009, for which he requests recognition of appurtenant rights of 210,000 gpd and a permit for 210,000 gpd (based on Reppun’s high estimate for lo‘i kalo of 300,000 gad), of which the existing use was 122,880 gpd (measured by the 5-gallon bucket method). (Nakama, WT, 2/3/16, ¶¶ 136, 139, 144-145.) (Hui/MTF and OHA: FOF B-496.)

b. For the past six years, because North Waiehu ‘auwai has been in disrepair, Parcel 15 has been totally dry. (Nakama, Tr., 9/19/16, p. 100, l. 15 to p. 101, l. 8, p. 115, ll. 12-22.)

c. Parcel 15 is 0.7 acre, all of which Nakama claims was a pō‘alima at the time of the Māhele, stating that he has attached several documents, including the County tax map for TMK No. 3-2-018:015, which shows the word “poalima” in its center. He does not identify any LCA associated with Parcel 15. Moreover, in his testimony, Nakama submitted only one, not several, documents—a map that does not match his description, does not identify his TMK, and shows only various LCAs, none of which Nakama has identified as contained in Parcel 15. (*Id.*, ¶¶ 140-143; 2328-Nakama-1-p. 1.)

d. In contrast, in the original new use SWUPA 2328, there is a TMK Map with Parcel 15 outlined and with the word “poalima” in it. It crosses four LCAs and is not identified with a separate LCA number. (SWUPA 2328, Exhibit 2A.)

e. The Commission had granted provisional recognition, with the notation that TMK No. 3-2-018:015 was a pō‘alima. (Provisional Order, Attachment C, Revised Exh. 7, p. 16.) (Hui/MTF and OHA: FOF B-498.)

339. SWUPAs 2330/2331N—Peter Lee & Lester Nakama

a. Peter Lee and Lester Nakama filed existing and new use SWUPAs on April 30, 2009, for TMK No. (2) 3-2-018:040 (“Parcel 40”), requesting recognition of appurtenant rights for 319,800 gpd and a permit for 319,800 gpd, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo, with an existing use of 62,000 gpd, measured by the 5-gallon bucket method. (Nakama, WT, 2/3/16, ¶¶ 156, 159, 171, 174.) (Hui/MTF and OHA: FOF B-503, B-504, B-510, B-511.)

- b. Parcel 40 is 2.132 acres and mainly comprised of three LCAs:
 - i. all but a sliver of LCA 11256, confirmed by RP 7248, described as “aina kalo”;
 - ii. a portion of LCA 2475:4, confirmed by RP 6528, with “13 loi”; and
 - iii. a portion of the konohiki award to Lunalilo, LCA 8559:20:2 including a pō‘alima which falls within Parcel 40.

(*Id.*, ¶¶ 160, 164-166, Exh. 2330-Lee-1, -2, -3.) (Hui/MTF and OHA: FOF B-506.)

c. The Commission had provisionally approved appurtenant rights, based on LCAs 11256, described as ‘āina kalo, and 2475:3, described as containing 1 lo‘i, and not 2475:4, which Nakama describes as containing 13 lo‘i. Only a small sliver of LCA 3450.2 is contained in Parcel 40, for which no documentation was provided. LCA 8559:20:2 was not mentioned in the Provisional Order. (Provisional Order, Attachment C, Revised Exh. 7, p. 16.) (Hui/MTF and OHA: FOF B-506.)

d. Nakama states that although the TMK map shows LCA 2475:3, the shape of the drawn parcel map matches ‘āpana 4. (*Id.*, ¶ 165.)

e. Nakama states that the presence of ancient lo‘i walls on approximately half of Parcel 40, the exclusive references to kalo in LCAs 11256 and 2475:4, and the presence of a pō‘alima within Parcel 40 support a finding that the remaining portion of Parcel 40 falling under the Lunalilo grant was also lo‘i land. (*Id.*, ¶¶ 164-166.) (Hui/MTF and OHA: FOF B-507.)

f. The overlay of LCAs 11256 and 2475:4 over the map of Parcel 40 is slightly larger than half of Parcel 40. (Exh. 2330-Lee-3-p. 1.)

g. He requests appurtenant rights to 1.066 acres, or half of Parcel 40’s 2.132 acres. (*Id.*, ¶ 168.)

h. His existing use of 62,000 gpd was used to irrigate 1.066 acres of lo‘i kalo, and he requests 319,800, the same amount of his appurtenant rights request, to irrigate the same acreage. (*Id.*, ¶¶ 172-174.) (Hui/MTF and OHA: FOF B-510, B-511.)

iii. Spreckels Ditch

a. North Waihe‘e ‘auwai

340. The following SWUPAs receive water from the Spreckels Ditch via the North Waihe‘e ‘auwai. *See* Figure 1.

341. SWUPAs 2233/2234N—Diannah Goo

a. Diannah Lai Goo filed for existing and new use SWUPAs on April 23, 2009 for TMK No. (2) 3-2-004:007 (“Parcel 7”). This is one of the mauka parcels the Goo ‘ohana owns; two other mauka parcels are addressed under SWUPA 2365N, and a number of makai parcels are addressed under SWUPAs 2231/2232N. (Goo, WT, 1/11/16, ¶ 1; SWUPA 2233 at 4; SWUPA 2234N at 3.) (Hui/MTF and OHA: FOF B-158.)

b. Parcel 7 is 0.724 acre, on which they estimate they were cultivating lo‘i on 0.181 acre on April 30, 2008. (Goo, WT, 1/11/16, ¶¶ 19, 34; SWUPA 2233 at 4; SWUPA 2234N at 3.) (Hui/MTF and OHA: FOF B-163, B-166.)

c. They request recognition of appurtenant rights for all of Parcel 7, existing use for 0.181 acre, and new use for the remainder of Parcel 7, or 0.543 acre. (*Id.*, ¶¶ 28, 34-35; SWUPA 2233 at 2; SWUPA 2234N, Addendum at 2.) (Hui/MTF and OHA: FOF B-163, B-166-167.)

d. Provisional recognition was denied without prejudice for Parcel 7. The Goos believe Parcel 7 was a pō‘alima of LCA 7713:24 to Victoria Kamāmalu and state that there are ancient lo‘i kalo terraces throughout the entire parcel, which they have used to grow kalo, and submitted photographs depicting these ancient lo‘i kalo terraces. But provisional recognition had been denied, with the following notation on LCA 7713:24: “No ref. to water use. Per attorney, property is on bank of Waihe‘e River. Applicant states preexisting loi terraces have been restored.” (Provisional Order, Attachment C, Revised Exh. 7, p. 5; Emoto & Ellis, WT, 11/25/15, ¶ 4; *Id.*, ¶¶ 17, Exh. 2233-Goo-1.)

e. The Goos requested appurtenant rights for Parcel 7’s 0.724 acres of 217,200 gpd, existing use for 0.181 acres of 54,300 gpd, and new use for the remaining 0.543 acre of 162,900 gpd, all based on Reppun’s high estimate of 300,000 gad. (*Id.*, ¶¶ 28, 34-35;

SWUPA 2233 at 2; SWUPA 2234N, Addendum at 2.) (Hui/MTF and OHA: FOF B-163, B-166-167.)

342. SWUPA 2227—Richard Emoto & Roy Ellis

a. Richard Emoto and Roy Ellis filed existing use SWUPA 2227 on April 23, 2009, for TMK Nos. (2) 3-2-004:011 (“Parcel 11”) and (2) 3-2-004:012 (“Parcel 12”), which Emoto owns and his business partner, Ellis, has lived on for over 20 years. (Emoto & Ellis, WT, 11/25/15, ¶ 1.)

b. Parcel 11 is 0.8 acres and is the entirety of LCA 4405P:1, confirmed by RPs 4120 and 6149; and Parcel 12 is 0.045 acre and situated within Parcel 11 and is a pō‘alima of the award to Victoria Kamāmalu, LCA 7713:24. (*Id.*, ¶¶ 4-9.) (Hui/MTF and OHA: FOF B-171-173.)

c. LCA 4405P labels ‘āpana 1 as “aina kalo,” and the foreign testimony supporting the award describes ‘āpana 1 as containing “20 patches.” Emoto and Ellis claim Parcel 12 is a pō‘alima. The Commission provisionally approved appurtenant rights for Parcel 11, but no documents were submitted for Parcel 12. (*Id.*, ¶¶ 4-9; Provisional Order, Attachment C, Revised Exh. 7, p. 5.) (Hui/MTF and OHA: FOF B-171-172.)

d. They request recognition of appurtenant rights for Parcels 11 and 12 in the amount of 253,500 gpd, based on Reppun’s high estimate (0.845 acre x 300,000 gad) and a permit for 432,000 gpd, which they claim was their current use as of April 30, 2008, to operate a water wheel that generates electricity. (*Id.*, ¶¶ 11-13; SWUPA 2227 Att. A at 1, Att. D (photos).) (Hui/MTF and OHA: FOF B-173-174.)

e. However, the 432,000 gpd to operate the water wheel is not a measured use, but their estimate of the amount of water needed to generate enough electricity to power the home, supplemented with solar panels. They calculate this by stating that it would take 300 gallons per minute (300 gallons per minute x 1440 minutes per day = 432,000 gpd). (*Id.*, ¶ 14.)

f. They state that 432,000 gpd “was the amount of water in use for these purposes on April 30, 2008,” but they also state that “(w)e are currently using water from an existing ‘auwai, although water is not available consistently and in sufficient amounts to support the existing uses on our system, including our own uses.” (*Id.*, ¶ 14; SWUPA 2227, Att. A, p. 3.)

g. Water enters their land through a pipe that directs the flow through the water wheel. From there, some of the water is used for domestic purposes such as showering and

washing dishes and clothes, and the rest flows through lo‘i kalo through an open ditch, and some water is taken by pipe and sprinkler system to water the lawn and non-commercial garden. *Id.*, ¶ 13; SWUPA 2227, Att. A, p. 2.)

h. Emoto and Ellis estimate that of the 432,000 gpd they claim is run through the water wheel, they use about 1,200 gpd for domestic uses (0.4 acres x 3,000 gad, based on 2002 State of Hawai‘i Water System Standard for Maui County of 3,000 gad per single family home), and return about 430,800 gpd to the ‘auwai, less a small amount that seeps into the kalo lo‘i. (SWUPA 2227, Att. A, p. 2.)

i. They estimate that their existing use for 0.4 acres of kalo lo‘i is 120,000 gpd, based on Reppun’s high estimate (0.4 acre x 300,000 gad). (SWUPA 2227, Att. A, p. 2.)

j. However, they also state that approximately 430,800 gpd of the 432,000 gpd that runs through their water wheel enters the 0.4 acres of kalo lo‘i before being returned to the ‘auwai.

343. SWUPAs 2228/2229N—Stanley Faustino & Kanealoha Lovato-Rodrigues

a. Stanley Faustino filed SWUPAs for existing and new uses on April 23, 2009 for TMK No. (2) 3-2-004:013 (“Parcel 13”) and later requested that his grandson be added to the SWUPAs. (Faustino, WT, 2/29/16, ¶1; SWUPA 2228 at 4; SWUPA 2229N at 3.) (Hui/MTF and OHA: FOF B-176.)

b. Faustino/Lovato-Rodrigues request recognition of 210,000 gpd of appurtenant rights and a permit for 201,000 gpd, of which 21,000 gpd was the existing use, all, including the existing use, based on Reppun’s high estimate of 300,000 gpd. (Faustino, WT 2/29/16, ¶¶ 13-14; SWUPA 2228 at 2; SWUPA 2229N at 2, Att. A at 2.) (Hui/MTF and OHA: FOF B-177.)

c. Parcel 13 is the entirety of LCA 4405X, confirmed by RP 5319. LCA 4405X was described as “(o)ne taro parcel.” The Commission granted provisional approval for Parcel 13. (Faustino, WT, 2/29/16, ¶ 5; Exh. 2228—Faustino—2; Faustino, WT, 9/7/07, ¶ 1 (MA06-01); Exh.A-33 (9/7/07) (Mao6-01); Provisional Order, Attachment C, Revised Exh. 7, p. 5.) (Hui/MTF and OHA: FOF B-181.)

d. Parcel 13 is 0.7 acre. They request appurtenant rights of 210,000 gpd, using Reppun’s high estimate of 300,000 gad. (Faustino, WT, 2/29/16, ¶¶ 5, 10-11.) (Hui/MTF and OHA: FOF B-182.)

e. On April 8, 2008, the Faustinos were cultivating 0.07 acre in lo‘i. They estimate water use as 21,000 gpd, using Reppun’s high estimate of 300,000 gad. (Faustino, WT, 2/29/16, ¶ 13; SWUPA 2228 at 3-4, Att. A at 2, Exh. B.) (Hui/MTF and OHA: FOF B-184.)

f. They request an additional 180,000 gpd to restore an additional 0.6 acre, using Reppun’s high estimate, for a total of 201,000 gpd (0.67 acre x 300,000 gad). (Faustino, WT, 2/29/16, ¶ 14; SWUPA 2229N R 2-3, Att. A at 2.) (Hui/MTF and OHA: FOF B-185-186.)

344. SWUPAs 2269/2270N—Michael Rodrigues

a. On April 23, 2009, Michael Rodrigues filed existing use SWUPAs for TMKs No. (2) 3-2-004:015 (“Parcel 15”), No. (2) 3-2-004:016 (“Parcel 16”), and No. (2) 3-2-004:017 (“Parcel 17”), and a new use SWUPA for Parcel 17. Michael Rodrigues testified for Parcels 15 and 17, and Miki‘ala Pua‘a-Freitas, testified on his behalf for Parcel 16 and also for SWUPA 2364N, filed by her father. (SWUPAs 2269/2270N; Rodrigues, WT, 1/29/16, ¶ 1; Pua‘a-Freitas, WT, 1/29/16, ¶ 1.)

b. Pua‘a-Freitas’s grandpa was born in the 1920’s, and her great grandpa had started cultivating kalo on Parcel 16. (Pua‘a-Freitas, Tr., 7/12/16, p. 49, ll. 4-21.)

c. Parcel 15 is 0.15 acre, Parcel 16 is 0.33 acre, and Parcel 17 is 1.25 acres, for which Rodrigues requests recognition of appurtenant rights of 519,000 gpd and a permit for 780,245 gpd, of which 474,000 gpd was the estimated existing use. (*Id.*, ¶ 3; Pua‘a-Freitas, WT, 1/29/16, ¶¶ 1, 16-17, 29.)

d. Existing use of 474,000 gpd was estimated by the 5-gallon bucket method and consisted of all 0.15 acre of Parcel 15 for lo‘i kalo, all 0.33 acre of Parcel 16 for lo‘i kalo, and for Parcel 17’s 1.25 acres, 0.4 acre of lo‘i kalo and 0.4 acre of diversified agriculture. (SWUPA 2269, p. 2, table 1, p. 4, table 3; Pua‘a-Freitas, WT, 1/29/16, ¶ 29.)

e. By his 5-gallon bucket measurements, he was using 472,800 gpd on 0.88 acre of lo‘i across Parcels 15, 16, and 17, or 537,273 gad, which he believes he needs to grow healthy kalo, and 1,200 gpd for diversified agriculture on 0.4 acre. (*Id.*, ¶¶ 16-18.)

f. The new use request is for 400,000 gpd to run a water wheel to generate hydroelectricity, like his neighbor, Roy Ellis, which will include an estimated 214,910 gpd, equivalent to 537,273 gad, for an additional 0.4 acre of lo‘i kalo on Parcel 17, because the 400,000 gpd would run through the 0.4 acre of new lo‘i kalo. (*Id.*, ¶ 19; SWUPA 2270N, p. 2, table 1, Attachment, p. 2.)

g. Parcel 15's 0.15 acre is wholly comprised of LCA 4405-R:2, confirmed by RP 6459, refer to pō'alima as boundary and described as containing eight lo'i. The Commission had granted provisional recognition. (*Id.*, ¶¶ 4, 8; Provisional Order, Attachment C, Revised Exh. 7, p. 6.)

h. Pua'a-Freitas states that Parcel 16's 0.33 acre is all of a pō'alima of LCA 7713:24 to Victoria Kamāmalu. The Commission had granted provisional recognition, but referenced LCA 4405-S, which wholly comprises Parcel 17, *infra*. (Pua'a-Freitas, WT, 1/29/16, ¶¶ 6, 13; Provisional Order, Attachment C, Revised Exh. 7, p. 6.)

i. Parcel 17's 1.25 acres is wholly comprised of LCA 4405-S, confirmed by RP 2345, described as kalo, kula, and 3 pō'alima in it, of which Rodrigues states the majority must have been in kalo, based on the existence of ancient rock walls throughout much of the parcel. The Commission had granted provisional recognition. (*Id.*, ¶¶ 4, 9; Provisional Order, Attachment C, Revised Exh. 7, p. 6.)

j. Rodrigues claimed appurtenant rights for all of the three parcels, or 1.73 acres, for 519,000 gpd, using Reppun's high estimate of 300,000 gad for lo'i kalo (1.73 acre x 300,000 gad). (*Id.*, ¶ 10; Pua'a-Freitas, WT, 1/29/16, ¶ 17.)

k. The acreage qualifying for appurtenant rights is 1.065 acres out of 1.73 acres:

1. Parcel 15:0.15 acre.
2. Parcel 16:0.00 acre
3. Parcel 17:0.75 acre, or 60 percent of 1.25 acre, or a "majority" of unknown percentage.

345. SWUPAs 2309/2310N—Alfred Ayers & William Freitas

a. On April 30, 2009, Alfred Ayers and his Lessee, William Freitas, filed existing and new use SWUPAs for TMKs No. (2) 3-2-003:010 ("Parcel 10") and No. (2) 3-2-003:011 ("Parcel 11"), claiming an existing use for an estimated 69,000 gpd for 0.23 acre of lo'i kalo, and a new use for an estimated 524,400 gpd for an additional 1.74 acres of lo'i kalo and 0.8 acre of two homes and their yards and gardens. They used Reppun's high estimate of 300,000 gpd for lo'i kalo and Maui County's standard of 3,000 gad for domestic agriculture. (SWUPA 2309, p. 2, table 1, p. 4, table 3; SWUPA 2310N, p. 2, table 1, p. 3, table 2, Addendum, p. 2.)

b. Parcel 10 is 1.547 acres, for which existing use was on 0.11 acre and proposed new uses are on 1.26 acres. Parcel 11 is 2.5 acres, for which existing use was on 0.12

acre, and proposed new uses are on 1.28 acres. (SWUPA 2309, p. 4, table 3; SWUPA 2310N, p. 3, table 2.)

c. Ayers and Freitas had claimed appurtenant rights and were granted provisional approval for both parcels. Parcel 10 is derived from LCA 4405Q:3, confirmed by RP 5331, and described as 6 lo‘i kalo and a house lot or as 6 patches, pasture, and house. Parcel 11 is derived from LCA 4405R:1, confirmed by RP 6459, and described as Ili of Waipae with two pō‘alima in it and a pō‘alima as boundary. (SWUPA 2309, Addendum, pp. 13, 18; SWUPA-2310N, Addendum, pp. 15, 20; Provisional Order, Attachment C, Revised Exh. 7, p. 6.)

d. Ayers and Freitas did not submit written testimony and did not participate in the contested case hearing.

346. SWUPA 2283—Lorin Pang

a. Lorin Pang filed a SWUPA for existing use on April 24, 2009 for TMK No. (2) 3-2-003:016 (“Parcel 16”), consisting of 1.78 acres. (Pang, WT, 1/24/15, ¶¶ 1, 15.)

b. He requests an existing use of 10,800 gpd for 1.5 acres of a non-commercial garden and fruit trees, plus an additional 0.1 acre of fishponds. For the 1.5 acres, he pumps approximately 5,400 gpd using a 1800 gph pump for a total of three hours per day. He also pumps approximately 5,400 gpd using the same pump, for a total of three hours a day to maintain and flush his fishponds to prevent mosquito-breeding on the 0.1 acre. (*Id.*, ¶¶ 19-21.) (Hui/MTF and OHA: FOF 212.)

c. On the other hand, in his SWUPA 2283, Pang listed only 0.76 acre of fruit trees, and only 0.02 acre of fishponds:

1. mango: 0.25 acres;
2. avocado: 0.10 acres;
3. coconut: 0.3 acres;
4. banana: 0.1 acre;
5. watercress: 0.01 acre; and
6. fishpond: 0.02 acre.

(SWUPA 2283—Lorin Pang, Table 1.)

d. In SWUPA 2283, Pang also stated that he needed constant flow to aerate his ponds, in which he has ‘ōpae, guppies, and swordtails. (SWUPA 2283—Lorin Pang, p 5.)

e. For the non-commercial garden and fruit trees, 5,400 gpd over 1.5 acres is 3,600 gad, and over 0.76 acre, it is more than 7,100 gpd. For the fishponds, 5,400 gpd for 0.1 acre of fishponds is 54,000 gad, and over 0.02 acre, it is 270,000 gpd.

f. Pictures submitted with SWUPA 2283 show grass with scattered trees and several small molded plastic ponds. (SWUPA 2283.)

g. Pang states that he believes his deed contains a reservation of appurtenant rights but did not state when that reservation might have taken place nor provide documentation of the reservation. (*Id.*, ¶ 2.) (Hui/MTF and OHA: FOF 211.)

h. Pang provided no documents during the provisional recognition process. Nevertheless, he now provided documentation of appurtenant rights in the event a legal determination is made that his right was not extinguished, claiming that approximately 1.42 of his 1.78 acres had appurtenant rights, or 426,000 gpd, using Reppun's high estimate of 300,000 gad. (Provisional Order, Attachment C, Revised Exh. 7, p. 6; *Id.*, ¶¶ 4-14, 16-18.)

i. Parcel 16 is comprised of: 1) the entirety of LCA 2412:1, confirmed by RP 6147; 2) approximately one-half of two other LCAs, 4405P:2 & 4, confirmed by RP 6149, and 4405Q:1 confirmed by RP 5331; and 3) portions of two pō'alima within LCA 7713:24 to Victoria Kamāmalu, confirmed by RP 4475. (*Id.*, ¶ 4.)

j. LCA 2412:1 is described as consisting of eight lo'i. (*Id.*, ¶ 10; Exh. 2283-Pang-1.)

k. LCA 4405P:2 is described as consisting of twenty lo'i and one kula, and LCA4405P:4 as consisting of three lo'i. (*Id.*, ¶ 11; Exh. 2283-Pang-2.)

l. LCA 4405Q:1 is described as consisting of two pō'alima. (*Id.*, ¶ 13; Exh. 2283-Pang-3.)

m. A pō'alima of LCA 7713:24 to Victoria Kamāmalu is within Parcel 16. (*Id.*, ¶¶ 9, 14; Exh. 2283-Pang-5.)

n. Pang claims that approximately 80 percent of Parcel 16's 1.78 acres, or 1.42 acres, was in lo'i kalo at the time of the Māhele, based on the existence of ancient lo'i kalo walls, the slope of the land, and the existence of pō'alima on the property. (*Id.*, ¶ 16.)

o. Using Reppun's high estimate of 300,000 gad for lo'i kalo, Pang estimates his appurtenant rights at 426,000 gpd (1.42 acres x 300,000 gad). (*Id.*, ¶¶ 17-18.)

p. On the OHA screen shot depicting the LCAs overlaid on Parcel 16, the approximate percentages of Parcel 16 are as follows: 1) LCA 2412:1: 10 percent; 2) LCA 4405P:2 & 4: 30 percent; 3) LCA 4405Q:1: 45 percent; and 4) two, not one, pō‘alima of LCA 7713:24: 15 percent. (Exh. 2283-Pang-5.)

q. Therefore, the approximate acres of Parcel 16’s 1.78 acres attributable to these LCAs are:

LCA 2412:1:0.178 acres (0.10 x 1.78 acres)

LCA 4405P:2 & 4:0.534 acres (0.30 x 1.78 acres)

LCA 4405Q:1: 0.801 acres (0.45 x 1.78 acres)

LCA 7713:24:0.267 acres (0.15 x 1.78 acres)

r. The approximate acres in lo‘i kalo at the Māhele are:

LCA 2412:1 - 0.178 acres (described as containing 8 lo‘i).

LCA 4405P:2 & 4 - 0.481 acres (LCA 4405P:2 is described as consisting of twenty lo‘i and one kula, and LCA4405P:4 as consisting of three lo‘i. No apportionment between the two ‘āpana is provided, so it will be assumed that approximately 90 percent of the two ‘āpana were in kalo lo‘i).

LCA 4405:1 - 0.801 acres (described as consisting of two pō‘alima)

LCA 7713:24- 0.000 acres (no information on size or other contents)

Total: 1.46 acres

s. The estimate of 1.46 acres is close to Pang’s estimate of 1.42 acres, so his estimate is accepted.

347. SWUPAs 2254/2255N—David Lengkeek

a. On April 23, 2009, David and Katherine Lengkeek filed for existing and new use SWUPAs for TMK No. (2) 3-2-003:019 (“Parcel 19”) for seepage from the North Waihe‘e kuleana ‘auwai onto their 0.501-acre property. (SWUPA 2254, p. 4, table 3; Attachments p. 5; SWUPA 2255N, p. 3, table 2.)

b. They proposed to increase their existing 0.084-acre garden to 0.418 acre, with an estimated use of 1,254 gad, using Maui County’s standard of 3,000 gad (0.418 acre x 3,000 gad). (SWUPA 2255N, Attachments, p. 5).

c. The Lengkeeks did not claim appurtenant rights nor provide documents during the provisional recognition process. (SWUPA 2254, p. 1; SWUPA 2255N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 6.)

d. The Lengkeeks provided no further information on their permit requests and did not participate in the contested hearing.

348. SWUPAs 2322/2323N—Robert Barrett (Aloha Poi)

a. Robert Barrett and Lester Nakama filed existing and new use SWUPAs for TMK Nos. (2) 3-2-003:023 (“Parcel 23”) and (2) 3-2-003:024 (“Parcel 24”) on April 30, 2009, which Aloha Poi has leased from the Barrett ‘ohana since the 1940s. (Nakama, WT, 2/3/16, ¶¶ 76, 78; SWUPA 2322 at 3-4 and Attachment 1 at 2; SWUPA 2323N at 2-3 and Attachment 1 at 2.) (Hui/MTF and OHA: FOF B-213, B-214.)

b. Parcel 23 is 0.045 acre, and Parcel 24 is 3.08 acres, for a total of 3.125 acres. (*Id.*, ¶100.) (Hui/MTF and OHA: FOF B-221.)

c. Using the bucket method, Nakama estimated that 72,000 gpd was the existing use to cultivate 1.045 acre of lo‘i, which, because of insufficient water, was less than was historically cultivated over the entire 3.125 acres. (*Id.*, ¶¶ 104-105; SWUPA 2322 Attachment 1 at 2; SWUPA 2323N Attachment 1 at 2.) (Hui/MTF and OHA: FOF B-222.)

d. Parcel 23 is the entirety of LCA 3701, ‘āpana 3, mahele 1, confirmed by RP 5983 and referred to as ‘āpana 2 in the native testimony in support of the award. The native testimony states this land consisted of six lo‘i kalo without reference any other uses. (*Id.*, ¶¶ 82, 90; Exh. 2322-Barrett-1.) (Hui/MTF and OHA: FOF B-218.)

e. Parcel 24 is comprised of several LCAs: the entirety of LCA 4277:1, confirmed by RP 5988; the entirety of LCA 4416:1.1, confirmed by RP 4112; a large portion of LCA 4405E, confirmed by RP 5274; and the entirety of LCA 4405F, confirmed by RP 4089. Parcel 24 also contains six pō‘alima of the konohiki award to Kamāmalu, LCA 7713:24. The records supporting these four LCAs describe them as lo‘i kalo lands, without referencing any other use. (*Id.*, ¶ 81, 83-87, 91-97; Exh. 2322-Barrett-2 to -7.) (Hui/MTF and OHA: FOF B-219 to B220.)

f. The Commission provisionally approved appurtenant rights for both Parcels, but for Parcel 24, LCA 4405P, confirmed by RP 6149, was referenced, not LCA 4405F,

confirmed by RP 4089, and there was no reference to LCA 7713:24. (Provisional Order, Attachment C, Revised Exh. 7, pp. 6-7.)

g. Barrett and Nakama request appurtenant rights of 937,500 gpd (3.125 acres x 300,000 gad), based on Reppun's high estimate. (*Id.*, ¶¶ 100-102.) (Hui/MTF and OHA: FOF B-221.)

h. However, approximately 10 percent of Parcel 24 is comprised of the six pō'alima of the konohiki award to Kamāmalu, LCA 7713:24, for which the total acreage and other uses are not described. (Exh. 2322-Barrett-7.) Therefore, the acreage for appurtenant rights for Parcel 24 should be reduced from 3.08 acres to 2.772 acres.

i. Therefore, the total acreage for appurtenant rights for Parcels 23 and 24 should be reduced from 3.125 acres to 2.817 acres.¹⁷

j. They also request 937,500 gpd to irrigate the entire 3.125 acres of lo'i (3.125 acres x 300,000 gad), using Reppun's high estimate. (*Id.*, ¶¶ 106-107.) (Hui/MTF and OHA: FOF B-223.)

349. SWUPAs 2252/2253N—Crystal Koki

a. Crystal and Clifford Koki filed existing and new use SWUPAs on April 23, 2009 for TMK Nos. (2) 3-2-003:004 ("Parcel 4"), (2) 3-2-003:032 ("Parcel 32"), and (2) 3-2-003:037 ("Parcel 37"). (Koki, WT, 12/22/15, ¶ 1; SWUPA 2252 at 3-4; SWUPA 2253N at 2-3.) (Hui/MTF and OHA: FOF B-224.)

b. Parcel 4 is 0.5 acre, Parcel 32 is 0.16 acre, and Parcel 37 is 0.6 acre, for a total of 1.26 acres. (*Id.*, ¶¶ 18-21; SWUPA 2252 at 4; SWUPA 2253N at 3.) (Hui/MTF and OHA: FOF B-233.)

c. The Kokis grow kalo on Parcel 32 (0.16 acres), attempt to grow kalo on Parcel 4 (0.5 acre), and also use water for their yard, domestic plants, and fruit trees on approximately 0.46 (out of 0.6) acres of Parcel 37 and 0.0625 acre of Parcel 4. They have not measured all these uses, but estimate their domestic use at 1,568 gpd (0.46 acres + 0.0625 acres x 3,000 gad), using the Maui County domestic cultivation standard. (*Id.*, ¶¶ 24-25; SWUPA 2252 at 3-4, Attachment 1 at 1-3; SWUPA 2253N, Attachment 1, at 1, 3.) (Hui/MTF and OHA: FOF B-235, B-236.)

¹⁷ Appurtenant rights acreages would be .045 acres for Parcel 23 and 2.772 acres for Parcel 24 for a total of 2.817 acres.

d. When there is sufficient and consistent water flow, the Koki ‘ohana intends to restore their lo‘i cultivation to historic levels, or a total of 0.736 acres (all of Parcels 4 and 32, and about 1/8 of Parcel 37.) They request an additional 220,800 gpd for this purpose, using Reppun’s high estimate (0.736 acre x 300,000 gad). (*Id.*, ¶¶ 26; SWUPA 2253N at 3, Attachment 1, at 2.) (Hui/MTF and OHA: FOF B-237.)

e. Parcel 4 is comprised of a portion of LCA 4377:1, confirmed by RP 4105. The native testimony states that ‘āpana 1 was a “section of loi.” (*Id.*, ¶¶ 6, 9, 14; Exh. 2252-Koki-1.) (Hui/MTF and OHA: FOF B-229, B-230.)

f. Parcel 32 is comprised of a portion of LCA 4405E:1, confirmed by RP 5274. The native and foreign testimonies state that ‘āpana 1 was “moo kalo.” (*Id.*, ¶¶ 7, 10, 15; Exh. 2252-Koki-2.) (Hui/MTF and OHA: FOF B-229, B-230.)

g. Parcel 37 is comprised of a portion of LCA 4377:1 (as does Parcel 4), as well as portions of LCAs 4426:1, confirmed by RP 4937, and LCA 425, confirmed by RP 3345. The foreign testimony for LCA 4426 states that ‘āpana 1 included “16 lois and one kula.” The foreign testimony for LCA 425 states that it consisted of “one piece on which his house is situated, and several kalo patches.” (*Id.*, ¶¶ 8, 11-12, 16-17; Exh. 2252-Koki-3, -4.) (Hui/MTF and OHA: FOF B-229, B-231, B-232.)

h. The Commission provisionally approved appurtenant rights for Parcels 4, 32, and 37. For Parcel 37, only documents for LCA 4377:1 were submitted and not for LCAs 4426:1 and 425. (Provisional Order, Attachment C, Revised Exh. 7, pp. 5-6.) (Hui/MTF and OHA: FOF B-230.)

350. SWUPA 2367N—Lawrence Koki

a. On April 23, 2009, Lawrence Koki filed a new use SWUPA for TMK No. (2) 3-2-003-030 (“Parcel 30”), for which he claimed appurtenant rights and requested 2,400 gpd for domestic use on 0.8 acre of Parcel 30’s 0.93 acre. (SWUPA 2367N, p. 1, p. 2, table 1, p. 3, table 2.)

b. The Commission had granted provisional recognition, noting an ‘auwai as boundary and a house lot and several kalo patches. (Provisional Order, Attachment C, Revised Exh. 7, p. 7.)

c. Koki did not submit testimony for nor participate in the contested case hearing.

351. SWUPAs 2324/2325N—William La‘a & Emmett & Renette Rodrigues

a. William La‘a and the Rodrigues filed SWUPAs for existing and new uses on April 30, 2009 for TMK No. (2) 3-2-003:002 (“Parcel 2”). They also maintain lo‘i kalo on TMK No. (2) 3-2-003:003 (“Parcel 3”), which is completely enclosed by Parcel 2 and owned by the George Ezaki Trust. Although the Trust owns Parcel 3, the Rodrigues ‘ohana has always cultivated it along with their other lo‘i in Parcel 2 and therefore claim appurtenant rights for Parcel 3 as well. (Rodrigues, WT, 11/17/15, ¶¶ 1, 6, 9; SWUPA 2324 at 3-4; SWUPA 2325N at 2-3; Exhs. 2324-Laa-1, -3.) (Hui/MTF and OHA: FOF B-238, B-239.)

b. Parcel 2 is 2.053 acres. Parcel 3 is 0.107 acres. (*Id.*, ¶¶ 9-11.) (Hui/MTF and OHA: FOF B-243, B-244.)

c. Parcel 2 is a portion of LCA 4426:1, confirmed by RP 4937, the same LCA as discussed in SWUPAs 2252/2253N—Crystal Koki, described as containing “16 lois and one kula.” (*Id.*, ¶ 11; Exh. 2252-Koki-3.) (Hui/MTF and OHA: FOF B-243, B-244.)

d. Parcel 3 is a pō‘alima of the konohiki award to Victoria Kamāmalu, LCA 7713:24. (*Id.*, ¶¶ 9-10, 13.) (Hui/MTF and OHA: FOF B-244.)

e. The Commission provisionally approved appurtenant rights for LCA 4426:1, noting the pō‘alima within the ‘āpana. (Provisional Order, Attachment C, Revised Exh. 7, p. 7.) (Hui/MTF and OHA: FOF B-245.)

f. The Rodrigues ‘ohana request recognition of appurtenant rights for Parcels 2 and 3 in the amount of 524,100 gpd, based on Reppun’s high estimate of 300,000 gad for 1.747 acres. The 1.747 acres include Parcel 3’s 0.107 acre plus their estimate that 1.64 acres of Parcel 2’s 2.053 acres was in kalo at the time of the Māhele, based on ancient lo‘i that they have restored. (*Id.*, ¶¶ 11-12.) (Hui/MTF and OHA: FOF B-242.)

g. The correct estimate is 1.848 acres, based on the percent of LCA 4426:1 that is estimated to have been in lo‘i at the time of the Māhele. (*Id.*, ¶ 11; Exh. 2252-Koki-3.) (Hui/MTF and OHA: FOF B-243, B-244.)

h. Therefore, when based on Reppun’s high estimate, the Rodrigues ‘ohana’s appurtenant rights request should have been 586,500 gpd ($1.848 + 0.107 = 1.955$ acre x 300,000 gad = 586,500 gpd).

i. They also request a permit for 492,000 gpd to irrigate 1.64 acre of lo‘i, based on Reppun’s high estimate (1.64 acre x 300,000 gad). (*Id.*, ¶¶ 19-20; SWUPA 2325N at 2.) (Hui/MTF and OHA: FOF B-250.)

j. 54,000 gpd was their existing use for the 1.64 acres, based on the five-gallon bucket method. (*Id.*, ¶¶ 17, 21; SWUPA 2324, Attachment at 2; SWUPA 2325N, Attachment 1 at 2.) (Hui/MTF and OHA: FOF B-249.)

352. SWUPA 2364N—William Freitas

a. On April 23, 2009, William Freitas filed a new use SWUPA for TMK No. (2) 3-2-002:037 (“Parcel 37”). His daughter, Miki‘ala Pua‘a-Freitas, testified on his behalf and also for SWUPAs 2269/2270N, filed by her father and Michael Rodrigues. (SWUPA 2364N; Pua‘a-Freitas, WT, 1/29/16, ¶ 1.)

b. Parcel 37 is 0.775 acre, for which Freitas requests recognition of appurtenant rights for 232,500 gpd and a permit for 150,825 gpd for 0.5 acre of lo‘i kalo and 0.275 acre of fruits and vegetables and water for fowl, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo and Maui County standard for diversified agriculture of 3,000 gad. (*Id.*, ¶¶ 14, 24-27.)

c. There is a small house of 500 square feet, but Pua‘a-Freitas maximizes use over the rest of the land. (Tr., 7/12/16, p. 59, ll. 8-23.)

d. Freitas had applied for a new instead of an existing use permit, because of lack of sufficient water in 2008, even though their kuleana had used water from the ‘auwai for generations. In 2012, they restored kuleana water to Parcel 37 and have been using water for six lo‘i and their garden and fowl. They plan to restore 0.5 acre of kalo lo‘i. (*Id.*, ¶¶ 21-23.)

e. Freitas has also established Kapuna Farms on Parcel 37, which produces honey for both their family’s consumption and for sale. (*Id.*, ¶ 38.)

f. Parcel 37 has been in the Freitas ‘ohana since the Māhele and had included all of LCA 4405EE:1, confirmed by RP 6207, although Parcel 37 now includes only a portion of the LCA. They have burials on the property. (*Id.*, ¶ 5; Pua‘a-Freitas, Tr., 7/12/16, p. 47, l. 24 to p. 48, l. 5.)

g. LCA 4405EE:1 was described as “a section of kalo and kula land.” Based on the terracing and slope of the land and the existence of ancient lo‘i walls throughout, Pua‘a-Freitas believes the kalo portion was on their land. (*Id.*, ¶ 12; Pua‘a-Freitas, Tr., 7/12/16, p. 50,

l. 8 to p. 51, l. 23; Exh. 2364-Freitas-1-p. 4.) The proportion of land under kalo cultivation would have been 50% of the total acreage or .3875 acre.

h. The Commission had granted provisional approval, commenting that there were multiple references to pō‘alima as boundary, that native testimony referred to 36 lo‘i, one kula and one house lot, and that the native register referenced 13 pō‘alima, patch pauku, and pasture. (Provisional Order, Attachment C, Revised Exh. 7, p. 7.)

b. South Waihe‘e ‘auwai

353. The following SWUPAs receive water from the Spreckels Ditch via the South Waihe‘e ‘auwai (*See* Figure 1).

354. SWUPA 2249—Kenneth Kahalekai

a. Kenneth Kahalekai filed existing use SWUPAs for five parcels, two of which are now cared for by Kau‘i Kahalekai, who has a separate application under SWUPA 2312. The remaining three SWUPAs are for TMKs No. (2) 3-2-004:002 (“Parcel 2”), No. (2) 3-2-004:003 (“Parcel 3”), and No. (2) 3-2-005:029 (“Parcel 29”). (Kahalekai, WT, 12/14/15, ¶ 1; SWUPA 2249 at 4.) (Hui/MTF and OHA: FOF B-276.)

b. Kahalekai requests appurtenant rights for these three parcels for 785,100 gpd and a permit for 578,100 gpd. (Kahalekai, WT, 12/14/15, ¶¶ 3, 17.)

c. Parcel 2 is 0.957 acre and is comprised of the majority of LCA 3718, confirmed by RP 5452, and two pō‘alima of the konohiki award to Kamāmalu, LCA 7713:24. Parcel 3 is 1.44 acres and is comprised of all of LCA 4432:1, confirmed by RP 5361, and three pō‘alima of LCA 7713:24. Parcel 29 is 0.44 acre and is comprised of a portion of LCA 3718, and a portion of LCA 7713:24. Parcels 2 and 29 together comprise the entirety of LCA 3718. (Kahalekai, WT, 12/14/15, ¶ 4.) (Hui/MTF and OHA: FOF B-280.)

d. The Commission provisionally approved appurtenant rights for Parcel 2 based on LCA 3718, for Parcel 3 based on LCA 4432:1, and for Parcel 29 based on LCAs 3718 and 4440. Kahalekai’s current information does not mention LCA 4440 and now identifies LCA 7713:24 for Parcels 2, 3, and 29. (Provisional Order, Attachment C, Revised Exh. 7, pp. 8-9.) (Hui/MTF and OHA: FOF B-281.)

e. LCA 3718 is described as containing 61 lo‘i. LCA 4432:1 is described as containing 8 lo‘i and 3 pō‘alima. (Kahalekai, WT, 12/14/15, ¶¶ 8, 10.) (Hui/MTF and OHA: FOF B-283-284.)

f. Kahalekai estimates the amount of land cultivated in lo‘i kalo at the time of the Māhele totaled 2.167 acres: all 0.957 acre of Parcel 2, all 1.44 acres of Parcel 3, and half, or 0.22 acre of Parcel 29. About half of Parcel 29 is comprised of the konohiki award 7713:24, so without any description, Kahalekai attributed only half of Parcel 29 to lo‘i kalo at the time of the Māhele. (Kahalekai, WT, 12/14/15, ¶¶ 8-9.) (Hui/MTF and OHA: FOF B-285.)

g. However, the pō‘alima in Parcels 2 and 3 were also part of the konohiki award to Kamāmulu, LCA 7713:24. A hand-drawn map of LCA 3718 shows two pō‘alima comprising about 10 percent of the size of LCA 3718, and a similar map of LCA 4432:1 shows three pō‘alima comprising less than 10 percent of the size of LCA 4432:1. (Exhs. 2249-Kahalekai-1, -2.)

h. A similar analysis as provided by Kahalekai for Parcel 29 would reduce Parcel 2’s 0.957 acres to 0.861 acres (0.957×0.9), and Parcel 3’s 1.44 acres to 1.296 acres (1.44×0.9).

i. Therefore, the estimate of the amount of land cultivated in lo‘i kalo at the time of the Māhele would be 2.377 acres ($0.861 + 1.296 + 0.22$).

j. On April 30, 2008, Kahalekai claims to have been cultivating 1.92 acres of lo‘i on Parcels 2 and 3 and water for domestic purposes on 0.7 acre. (Kahalekai, WT, 12/14/15, ¶ 17.) (Hui/MTF and OHA: FOF B-292-293.)

k. Kahalekai’s claim of 785,100 gpd and a permit for 578,100 gpd is based on Reppun’s high estimate of 300,000 gad for lo‘i kalo and Maui County domestic cultivation of 3,000 gad. (Kahalekai, WT, 12/14/15, ¶ 17.) (Hui/MTF and OHA: FOF B-292-293.)

355. SWUPA 2312—Kau‘i Kahalekai

a. Kau‘i Kahalekai testified in support of existing uses filed on April 23, 2009, for four parcels: TMKs No. (2) 3-2-005:023 (“Parcel 23”) and No. (2) 3-2-005:022 (“Parcel 22”), as well as two parcels originally included in SWUPA 2249, TMKs No. (2) 3-2-004:019 (“Parcel 19”) and No. (2) 3-2-005:027 (“Parcel 27”). (Kahalekai, WT, 1/28/16, ¶ 1; SWUPA 2312; SWUPA 2249.) (Hui/MTF and OHA: FOF B-294.)

b. Parcel 19 is 1.17 acres and Parcel 23 is 1.1 acres, both of which have been cultivated by the Kahalekai’s ‘ohana for several generations.

1. Parcel 19 is comprised of all of LCA 3866:3, confirmed by RP 5330, and all of LCA 4303 and 4304:1, confirmed by RP 5358. LCA 3866:3 was partly in lo‘i kalo and partly in kula. LCAs 4303

and 4304:1 were entirely in kalo. Based on the existence of ancient lo'i walls on Parcel 19, Kahalekai concluded that 1 acre was cultivated in lo'i kalo and the remaining 0.17 acre was kula. The Commission provisionally approved appurtenant rights for LCA 4303.

2. Parcel 23 is wholly comprised of LCA 4405-HH: 1 & 2, confirmed by RP 4119. Both were partly in lo'i kalo and partly in kula. Based on the ancient lo'i walls, Kahalekai estimates that 75%, or 0.825 acre, was in lo'i kalo and 0.275 acre was in kula.

(Kahakelai, WT, 1/28/16, ¶¶ 4, 11, 13, 15; Exhs. 2312-Kahalekai-1 to 3.)

(Hui/MTF and OHA: FOF B-298, B-300.)

c. Parcel 22 is 0.12 acre and Parcel 27 is 0.766 acre, both of which were pō'alima of the konohiki award to Kamāmalu, LCA 7713:24. (Kahalekai, WT, 1/28/16, ¶¶ 4, 14, 16; Exhs. 2312-Kahalekai-3, -5, -6, -7.) (Hui/MTF and OHA: FOF B-299, B-301.)

d. The Commission granted provisional recognition of appurtenant rights for Parcels 19, 22, and 23 but not 27 because of illegible documents for LCA 7713:24. Parcel 19's approval was based on LCA 4303, with no mention of LCAs 4304:1 or 3866:3. Parcel 22's approval was based on 4405HH:1 with no mention of 4405HH:2. Parcel 23's approval was based on LCA 4405HH:1. (Provisional Order, Attachment C, Revised Exh. 7, pp. 9, 11.)

(Hui/MTF and OHA: FOF B-299, B-300.)

e. She requests appurtenant rights of 812,835 gpd and an existing use permit for 832,800 gpd for the four parcels, both of which were not measured but estimates using Reppun's high estimate of 300,000 gad for lo'i kalo and 2002 State of Hawai'i Water System Standard for Maui County for domestic cultivation of 3,000 gad.

1. The total acreage for which Kahalekai claims appurtenant rights is 2.705 (should have been 2.711) acres for lo'i kalo and 0.445 acre for other diversified agriculture, resulting in her request for 812,835 gpd.
2. Her request of 832,800 gpd in existing use is comprised of 2.776 acres in lo'i kalo out of a total of 3.156 acres across her four parcels, using Reppun's high estimate (2.776 x 300,000 gad).

(Kahalekai, WT, 1/28/16, ¶¶ 3, 17-20, 22-23; SWUPA 2249 at 4; SWUPA 2312 at 4.) (Hui/MTF and OHA: FOF B-295, B-302, B-304.)

f. The 2.776 acres of existing use is comprised of:

1. All 1.17 acres of Parcel 19.
2. 0.076 of 0.12 acre of Parcel 22.
3. 0.77 of 1.11 acres of Parcel 23.
4. 0.76 of 0.766 acre of Parcel 27.

(SWUPA 2312: Attachments, p. 2, and Exhibit 2; Exhibit2312-Kahalekai-8.)

356. SWUPAs 2320/2321N—Ramsay Anakalea (Aloha Poi)

a. Ramsay Anakalea filed for existing and new uses for TMK No. (2) 3-2-005:020 (“Parcel 20”), which he leases to Aloha Poi, requesting appurtenant rights of 181,500 gpd and a permit for 150,000 gpd, of which 72,000 gpd was the existing use as of April 30, 2008. (Nakama, WT, 2/3/16, ¶¶ 54, 56-57.) (Hui/MTF and OHA: FOF B-305, B-306.)

b. Parcel 20 is 1.2 acres and is the entirety of LCA 4405-V: 1 & 2, confirmed by RP 4117. Some of the land was in kalo lo‘i and some in ‘uala at the time of the Māhele. Based on the slope of the land and the existence of lo‘i kalo walls, Nakama estimates half of the land was in lo‘i kalo. The Commission provisionally recognized appurtenant rights. (*Id.*, ¶¶ 58, 61; Provisional Order, Attachment C, Revised Exh. 7, p. 12.) (Hui/MTF and OHA: FOF B-307.)

c. The 72,000 gpd of existing use is to irrigate 0.5 acres and was measured by the bucket method. The total permit request is based on using Reppun’s high estimate of 300,000 gad for lo‘i kalo (0.5 acre x 300,000 gad).

d. The request for appurtenant rights recognition is based on Reppun’s estimate for the half of Parcel 20 that was in lo‘i kalo or 0.6 acres (0.6 acres x 300,000 gad = 180,000 gpd), and the water duty for diversified agriculture in *Waiāhole* for the half of Parcel 20 in ‘uala or 0.6 acres (0.6 acre x 2,500 gad = 1,500 gpd), for a total request of 181,500 gpd. (*Id.*, ¶¶ 66-67.) (Hui/MTF and OHA: FOF B-305, B-308, B-310.)

357. SWUPA 2406N—David & Anne Brown

a. On June 10, 2009, David and Anne Brown filed a new use SWUPA for TMK No. (2) 3-2-005:028, a 11.74-acre property, for which they requested 10,000 gad, or 112,740 gpd for 9.0 acres of fruit trees and 2.274 acres of aquaculture. (SWUPA 2406N, p. 2, table 1, p. 3, table 2.)

b. They claimed appurtenant rights but provided no documents nor participated in the provisional approval process. (SWUPA 2406N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 14.)

c. The Browns did not submit any written testimony and did not participate in the contested case hearing.

358. SWUPAs 2262/2263N—John Varel (Kalani & Tera Paleka)

a. John Varel owns four properties in Waihe'e and Waiehu for which he is seeking permits, three of which he acquired after the SWUPAs were filed and is thus pursuing in place of the original applicants: SWUPAs 2262 and 2263N (Paleka), 2298 and 2299N (Varel), 2593N (Koolau Cattle Co.), and 3470N (Emmanuel Lutheran Church). Varel, WT, September 12, 2016, ¶¶ 1, 3.) (Hui/MTF and OHA: FOF B-74.)

b. The Paleka 'ohana filed for existing and new uses for TMKs No. (2) 3-2-005:035 ("Parcel 35") and No. (2) 3-2-041 ("Parcel 41"), on April 23 2009, which were bought by the John and Angelia Varel Trust in 2011. (Varel, WT, 2/14/16, ¶ 2; SWUPA 2262 at 4; SWUPA 2263N at 3.) (Hui/MTF and OHA: FOF B-312.)

c. Parcel 35 is 0.26 acres, and parcel 41 is 0.13 acres. (SWUPA 2263N at 3).

d. Varel seeks appurtenant rights for 117,000 gpd and permits for 82,200 gpd, of which 61,851 gpd is the existing use as of April 30, 2008. (Varel, WT, 9/12/16, ¶ 8; SWUPA 2262 at 2.) (Hui/MTF and OHA: FOF B-312.)

e. The Commission had granted provisional approval for both parcels, noting a reservation by Wailuku Sugar Company for Parcel 35. (Provisional Order, Attachment C, Revised Exh. 7, p. 9.)

f. The deeds to both parcels contain reservations of appurtenant rights when they were sold by Wailuku Sugar Co. in 1963. (*Id.*, ¶ 7; SWUPA 2262, Addendum at 1.) (Hui/MTF and OHA: FOF B-313.)

g. The Paleka 'ohana used the bucket method to estimate their existing use for their 0.074-acre lo'i at about 61,851 gpd. The measured use of 61,851 gpd by the Paleka 'ohana for their 0.074-acre lo'i is equivalent to 835,800 gad, while the reasonable use would have been 11,100 gpd (0.074 acre x 150,000 gad). (*Id.*, ¶22; SWUPA 2262 at 4, Addendum at 2, Exhs. 3-8 (photos).) (Hui/MTF and OHA: FOF B-315.)

h. The Paleka 'ohana applied the 600 gpd figure for a single-family home to estimate their domestic use for two homes on about 0.27 acre at 1,200 gpd. (*Id.*, ¶22; SWUPA 2262 at 4, Addendum at 2, Exhs. 3-8 (photos).) (Hui/MTF and OHA: FOF B-315.)

i. Varel plans to irrigate 0.16 acre of lo'i on Parcel 35's 0.26 acres and 0.11 acre of lo'i on Parcel 41's 0.13 acres, for which he requests 81,000 gpd, using Reppun's high estimate (0.27 acre x 300,000 gad). He also uses kuleana water to irrigate two small non-commercial gardens on both parcels and requests 1,200 gpd, applying 600 gpd for a single-family home. (*Id.*, ¶¶ 23-26.) (Hui/MTF and OHA: FOF B-316, B-317.)

359. SWUPAs 2334/2335N—Burt Sakata & Peter Fritz

a. On April 30, 2009, Sakata and Fritz filed:

1. an existing use SWUPA for four parcels: TMKs No. (2) 3-2-005:011 ("Parcel 11"), No. (2) 3-2-005:013 ("Parcel 13"), No. (2) 3-2-005:019 ("Parcel 19"), and No. (2) 3-2-005:039 ("Parcel 39"); and
2. a new use SWUPA for three parcels: Parcel 13, TMK No. (2) 3-2-005:015 ("Parcel 15"), and TMK No. (2) 3-2-005:017 ("Parcel 17").

(Sakata, WT, 1/15/16, ¶ 1; SWUPA 2334 at 4; SWUPA 2335N at 3.) (Hui/MTF and OHA: FOF B-318.)

b. The deeds to Parcels 11, 15, 19 and 39 contain reservations of appurtenant rights in deeds dated 2001; Parcels 13 and 17 do not have reservations. (*Id.*, ¶ 3; Sakata, Tr., 7/13/16, p. 55, l. 21 to p. 56, l. 15.) (Hui/MTF and OHA: FOF B-320.)

c. Sakata requests recognition of appurtenant rights for all six parcels in the amount of 2,543,100 gpd and permits for existing and new uses for 384,354 gpd, of which 4,254 gpd was the existing use. (*Id.*, ¶ 5; SWUPA 2334 at 2; SWUPA 2335N, Attachment A.) (Hui/MTF and OHA: FOF B-319.)

d. Parcel 11 is 0.07 acres; Parcel 13 is 0.61 acres, Parcel 15 is 0.03 acres, Parcel 17 is 0.81 acres, Parcel 19 is 12.341 acres, and Parcel 39 is 0.11 acres, for a total of 13.971 acres. (*Id.*, ¶¶ 6, 16, 23, 27, 30, 33.)

e. Sakata requests recognition of appurtenant rights for 8.471 acres of lo'i kalo and three house lots, for a total of 2,543,100 gpd, based on Reppun's high estimate of 300,000 gad (8.471 acres x 300,000 = 2,541,300) and Maui County standard for domestic use of 600 gpd (3 households x 600 gpd = 1,800 gpd), resulting in the 2,543,100 gpd total (2,541,300 + 1,800 = 2,543,100 gpd). (*Id.*, ¶¶ 70-71.)

f. Appurtenant rights of 8.471 acres of kalo lo‘i and three house lots are based on:

1. Parcel 11: is a pō‘alima of LCA No. 7713:24 to Kamāmalu, confirmed by RP 4475. Thus, Sakata claims all 0.07 acres under appurtenant rights. (*Id.*, ¶¶ 6-16.)
2. Parcel 13: is the entirety of LCA No. 7686:1, confirmed by RP 6284. Documents describe eleven lo‘i kalo, some small kulas, and a house lot. Sakata concludes from the existence of rock walls and the high concentration of lo‘i kalo in the area, that there were only small areas of dryland cultivation on the lo‘i banks. He therefore estimates the amount of land in kalo as 0.36 acre (0.61 – 0.25 houselot = 0.36 acre). (*Id.*, ¶¶ 27-29.)
3. Parcel 15: is part of a pō‘alima of LCA No. 7713:24 to Kamāmalu, confirmed by RP 4475. Thus, Sakata claims all 0.03 acres under appurtenant rights. (*Id.*, ¶¶ 16-22.)
4. Parcel 17: is the entirety of LCA No. 3770-B:1, confirmed by RP 8066; the entirety of LCA No. 4444-B, confirmed by RP 8065; and the entirety of LCA 4444:1, confirmed by RP 6380. Documents describe all three LCAs as only containing lo‘i kalo. Thus, Sakata claims all 0.81 acres under appurtenant rights. (*Id.*, ¶¶ 30-32.)
5. Parcel 19: includes:
 - i. the entirety of LCAs 3434:1 & 2, 3515, 3886-B:1, 3997, 4284:2, 4303 & 4304:2 & 3, 4304-B:1, 4405-FF:1, 4405-LL:1 & 2, 4417:1, 4438-B:1.1 & 1.2, and 8365-B:2, with all described as being in lo‘i kalo, except 4303 & 4304:2 & 3 as having a section of kalo and houselot, 4304-B:1 as having kalo and kula land, and 8365-B:2 as consisting of kalo and kula land;
 - ii. a portion of LCAs 3510:1 and 4440, with 4440 described as a piece of kalo and kula land; and
 - iii. a portion of LCA No. 7713:24 and eight pō‘alima of LCA No. 7713:24.

Sakata claims appurtenant rights for 7.091 acres for Parcel 19 after subtracting 5 acres for the land attributed to LCA No. 7713:24 and 0.25 acres for the houselot from the total of 12.341 acres. Sakata (*Id.*, ¶¶ 33-67.)

6. Parcel 39: is a pō‘alima of LCA No. 7713:24 to Kamāmalu, confirmed by RP 4475. Thus, Sakata claims all 0.11 acres under appurtenant rights. (*Id.*, ¶¶ 23-26.)

g. The Commission had granted provisional recognition. However: 1) For Parcel 15, which they now claim was part of LCA 7713:24 to Kamāmalu, the LCA identified then was 4405-V:1&2, for which no documentation had been provided; 2) for Parcel 17, only LCA 3770-B:1 had been identified and not the other two; 3) and for Parcel 19, LCA 4303 had no documentation, LCA 4417:4, not 4417:1, had been identified, and LCAs 4304:2&3, 3510, and 4440 had not been identified. (Provisional Order, Attachment C, Revised Exh. 7, pp. 12-13.)

h. Sakata estimates his existing use was about 4,254 gpd for a non-commercial garden on about 1.218 acres on Parcels 11, 13, 19, and 39, using Maui County domestic cultivation standard of 3,000 gad (1.218 acres x 3,000 gad = 3,654 gpd). He then added 600 gpd, based on Maui County single-family home use, to account for the water he uses outside his home on Parcel 13 for gardening, to arrive at 4,254 gpd. (*Id.*, ¶¶ 23-26.) (Hui/MTF and OHA: FOF B-326.)

i. Sakata requests 380,100 gpd to restore 1.267 acres of lo‘i, using Reppun’s high estimate (1.267 acres x 300,000 gad). (*Id.*, ¶¶ 77-78.) (Hui/MTF and OHA: FOF B-329.)

j. He does not seek a separate allocation for his agricultural uses but intends to use some of the water that passes through his lo‘i to irrigate 12 acres of macadamia trees. Using the diversified agriculture water duty in *Waiāhole*, he estimates that 30,000 gpd (12 acres x 2,500 gad) of his 380,100 request for lo‘i would be used to irrigate his trees. (*Id.*, ¶ 79.) (Hui/MTF and OHA: FOF B-329.)

360. SWUPAs 2225/2226N—Michael Doherty

a. On April 23, 2009, Michael Doherty filed existing and new use SWUPAs for TMKs No. (2) 3-2-005:006 (“Parcel 6”), No. (2) 3-2-005:007 (“Parcel 7”), and No. (2) 3-2-005:008 (“Parcel 8”). (Doherty, WT, 1/29/16, ¶ 1; SWUPA 2225 at 4; SWUPA 2226N at 3.) (Hui/MTF and OHA: FOF B-330.)

b. Doherty requests recognition of appurtenant rights for 470,850 gpd and a permit for 602,550 gpd, of which 302,250 gpd is the existing use. All of these amounts were not measured but calculated by using Reppun’s high estimate of 300,000 gad for lo‘i kalo and Maui

County domestic cultivation standard of 3,000 gad. (*Id.*, ¶¶ 4, 29-32; SWUPA 2225 at 2, 4, 24, Addendum at 2; SWUPA 2226N at 3.) (Hui/MTF and OHA: FOF B-331, B-342-B-345.)

c. Parcel 6 is 0.07 acres, Parcel 7 is 2.825 acres, and Parcel 8 is 0.05 acres, for a total of 2.945 acres. Parcels 6 and 8 are located within Parcel 7 and were pō‘alima of the konohiki award to Kamāmalu, LCA 7713:24. (*Id.*, ¶¶ 6, 17-18, 20; Exh. 2225-Doherty-2, -3.) (Hui/MTF and OHA: FOF B-339 - B-340.)

d. Doherty estimates the acreage of land in Parcel 7 that was in lo‘i kalo at the time of the Māhele was 2.325 acres out of a total of 2.825 acres, arrived through the following analysis:

1. Parcel 7 is comprised of a portion of LCA 3775:3, confirmed by RP 5360; all of LCA 4295:1, confirmed by RP 5401; all of LCAs 3770 & 4424:1; and all of LCA 4405NN, confirmed by RP 5104.
2. LCA 3775:3 was a “moo of kalo,” which Doherty estimates at 1 acre, using the Kīpuka database’s area measurement tool.
3. LCA 4295:1 was a “section of taro with dryland with house.” Based on the existence of rock walls and other land features, the high concentration of lo‘i in this area, and the common practice for pāhale at the time of the Māhele, Doherty estimates that the LCA was 0.25 acre for the pāhale, 0.25 acre for dryland cultivation, and 0.5 acre for lo‘i kalo.
4. LCA 3770 & 4424:1 were “section of lois.”
5. LCA 4405NN contained nine lo‘i, with no other description.
6. Subtracting the 0.5 acre for the pāhale and dryland cultivation from 2.825 acres, the remainder is 2.325 acres.

(*Id.*, ¶¶ 5, 13-16; Exh. 2225-Doherty-1 to -4.) (Hui/MTF and OHA: FOF B-334-B-340.)

e. The Commission had provisionally approved appurtenant rights. Parcel 6 was described as derived from LCA 4295.1, confirmed by RP 5401 and not from 7713:24 to Kamāmalu; Parcel 8 was described as derived from LCA 3995:3, confirmed by RP 5360 and not shown on the map, with applicant’s attorney describing it as a pō‘alima but with no documentation; and Parcel 7 did not include LCA 4295:1, which was ascribed to Parcel 6, nor LCA 4424:1, and LCA 4405-NN was described as “2 pieces of kalo and kula lands,” and not nine lo‘i. However, on the latter, the applicant provided a document of Native Testimony that

stated that “I saw 1 piece of 9 lo‘i inside...” (Provisional Order, Attachment C, Revised Exh. 7, p. 7; Exh. 2225-Doherty-4.) (Hui/MTF and OHA: FOF B-334.)

f. Adding Parcel 6’s 0.07 acre and Parcel 8’s 0.05 acre to 2.325 acres of Parcel 7, Doherty claims appurtenant rights for 2.445 acres of lo‘i kalo.

g. He also claims appurtenant rights to 0.25 acre of a houselot (pāhale) and an additional 0.25 acre for dryland cultivation. (*Id.*, ¶ 21.)

h. Doherty claims existing uses of for one acre in lo‘i cultivation, and 0.75 acre in domestic agriculture, using Reppun’s high estimate of 300,000 gad and the Maui County domestic agriculture standard of 3,000 gad, for a total of 302,250 gpd. (*Id.*, ¶¶ 29, 31; SWUPA 2225 at 4, Addendum at 2.) (Hui/MTF and OHA: FOF B-342.)

i. He also requests new uses for an additional acre of lo‘i kalo, again based on Reppun’s 300,000 gad, and 0.1 acre of citrus trees, using Maui County domestic agriculture standard of 3,000 gad, for a total new use request of 300,300 gpd. (*Id.*, ¶¶ 30, 32; SWUPA 2226N at 3.) (Hui/MTF and OHA: FOF B-343 – B-344.)

361. SWUPAs 2280/2281N—Thomas Texeira & Denise Texeira

a. The Teixeiras filed for existing and new use SWUPAs on April 23, 2009 for TMKs No. (2) 3-2-005:031 (“Parcel 31”) and No. (2) 3-2-005:032 (“Parcel 32”), seeking recognition of appurtenant rights of 98,100 gpd and a permit for 45,165 gpd, of which 4,845 gpd was the existing use, using Reppun’s high estimate of 300,000 gad for lo‘i kalo, a water duty for aquaculture of 36,000 gad, and 2002 State of Hawai‘i Water System Standard for Maui County for domestic agriculture of 3,000 gad. (Texeira, WT, 1/29/16, ¶¶ 1, 3; SWUPA 2280 at 4; SWUPA 2281N at 3; Texeira, Tr., 7/13/16, p. 70, l. 13 to p. 71, l. 15.) (Hui/MTF and OHA: FOF B-346 – B-347.)

b. The Commission had given provisional approval of appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 11.) (Hui/MTF and OHA: FOF B-352.)

c. Parcel 31 is 0.607 acre and all of LCA 4405U:2, confirmed by RP 5990, and a portion of the konohiki award to Kamāmalu, LCA 7713:24.

1. LCA 4405U:2 is 0.27 acre, and described as consisting of 10 lo‘i kalo,
2. leaving the LCA 7713:24 portion at 0.337 acre.

(*Id.*, ¶¶ 4, 6; SWUPA 2280, p. 2, table 3; Exh. 2280-Teixeira-1.) (Hui/MTF and OHA: FOF B-350.)

d. The Teixeiras state that Parcel 32 is 0.06 acres and all of LCA 3721:2, confirmed by RP 6439, and was in lo‘i and dryland cultivation at the time of the Māhele. Ancient rock walls still exist on approximately 95% of Parcel 32, or approximately 0.057 acres. However, there is a slight discrepancy with their existing use application, which lists the acreage at 0.057, not 0.06 acre. (*Id.*, ¶¶ 4, 7-8, 10; Exh. 2280-Teixeira-2; SWUPA 2280, p. 2, table 3.) (Hui/MTF and OHA: FOF B-351.)

e. The Teixeiras estimate that 0.327 acre was in lo‘i kalo at the time of the Māhele: 0.27 acre of Parcel 31’s 0.607 acre, plus 0.057 of Parcel 32. They did not include any acreage derived from LCA 7713:24 in Parcel 31. (*Id.*, ¶ 12.) (Hui/MTF and OHA: FOF B-353.)

f. The Teixeiras also had existing domestic uses on approximately 0.535 acre of their two parcels, and were also using water to maintain four koi ponds on about 0.09 acre, but the koi died in early 2016 due to contamination of river water. (*Id.*, ¶¶ 14-16; Teixeira, Tr., 7/13/16, p. 70, l. 13 to p. 71, l. 2; SWUPA 2280 at 4, Addendum at 1-2.) (Hui/MTF and OHA: FOF B-355 – B-356.)

g. They intend to restore 0.15 acre of lo‘i kalo (0.06 acre stated in the SWUPA plus 0.09 acre previously in koi ponds.) (*Id.*, ¶ 16; Teixeira, Tr., 7/13/16, p. 70, l. 13 to p. 71, l. 15, p. 72, l. 25 to p. 73, l. 21; SWUPA 2281N at 3.) (Hui/MTF and OHA: FOF B-357.)

362. SWUPAs 2264/2265N—Piko A‘o

a. Piko A‘o, LLC filed existing and new use SWUPAs for TMKs No. (2) 3-2-006:008 (“Parcel 8”) and No. (2) 3-2-006:019 (“Parcel 19”) on April 23, 2009. (Ishikawa, WT, 1/5/16, ¶ 1; SWUPA 2264 at 4; SWUPA 2265N at 3.) (Hui/MTF and OHA: FOF B-358.)

b. Piko A‘o, or “center of learning,” operates a Hawaiian learning center on Parcels 8 and 19, which they purchased from Wailuku Agribusiness in 2002. The deed contains a reservation of appurtenant rights. (*Id.*, ¶¶ 2, 4.) (Hui/MTF and OHA: FOF B-359, B-374.)

c. The Commission had given provisional approval of appurtenant rights. (Provisional Order, Attachment C, Revise Exh. 7, pp. 9-10.)

d. Piko A‘o requests appurtenant rights for Parcels 8 and 19 of an estimated 5,622,925 gpd and a permit for an estimated 1,451,675 gpd, of which 61,175 gpd was the

estimated existing use. (*Id.*, ¶ 7; SWUPA 2264 at 2; SWUPA 2265N Attachment at 2.)
(Hui/MTF and OHA: FOF B-361.)

- e. Existing use consists of:
 - 1. 0.17 acre of lo‘i on Parcel 8, estimated at 51,000 gpd, using Reppun’s high estimate (0.17 acre x 300,000 gad);
 - 2. 3.83 acres of diversified agriculture on Parcel 8, estimated at 9,575 gpd, using the diversified agriculture irrigation amount of 2,500 gad in Waiāhole; and
 - 3. domestic use for dish- and hand-washing, using the Maui County single-family home amount of 600 gpd.

(*Id.*, ¶¶ 63-65.) (Hui/MTF and OHA: FOF B-376 to B-378.)

- f. Its new use request consists of:
 - 1. 4.61 acres of lo‘i, estimated at 1,383,000 gpd using Reppun’s high estimate (4.61 acres x 300,000 gad);
 - 2. 3 acres of diversified agriculture, estimated at 7,500 gpd (3 acres x 2,500 gad).

(*Id.*, ¶¶ 66-67.) (Hui/MTF and OHA: FOF B-379 to B-380.)

g. Parcel 8 is 32.42 acres, and Parcel 19 is 0.61 acres. (*Id.*, ¶¶ 50, 57.)

h. Parcel 19 consists of LCA 4405U:1, confirmed by RP 5990, and is described as “21 loi.” (*Id.*, ¶¶ 9, 28, 48-49.)

i. Parcel 8 consists of a portion of the konohiki LCA No. 7713:24 to Kamāmalu, confirmed by RP 4475, within which seventeen kuleana LCAs were awarded. Of Parcel 8’s 32.42 acres, 11.5 acres were estimated as comprising LCA 7713:24, with the rest consisting of four houselots (1.0 acre), 1.81 acre kula (dryland agriculture), and 18.11 kalo lo‘i. (*Id.*, ¶¶ 8, 10-27, 30-47, 50-52.)

- j. Piko A‘o’s appurtenant rights request consists of:
 - 1. 183,000 gpd for Parcel 19’s 0.61 acre (0.61 acre x 300,000 gad); and
 - 2. 5,439,925 gpd for Parcel 8’s 32.42 acres:
 - a. 5,433,000 gpd for 18.11 acres of kalo lo‘i (18.11 acres x 300,000 gad);

- b. 2,400 gpd for four houselots (4 x 600 gpd);
- c. 4,525 gpd for dryland crops (1.81 acres x 2,500 gad); and
- d. none for 11.5 acres of the Kamāmalu konohiki LCA No. 7713:24.

(*Id.*, ¶¶ 52-60.)

363. SWUPAs 2316/2317N—Gordon Apo (Aloha Poi)

a. Gordon Apo and Lester Nakama filed existing and new use SWUPAs for TMK Nos. (2) 3-2-006:010 (“Parcel 10”) and (2) 3-2-006:011 (“Parcel 11”) on April 30, 2009. Nakama has leased the land from the Apo ‘ohana, which also cultivates some kalo for their own use. (Nakama, WT, 2/3/16, ¶¶ 4, 7; SWUPA 2316 at 4; SWUPA 2317N at 3.) (Hui/MTF and OHA: FOF B-382.)

b. Parcel 10 is 1.34 acre, and Parcel 11 is 0.06 acre, for a combined total of 1.40 acre. (*Id.*, ¶ 16; SWUPA 2316 at 4.) (Hui/MTF and OHA: FOF B-388.)

c. Parcel 10 includes approximately one fourth of LCA 4063, confirmed by RP 3429, and the land was described as “apana kalo.” Parcel 11 is a small tract of land within Parcel 10 and was a pō‘alima of the konohiki award to Kamāmalu, LCA 7713:24. (*Id.*, ¶¶ 9-10, 14-15; Exh. 2316-Apo-1; Exh. 2316-Apo-1-2; SWUPA 2316 at 4.) (Hui/MTF and OHA: FOF B-386, B-387.)

d. The Commission provisionally approved appurtenant rights for Parcels 10 and 11. (Provisional Order, Attachment C, Revised Exh. 7, pp. 11-12.) (Hui/MTF and OHA: FOF B-386.)

e. They request recognition of appurtenant rights for Parcels 10 and 11 for 420,000 gpd, and a permit for 219,000 gpd, of which 62,000 gpd is the existing use. The 62,000 gpd of existing use was measured by the bucket method for 0.73 acres, of which 0.67 acre was on Parcel 10 and 0.06 acre was on Parcel 11. The appurtenant right and permit requests were based on Reppun’s high estimates of 300,000 gad. (*Id.*, ¶¶ 2, 8, 13, 18-19, 21-22, 24; SWUPA 2316 at 2, 4 and Attachment 1 at 1-2; SWUPA 2317N Attachment 1 at 2.) (Hui/MTF and OHA: FOF B-383, B-388, B-389, B-390, B-391.)

364. SWUPA 2187—Milla Puliatch

a. On April 9, 2009, Milla Puliatch filed an existing use SWUPA for TMK No. (2) 3-2-006:010 (“Parcel 10”), a 1.75-acre property with active lo‘i kalo on 1.25 acres for 98

years, claiming an estimated existing use of 8,640 gpd. (SWUPA 2187, p. 2, table 1, p. 4, table 3, p.5.)

b. Puliatch had claimed appurtenant rights and had been granted provisional approval based on LCA 4063, confirmed by RP 3429, with the Native Register describing 28 lo‘i and one house, the Foreign Testimony describing one large piece of kalo, and the Native Testimony describing 1 taro section with 8 pō‘alima in it. (Exh. 2187-Puliatch, Provisional Order, Exhibits, p. 60, Exh. 7.)

c. Puliatch did not submit written testimony nor participate in the contested case hearing.

365. SWUPAs 2221/2222N—Cordell Chang

a. Cordell Chang filed SWUPAs for existing and new uses for TMK No. (2) 3-2-006:004 (“Parcel 4”). (Chang, WT, 1/30/16, ¶ 1; SWUPA 2221 at 4; SWUPA 2222N at 3.) (Hui/MTF and OHA: FOF B-392.)

b. Parcel 4 is 1.29 acres, of which Chang is farming 0.45 acres in bananas, tī leaf, ‘ulu, coconut, papaya, and other fruits and vegetables for his family, farmworkers, church, and the homeless, and some of which he sells. Applying the water duty in the Waiāhole case, he estimates his existing use as 1,125 gpd (0.45 acre x 2,500 gad). (*Id.*, ¶¶ 7-8, 12; SWUPA 2221 Attachments at 5 (map), 8-9 (photos).) (Hui/MTF and OHA: FOF B-399.)

c. Chang requests an additional amount to grow 0.5 acre of lo‘i kalo, which he estimates would require 150,000 gpd, using Reppun’s high estimate (0.5 acre x 300,000 gad). (*Id.*, ¶ 13.) (Hui/MTF and OHA: FOF B-400.)

d. Parcel 4 includes all of LCA 3805, confirmed by RP 5352. The native register states that the land included “forty two wetland taro patches, and a patch of pandanus (lauhala).” Ancient lo‘i walls still exist on a majority of Parcel 4. Therefore, Chang estimates 1.25 acres of the 1.29 total acreage was cultivated in lo‘i kalo, with the remainder cultivated in lauhala. (*Id.*, ¶¶ 5-8; Exh. 2221-Change-1.) (Hui/MTF and OHA: FOF B-396.)

e. Chang estimates his appurtenant rights at 375,000 gpd (1.25 acres x 300,000 gad), using Reppun’s high estimate. (*Id.*, ¶ 10.) (Hui/MTF and OHA: FOF B-397.)

f. The Commission had granted provisional recognition based on LCA 3805, noting lo‘i kalo. (Provisional Order, Attachment C, Revised Exh. 7, p. 7.) (Hui/MTF and OHA: FOF B-396.)

366. SWUPAs 2313/2314N—Charlene & Jacob Kana

a. The Kanas filed for existing and new use SWUPAs for TMKs No. (2) 3-2-006:001 (“Parcel 1”) and No. (2) 3-2-006:018 (“Parcel 18”) on April 30, 2009, requesting recognition of appurtenant rights for 471,000 gpd and permits for 345,999 gpd, of which 25,200 gpd was their claimed existing use, all of which were based on Reppun’s high estimate of 300,000 gad. (Kana, WT, 1/24/16, ¶¶ 2, 5, 15-17; SWUPA 2313 at 4; SWUPA 2314N at 3.) (Hui/MTF and OHA: FOF B-401-402.)

b. Parcel 1 is comprised of a portion of LCA 3963, confirmed by RP 6457; and Parcel 18 is comprised of a portion of LCA 3963, a portion of LCA 4296:1, confirmed by RP 5357, and four pō‘alima of the konohiki award to Kamāmalu, LCA 7713:24. Together, Parcels 1 and 18 include the majority of LCA 3963, a portion of LCA 4296:1, and the four pō‘alima. (Kana, WT, 1/24/16, ¶ 6.) (Hui/MTF and OHA: FOF B-405.)

c. The two LCAs are described as cultivated in numerous lo‘i without referencing any other use. The maps for LCA 3963 depict the four pō‘alima, which are part of Parcel 18. (Kana, WT, 1/24/16, ¶¶ 7-13; Exhs. 2313-Kana-1 to -4.) (Hui/MTF and OHA: FOF B-406.)

d. The Commission had granted provisional approval for Parcels 1 and 18, based on LCA 3963, but there was no mention of LCA 4296 and LCA 7713:24 for Parcel 18. (Provisional Order, Attachment C, Revised Exh. 7, p.11.) (Hui/MTF and OHA: FOF B-405.)

e. Parcel 1 is 0.315 acre and Parcel 18 is 1.251 acres, for a total of 1.57 acres. (Kana, WT, 1/24/16, ¶¶ 14-15.) (Hui/MTF and OHA: FOF B-407.)

f. The Kanas request appurtenant rights for all 1.57 acres, but approximately 10 percent of Parcel 18’s 1.251 acres is comprised of four pō‘alima of the konohiki award to Kamāmalu, LCA 7713:24, for which there is no information on acreage or other contents. (Exh. 2313-Kana-4.)

g. The Kanas were cultivating 0.084 acre of lo‘i as of April 30, 2008, reflecting a reduction in the amount they used to grow due to the lack of sufficient water. (Kana, WT, 1/24/16, ¶¶ 19-20; SWUPA 2314N, Attachments at 1, SWUPA 2313 at 4.) (Hui/MTF and OHA: FOF B-409-410.)

h. The Kanas intend to restore 1.06933 acres to lo'i cultivation, for a total of 1.153 acres. (Kana, WT, 1/24/16, ¶ 20; SWUPA 2314N at 3, Attachments at 1.) (Hui/MTF and OHA: FOF B-411.)

367. SWUPA 2353—Hiolani Ranch

a. On May 1, 2009, Hiolani Ranch filed an existing use SWUPA for TMKs No. (2) 3-2-007:001 (“Parcel 1”) and No. (2) 3-2-007:005 (“Parcel 5”). The request was for an estimated 108,000 gpd for macadamia nut trees: 29.0 acres on Parcel 1’s 39.96 acres, and all of Parcel 5’s 0.39 acres. (SWUPA 2353, p. 2, table 1, p. 4, table 3.)

b. Hiolani Ranch had requested recognition of appurtenant rights, and the Commission had granted provisional approval for 2 of 21 LCAs in Parcel 1, and no approval for one LCA in Parcel 5. (Provisional Order, Exhibits, pp. 66-67, Exh. 7.)

c. Hiolani Ranch did not submit written testimony nor participate in the contested case hearing.

368. SWUPAs 2278/2279N—Noel & Katherine Texeira

a. On April 23, 2009, Noel and Katherine Texeira filed existing and new use SWUPAs for TMK No. (2) 3-2-007:010, a 0.83-acre property for which they requested an existing use of an estimated 990 gpd for 0.33 acre of their yard and plants, and a new use of 1,050 gpd for 0.42 acre of grass for their goats. (SWUPA 2278, p. 2, table 1, p. 4, table 3, Addendum, p. 1-2; SWUPA 2279N, p. 2, table 1, p. 3, table 2, Addendum, p. 2.)

b. The Texeiras had claimed appurtenant rights and had been provisionally approved by the Commission for LCA 4389B:2, confirmed by RP 5404, described as pō'alima as boundary and 1 lo'i kalo, and for LCA 10550, confirmed by RP 5329, described as with multiple references to pō'alima as boundary, pauku kalo and 4 pō'alima, and “loi he 26.” (Exh. 2278-Teixeira; Exh. 2279N-Teixeira; Provisional Order, Attachment C, Revised Exh. 7, p. 11.)

c. The Texeiras did not submit testimony and did not participate in the contested case hearing.

369. SWUPA 2294—Bryan Sarasin Sr.

a. Bryan Sarasin Sr. filed for an existing use SWUPA on April 29, 2009, for TMK No. (2) 3-2-007:016 (“Parcel 16”). (SWUPA 2294, at 3.) (Hui/MTF and OHA: FOF B-412.)

b. Parcel 16 is 0.99 acres and is the entirety of LCA 44050:1, for which they request recognition of appurtenant rights of 297,000 gpd, based on Reppun's high estimate of 300,000 gpd, and a permit for 1,035,040 gpd. (SWUPA 2294 at 2-4, Addendum at 2; 2294-Sarasin-1, -5, -7, -11.) (Hui/MTF and OHA: FOF B-413.)

c. LCA 44050:1: the native and foreign testimonies describe 'āpana 1 as 42 lo'i with five pō'alima. (2294-Sarasin-1, -5, -7, -11; SWUPA 2294, at 4.) (Hui/MTF and OHA: FOF B-414.)

d. Provisional recognition was granted by the Commission, noting LCA 4005-o, but Sarasin later provided an explanation and documents that the correct LCA was 44050:1. (Provisional Order, Attachment C, Revised Exh. 7, p. 11; Exh. 2294-Sarasin-1, p. 1-2, Letter of September 28, 2015.)

e. The 1,035,040 gpd permit request consists of:

1. 1,031,040 gpd for 0.4 acres of aquaculture (catfish);
2. 2,700 gpd for 0.009 acre of lo'i kalo;
3. 1,000 gpd for 0.4 acre of their nursery; and
4. 300 gpd for 0.1 acre of their non-commercial garden. (SWUPA 2294 Addendum at 2; Exh. B pp. 6A&B; Sarasin, Tr., 7/13/16 at p. 17, l. 7 to p. 19, l. 23.) (Hui/MTF and OHA: FOF B-418.)

f. Aquaculture:

1. The 0.4 acres of aquaculture consist of four ponds of varying, unspecified sizes which do not cover the entire 0.4 acres.
2. Ponds 1 and 2 are each fed by 4-inch pipes from the kuleana 'auwai. Pond 1 discharges into the kalo lo'i, along with additional water from the 'auwai. Pond 2 discharges into the Sarasins' ditch, which then discharges back into the 'auwai. Ponds 3 and 4 are each fed by 2-inch pipes with water from the lo'i that has received water primarily from pond 1, and each discharges into the ditch, which then discharges back into the 'auwai.
3. The estimate of 1,031,040 gpd for the 0.4 acres of aquaculture consists of:
 - a. Pond 1: 146,160 gpd;
 - b. Pond 2: 439,200 gpd;

- c. Pond 3: 146,160 gpd; and
 - d. Pond 4: 146,160 gpd.
4. These estimates are based on a chart of flows estimated by pipe size and length of the outflow from the pipe:
- a. Pond 1's estimate is based on a 4-inch pipe and outflow length of 15 inches;
 - b. Pond 2, on a 4-inch pipe and outflow length of 23 inches;
 - c. Pond 3, on a 2-inch pipe and outflow length of 29 inches; and
 - d. Pond 4, on a 2-inch pipe and outflow length of 29 inches.
5. The chart states that "(t)he accuracy of these methods will vary up to 10%. The pipes must be flowing full." However, photos provided by the Sarasin 'ohana show:
- a. the pipe for pond 1 had less than 4 inches—not 15 inches—of horizontal flow;
 - b. the pipe for pond 2 had about 2 to 4 inches—not 23 inches—of horizontal flow;
 - c. the pipe for pond 3 had about 6 inches—not 29 inches—of horizontal flow and the pipe was not full; and
 - d. the pipe for pond 4 had a splashy flow—not 29 inches—and the pipe was not full. (SWUPA 2294, Addendum at 2, Exh. pp. 1-7.)
6. The Sarasin 'ohana also do not explain:
- a. why the inflow into pond 2 is about 3 times the inflow into pond 1;
 - b. why the flows into ponds 3 and 4 are double the amount coming from pond 1; and
 - c. why they include the flows into ponds 3 and 4 in the total flow, when their flows come from pond 1.

g. In contrast to this estimate of existing use for their aquaculture operations, Sarasin states that “the delivery of our kuleana water has been unreliable, limiting our existing uses.” (SWUPA 2294, Addendum, at 1.)

h. The Sarasin ‘ohana also state that they know what stocking densities for their current water supply maximizes efficiency, and to maintain heavily stocked fishponds requires a good flow of water to oxygenate, cool, and cleanse the ponds. (2294-Sarasin-10.) (Hui/MTF and OHA: FOF B-416.)

i. However, even if their estimates were reasonable and accurate, they never correlate these flows—which are only estimates of flows from specified pipe sizes and the length of the exiting flow—with requirements for specified stocking densities for catfish.

j. The Sarasin ‘ohana’s existing use estimate of 2,700 gpd for their 0.009 acre kalo lo‘i is again not an actual measurement but based on Reppun’s high estimate (0.009 acre x 300,000 gad). (SWUPA 2294, Addendum at 2.) (Hui/MTF and OHA: FOF B-418.)

k. Similarly, their existing use estimate of 1,000 gpd for their nursery is based on the Commission’s Waiāhole duty for diversified agriculture (0.4 acre x 2,500 gad). (SWUPA 2294, Addendum at 2.) (Hui/MTF and OHA: FOF B-418.)

l. Finally, their 300 gpd for their 0.1-acre home garden is based on the 2002 State of Hawai‘i Water System Standard for Maui County domestic cultivation of 3,000 gad (0.1 acre x 3000 gad). (SWUPA 2294, Addendum at 2.) (Hui/MTF and OHA: FOF B-418.)

370. SWUPA 2361N—Kathleen DeHart

a. Kathleen DeHart filed for a new use SWUPA on April 23, 2009 for TMK No. (2) 3-2-011:004 (“Parcel 4”), on which she has lived since 1984 and which her family has owned since the Māhele. (De Hart, WT, 1/20/16, ¶ 1.) (Hui/MTF and OHA: FOF B-429.)

b. Parcel 4 is 0.5 acre and comprised of a portion of LCA 3887B, confirmed by RP 6150. (De Hart, WT, 1/20/16, ¶ 9.) (Hui/MTF and OHA: FOF B-434.)

c. DeHart requests recognition of appurtenant rights for 150,000 gpd and a permit for 7,350 gpd—6,000 gpd for a 30 ft. x 30 ft. lo‘i kalo and 1,350 gpd for 0.45 acre of her yard and garden, based on Reppun’s high estimate for lo‘i kalo and Maui County domestic cultivation standards of 3,000 gad. (De Hart, WT, 1/20/16, ¶¶ 4, 14-16; SWUPA 2361N at 4, Addendum at 2.) (Hui/MTF and OHA: FOF B-430, B-436, B-437.)

d. DeHart states that the native register supporting LCA 3887B describes the land as containing 33 lo‘i, one hala tree, and a pond. DeHart states that the high number of lo‘i, compared to a single hala tree, indicates this kuleana was lo‘i land at the time of the Māhele. DeHart did not address the presence of a pond. (De Hart, WT, 1/20/16, ¶¶ 8-9; Exh. 2361-DeHart-1, p. 3.) (Hui/MTF and OHA: FOF B-433.)

e. The Commission had granted provisional recognition, noting for LCA 3887B the 33 lo‘i and also multiple references to pō‘alima as survey boundaries but no mention of a pond or hala tree. (Provisional Order, Attachment C, Revised Exh. 7, p. 14.)

f. However, copies of the original documents submitted by DeHart have the “B” and “C” on LCAs 3887B and 3887C crossed out and reversed, making 3887B into 3887C and vice-versa. The English translation provided by DeHart refers to 3887C by Mahoe, which was 3887B before it was hand-corrected to 3887C. (Exh. 2361-DeHart-1, pp. 2-3.)

g. Clarification needs to be provided as to whether the LCA granted to Mahoe is the LCA from which DeHart’s Parcel 4 is derived.

h. DeHart arrived at the 0.45 acre for her yard and commercial garden by subtracting the square footage of her house (footage not specified) and her proposed lo‘i (0.5 acre – 0.05 acre = 0.45 acre). (De Hart, WT, 1/20/16, ¶ 16; SWUPA 2361N, Addendum at 2.) (Hui/MTF and OHA: FOF B-429.)

371. SWUPAs 2231/2232N—Diannah Goo

a. On April 29, 2009, the Goo ‘ohana filed an existing use SWUPA for six parcels and a new use SWUPA for one of these parcels and another parcel. The existing use SWUPA included TMK Nos. (2) 3-2-011:006 (“Parcel 6”), (2) 3-2-011:019 (“Parcel 19”), (2) 3-2-011:065 (“Parcel 65”), (2) 3-2-011:066 (“Parcel 66”), (2) 3-2-011:067 (“Parcel 67”), and (2) 3-2-011:079 (“Parcel 79”). The new use SWUPA included Parcel 79 and TMK No. (2) 3-2-011:078 (“Parcel 78”). Parcels 78 and 79 are subdivisions of Parcels 66 and 67. (Goo, WT, 1/11/16, ¶ 1; SWUPA 2231 at 5; SWUPA 2232N at 3; Provisional Order, Exhibits, p. 61, Exh. 7.) (Hui/MTF and OHA: FOF B-419.)

b. Collectively, these parcels are referred to as the “makai parcels,” which have been in the Goo ‘ohana on Diannah Goo’s husband’s side for generations. SWUPAs for the “mauka parcels” have been filed under SWUPAs 2233/2234N and 2365N. (*Id.*) (Hui/MTF and OHA: FOF B-419.)

c. Parcel 6 is 0.27 acre, Parcel 19 is 0.15 acre, Parcel 65 is 0.28 acre, Parcel 66 is 0.22 acre, Parcel 67 is 0.07 acre, Parcel 78 is 0.23 acre, and Parcel 79 is 0.23 acre, for a total of 1.45 acres. (*Id.*, ¶¶ 24-25; SWUPA 2231 at 5; SWUPA 2232N at 3.) (Hui/MTF and OHA: FOF B-425.)

d. The Goo ‘ohana requests recognition of appurtenant rights to these makai parcels which they estimate at 435,000 gpd, and a permit for existing and future uses estimated at 141,600 gpd, of which 3,600 gpd was the estimated existing use as of April 30, 2008 for six households. No actual measurements were taken, and estimates were based on Reppun’s high estimate of 300,000 gad, and on 2002 State of Hawai‘i Water System Standard for Maui County single-family homes of 600 gpd. (*Id.*, ¶¶ 7, 38-40; SWUPA 2231 at 2; SWUPA 2232N, Attachment at 2.) (Hui/MTF and OHA: FOF B-420, B-427-428.)

e. All of these parcels derive from LCA 8366:1 and 2, confirmed by RP 5327. The Goo ‘ohana state that the foreign testimony supporting LCA 8366:1 and 2 describe each ‘āpana as a “section of kalo and kula land,” and that ‘āpana 1 contained two pō‘alima and ‘āpana 2 contained five pō‘alima. The Goo ‘ohana believe a majority of these ‘āpana were cultivated in wetland kalo at the time of the Māhele, given the existence of the seven pō‘alima and the high concentration of lo‘i kalo in the Waihe‘e area generally. In addition, an ‘auwai runs across these parcels, furthering their conclusion that most of the LCA was in lo‘i kalo, as opposed to kula. (*Id.*, ¶¶ 20, 23; Exh. 2231-Goo-1; SWUPA 2231 Exhs. B (map) and C (photos).) (Hui/MTF and OHA: FOF B-423, B-424.)

f. Documents provided under SWUPAs 2231/2232N contain descriptions of sections 1 and 2 as being “taro pauku and pasture,” and section 2 as containing two pō‘alima, not five, with no mention of pō‘alima in section 1. But the petitioner stated that he had 22 lo‘i and two kula for a total of 24 parcels. (SWUPA 2231, Attachment, p. 12-13.)

g. Provisional recognition was granted by the Commission. The commentary included: “LCA ref. to polima as boundary. NR ref. to 25 loi. NT refer to sections 1 and 2 as taro pauku and pasture. FT ref. to sections of lois for Sections 1 and 2.” (Provisional Order, Attachment C, Revised Exh. 7, pp. 7-8.) (Hui/MTF and OHA: FOF B-425.)

372. SWUPA 2706N—Hawaiian Islands Land Trust

a. Hawaiian Islands Land Trust (“HILT”), successor to the Maui Coastal Land Trust (“MCLT”), stated that it filed a SWUPA for a new use on August 3, 2010, for the

Waihe'e Coastal Dunes and Wetlands Refuge at TMK Nos. (2) 3-2-010:001 ("Parcel 1") and (2) 3-2-010:002 ("Parcel 2"). (Fisher, WDT, February 3, 2016, ¶¶ 1, 4, 6.) (Hui/MTF and OHA: FOF B-90.)

b. However, SWUPA 2706N was filed only for Parcel 1, and Parcel 2 was first mentioned in HILT's written testimony, dated February 3, 2016. (*Id.*, ¶ 1.)

c. Similarly, HILT offered documentation in the appurtenant rights provisional recognition process only for Parcel 1, for which, after supplementary documentation, its application was approved. (Provisional Order, Attachment C, Revised Exh. 7, pp. 1-2.)

d. During the contested case hearing, HILT sought quantification of appurtenant rights and water-use permits for both Parcel 1 and the newly identified Parcel 2. (Fisher, WDT, February 3, 2016.)

e. For Parcel 1, in the 'ili of Maka'aka on the mauka side, HILT currently has about one acre in lo'i kalo, using only about 30,000 gpd coming from a kuleana 'auwai on the south side of Waihe'e River, receiving water from a pipe in the Spreckels Ditch between Waihe'e River and Waiehu Stream (See Figure 1). Its permit request is for 600,000 gpd for two acres.¹⁸ (*Id.*, ¶ 60; Fisher, Tr., July 12, 2016, p. 102, ll. 7-12.)

f. Ancient Hawaiians founded Kapoho Village no later than 1464 C.E., and around this time, Native Hawaiians built an extensive loko kalo i'a system in and around the wetlands with an 'auwai to supply this area with freshwater from Waihe'e River. A loko kalo i'a is a system that utilizes water flowing throughout taro patches in order to raise fish. Both the loko kalo i'a system and 'auwai are registered as historic sites (State Inventory Site Nos. 2405 and 2464 respectively), highlighting their importance for native culture and practices. (*Id.*, ¶ 63.) (Hui/MTF and OHA: FOF B-102.)

g. The Waihe'e Refuge includes over 7,000 feet of marine shoreline, 103 acres of dune ecosystem, 27 acres of marsh wetlands, and more than 10 acres of riparian wetlands along Waihe'e River and Kalepa Gulch between Waiehu and Waihe'e. Important cultural resources are located throughout the Refuge, including the ancient sites of Kapoho Village and several heiau. The Refuge features the seven-acre loko kalo i'a and 'auwai connecting the loko kalo i'a to Waihe'e River. (*Id.*, ¶ 2.) (Hui/MTF and OHA: FOF B-91.)

¹⁸ HILT filed on August 3, 2010, well past the existing use deadline of April 30, 2009.

h. The loko kalo i‘a was used for hundreds of years for fish and wetland taro production and rice cultivation in the early 20th century. The ‘auwai continued to run until the 1920s. (*Id.*, ¶ 64.) (Hui/MTF and OHA: FOF B-103.)

i. The deed to the Refuge contains a reservation of water rights, with the exception of six kuleana within Parcel 1 and one kuleana that is the entirety of Parcel 2. All the deeds came from the same party, Wailuku Agribusiness (predecessor to WWC) in February 1988 to an intervening party, from which MCLT purchased them. The portions that were not reserved had clouded titles and could not be reserved. (*Id.*, ¶¶ 7-8, 49; Fisher, WDT, February 3, 2016, p. 98 l. 17 to p. 99, l. 7.) (Hui/MTF and OHA: FOF B-95.)

j. The six kuleana in Parcel 1, with the corresponding acreage in Parcel 1, were:

1. LCA 4296B:2, confirmed by RP 5357, was a fishpond (0.95 acres);
2. LCA 4389D:2.1 & 2.2, confirmed by RP 6752,
 - a. 2.1 was a house lot (0.52 acres)
 - b. 2.2 was a fishpond (0.15 acres)
3. LCA 3886B:2 & 3, confirmed by RP 5991 were both houselots (0.34 acres and 0.55 acres);
4. LCA 4405B:2, confirmed by RP 2163, was a houselot (0.28 acres);
5. LCA 4405C:2, confirmed by RP 6145, consisted of 5 lo‘i (0.2 acres); and
6. LCA 4405N:2, confirmed by RP 5260, was a fishpond (0.17 acres).

(*Id.*, ¶¶ 8, 11-14, 25-26, 30, 34, 45-46; Exhs. 2706-HILT-2, -3, -9, -11, -13, -19.)
(Hui/MTF and OHA: FOF B-96, B-97.)

k. Collectively, the six kuleana totaled 2.98 acres and were comprised of:

1. 0.2 acre of lo‘i kalo,
2. 1.27 acres of fishponds, and
3. 1.69 acres of houselots.

1. The original request under SWUPA 2706N was for wetland taro on 2 of 3 acres, or on the 2.98 acres which did not have water reservations, less than one-tenth of which was in kalo lo‘i at the time of the Māhele. (SWUPA 2706N, August 3, 2010.)

m. HILT then sought appurtenant rights of 108,120 gpd:

1. Reppun’s 300,000 gad for 0.2 acre of lo‘i kalo (or 60,000 gad);
2. State of Hawai‘i Water System Standard for Maui County single-family homes of 600 gpd per household for each of the fourouselots (or 2400 gpd); and
3. the Commission’s 1992 O‘ahu Water Management Plan of 36,000 gad for 1.27 acres of fishponds (44,720 gpd).¹⁹ (Fisher, WDT, February 3, 2016, ¶ 57.) (Hui/MTF and OHA: FOF B-99.)

n. For the hearing, HILT offered documentation of appurtenant rights on the rest of the kuleana that comprised Parcel 1, the corresponding deeds of which had water reservations when titles passed in February 1988. A large portion of Parcel 1 is covered by LCA 7713:24 to Victoria Kamāmalu, but within it, many kuleana were awarded to maka‘āinana. Including the six kuleana, Parcel 1’s kuleana awards totaled 15.49 acres and was comprised of:

1. 5.86 acres of lo‘i kalo.
2. 6.28 acres of fishponds.
3. 0.2 acres of dryland crops.
4. 8ouselots.

(Fisher, WDT, February 3, 2016, ¶¶ 8-48, 56-57.)

o. HILT now seeks recognition of appurtenant rights for 1,989,380 gpd, based on 300,000 gad for the 5.86 acres of kalo lo‘i; 36,000 gad for the 6.28 acres of fishponds; 2,500 gad for the 0.2 acres of dryland crops; and 600 gpd for each of the 8ouselots. (*Id.*, ¶ 56.)

p. The kuleana that is Parcel 2 is LCA 3775:1, confirmed by RP 5360, and was in “loi and lauhala” at the time of the Māhele. Based on the lo‘i walls that still exist on Parcel 2, which is a total of 3.47 acres, Fisher estimates that about 3 acres was in lo‘i kalo cultivation and 0.47 acres was used for lauhala. (*Id.*, ¶ 51.) (Hui/MTF and OHA: FOF B-98.)

¹⁹ The total should be 107,120 gpd, not 108,120 gpd.

q. HILT’s request for appurtenant rights for Parcel 2 is for 901,175 gpd, based on Reppun’s 300,000 gad for three acres of lo‘i kalo and 2,500 gad—the water duty for diversified agriculture the Commission used in *Waiāhole I*—for 0.47 acres. (*Id.*, ¶ 58.) (Hui/MTF and OHA: FOF B-99.)

r. HILT’s new use permit request is for 2.7 mgd:

1. 600,000 gpd for Parcel 1 from the South Waihe‘e kuleana ‘auwai, based on Reppun’s high estimate of requirements of 300,000 gad on two acres; and
2. 2.1 mgd for the seven-acre loko kalo i‘a, with water from Waihe‘e River, based on Reppun’s high estimate of requirements of 300,000 gad on seven acres, of which 3 acres is Parcel 2.

(*Id.*, ¶¶ 66-67; Fisher, Tr., July 12, 2016, p. 103, l. 24 to p. 104, l. 2.)

s. HILT’s inclusion of Parcel 2 and its new use request for a seven-acre loko kalo lo‘i was timely, as testimony was filed in February 2016, and the deadline for new use submittals was July 1, 2016, ten days before the beginning of the hearings, *supra*, FOF 26. (HAR § 13-167-54(d)).

t. The Commission finds that, at the time of the Māhele, water was being used for fishponds, at an approximate rate of 14,000 gad *supra*, COL 76. Appurtenant rights for kalo lo‘i are 150,000 gad and none forouselots and kula. Expert testimony did not address water use for fishponds at the time of the Māhele. HILT claimed 44,720 gad for 1.27 acres of fishponds, based on 36,000 gad from the Commission’s 1990 Oahu Water Management Plan. However, that water budget was for raising freshwater prawns, with a range of 14,000 gad to 36,000 gad.

c. Field 4 ‘auwai

373. The following SWUPAs receive water from the Spreckels Ditch via the Field 4 ‘auwai (*See* Figure 1).

374. SWUPA 2185N—Na Mala O Waihee

a. On April 15, 2009, Na Mala O Waihee Private Water Company, Inc. filed a new use SWUPA for TMK (2) 3-2-013:008 (“Parcel 8”), a 25.86-acre property, for which it requested 29,570 gpd for use on all 25.86 acres for macadamia nut trees and truck crops, at a rate of 1,143.9 gad. (SWUPA 2185N, p.2, table 1, p. 3, table 2.)

b. Parcel 8 was subsequently subdivided into Parcels 13 and 62-67. (Provisional Order, Attachment C, Revised Exh. 7, pp. 2-3.)

c. The applicant did not claim appurtenant rights nor participate in the Provisional Approval process. (Provisional Order, Attachment C, Revised Exh. 7, pp. 2-3.)

d. Na Mala O Waihee did not submit written testimony nor participate in the contested case hearing.

375. SWUPAs 2250/2251N—Alfred Kailiehu Jr. & Ina Kailiehu

a. Alfred Kailiehu, Jr. filed SWUPAs for existing and new uses on April 23, 2009, for TMK No. (2) 3-2-007:017 (“Parcel 17”), which has been in the Kailiehu family from about the Māhele. (Kailiehu, WT, 12/23/15, ¶ 1; SWUPA 2250 at 4; SWUPA 2251N at 3’ Kailiehu, Tr., 7/12/16, p. 89, l. 16 to p. 90, l. 6.) (Hui/MTF and OHA: FOF B-438.)

b. Parcel 17 is 0.51 acre, for which they seek appurtenant rights of 153,000 gpd, and a permit for 76,425 gpd, of which 1,425 gpd is the existing use as of April 30, 2008, based on Reppun’s high estimate for kalo and Maui County single-family home use. (*Id.*, ¶¶ 4, 14.) (Hui/MTF and OHA: FOF B-439.)

c. Parcel 17 is a portion of LCA 3299B, confirmed by RP 6206. Native testimony supporting LCA 3299B states that it was “kalo and kula land, and 3 poalima loi within.” (*Id.*, ¶ 8; Exh. 2250-Kailiehu-1.) (Hui/MTF and OHA: FOF B-443.)

d. The Commission provisionally approved appurtenant rights, noting that there were “(m)ultiple references to poalima as survey boundary. NT refer to kalo and kula land.” (Provisional Order, Attachment C, Revised Exh. 7, p. 14.)

e. The Kailiehus believe that all of Parcel 17 was cultivated in lo‘i kalo at the time of the Māhele, because it has a gentle slope and ancient rock walls and three pō‘alima within, indicating that their parcel was within the lo‘i portion of the LCA, as opposed to the kula portion. (*Id.*, ¶ 8.) (Hui/MTF and OHA: FOF B-442.)

f. Appurtenant rights attach to the entire LCA, and Parcel 17’s appurtenant right derives from the amount of water being used at the time of the Māhele on LCA 3299B, and not just from the part of the LCA on which Parcel 17 now stands.

g. Without further specificity, a description of “kalo and kula land” would reflect a 50:50 split between kalo and kula, or 50 percent lo‘i kalo, *supra*, FOF 168.

h. The Kailiehus have about 0.00275 acre in lo‘i kalo, estimating their use at 825 gpd, based on Reppun’s high estimate (0.00275 acre x 300,000 gad), and request additional water for an additional 0.25 acre of lo‘i, which is the amount their ‘ohana historically cultivated on their land, and for which they request an additional 75,000 gpd (0.25 acre x 300,000 gad). *Id.*, ¶¶ 15-17; SWUPA 2250, Attachment A at 2.) (Hui/MTF and OHA: FOF B-447, B-448.)

376. SWUPAs 2318/2319N—Nolan Ideoka and Lester Nakama

a. The Ideokas and Lester Nakama filed existing and new use SWUPAs for TMK No. (2) 3-2-007:018 (“Parcel 18”) on April 30, 2009. (Nakama, WT, 2/3/16, ¶ 31; SWUPA 2318 at 4; SWUPA 2319N at 3.) (Hui/MTF and OHA: FOF B-449.)

b. Parcel 18 is 1.1 acres and is the entirety of LCA 4284D, confirmed by RP 5984, which was comprised of “34 lois and one small kula.” Ancient lo‘i walls still exist throughout Parcel 18, and they estimate about 1 acre of the 1.1 acre was in lo‘i cultivation at the time of the Māhele. The Commission had granted provisional approval. (Nakama, WT, 2/3/16, ¶¶ 36, 38-39; Exh. 2318-Ideoka-1; Provisional Order, Attachment C, Revised Exh. 7, p. 14.) (Hui/MTF and OHA: FOF B-452.)

c. Using Reppun’s high estimate, they estimate appurtenant rights as 300,000 gpd (1.0 acre x 300,000 gad). (Nakama, WT, 2/3/16, ¶¶ 40-41.) (Hui/MTF and OHA: FOF B-453.)

d. Estimated use as of April 30, 2008 was 96,425 gpd to irrigate 0.55 acres of lo‘i kalo. The estimate was arrived by subtracting the estimated 1,425 gpd used by the Kailiehus from the 97,850 gpd metered flow in the ‘auwai by Wailuku Water Company. After the water flows through the lo‘i, some is used to irrigate 0.5 acre of the yard and garden. They claim the water is insufficient and causes problems such small corms, taro rot, and uncontrollable weeds. (Nakama, WT, 2/3/16, ¶¶ 43-45; SWUPA 2318 Attachment 1 at 2, Exhs. 2,3.) (Hui/MTF and OHA: FOF B-455-456.)

e. Current cultivation would be expanded by 0.22 acre, from 0.55 acre to 0.77 acre, which they estimate would require 231,000 gpd (0.77 acres x 300,000 gad). (Nakama, WT, 2/3/16, ¶ 47; SWUPA 2318 at 4; SWUPA 2319N at 3.) (Hui/MTF and OHA: FOF B-458.)

d. Reservoir 25/WWC Line

377. The following SWUPAs receive water from the Spreckels Ditch via Reservoir 25/WWC Line. *See* Figure 1.

378. SWUPA 2144—Living Waters Foundation, LLC

a. On April 29, 2009, Living Waters filed an existing use SWUPA for TMK. No. (2) 3-2-013:015 (“Parcel 15”), a 550-acre property for which it requested a metered 22, 938 gpd for bananas, tapioca, beans, okra, dryland taro, and eggplant on 22 acres, an average of 1,043 gad. (SWUPA 2144, p. 2, table 1, p. 4, table 3.)

b. Because Living Waters did not submit written testimony in support of its SWUPA, two lessees, Noel Baloaloo and Justina Evangelista, provided written and oral testimony. At the time the SWUPA was submitted, there were eight farmers but now there are four farmers in all, with Baloaloo farming 4 acres, Evangelista farming 6 acres, and two others farming the rest. (SWUPA 2144, Attachment (photo); Baloaloo and Evangelista, WT, 8/30/16, p. 1; Baloaloo, Tr., 9/19/16, p. 122, l. 4 to p. 131, l. 23.)

c. No appurtenant rights were claimed on the SWUPA, but documents were submitted during the provisional approval process, and 6 of 15 LCAs were approved as referencing water use. (Provisional Order, Attachment C, Revised Exh. 7, pp. 14-15.)

d. Of the LCAs listed on the provisional approval order, LCA 781:2 is not shown, and cross-examination attempted to show that this LCA was where the 22-acre agricultural activities take place, but Baloaloo was not sure where the 22-acre parcel was on the map he was shown. (Baloaloo, Tr. 9/19/16, p. 126, l. 19 to p. 128, l. 6.)

379. SWUPA 2153—Robert Hanusa

a. On April 23, 2009, Robert Hanusa filed an existing use SWUPA for TMK No. (2) 3-2-016:025 (“Parcel 25”) for a metered use of 900 gpd for 0.25 acre of household landscape irrigation on his 0.5 acre property. (SWUPA 2153, p. 2, table 1, p. 4, table 3; Hanusa, Tr., 9/19/16, p. 40, l. 15 to p. 44, l. 20.)

b. Hanusa bought Parcel 25 in 1973 from Jim Stinson Realty, and is half of LCA 3434, confirmed by RP 6166, described as kalo and kula with 3 pō‘alima within it and a pō‘alima on one boundary. (Hanusa, Tr., 9/19/16, p. 40, ll. 22-23; Exh. 2153-Hanusa-1, -3, 5-8.)

c. The Commission had granted provisional approval. (Provisional Order, Attachment C, Revised Exh. 7, p. 15.)

380. SWUPA 2348—Michael Bailie

a. On April 28, 2009, Michael Bailie filed an existing use SWUPA for TMK No. (2) 3-2-006:004, a 5.2-acre he purchased from Wailuku Agribusiness in 2000 and on which

he uses a metered use of 1,840 gpd to irrigate 2 acres of landscape, 2.3 acres of bamboo, and 1 acre of macadamia nuts. (Bailie, WT, 9/2/16, ¶¶ 1-4; SWUPA 2348, p. 2, table 1, p. 4, table 3.)

b. Bailie did not claim appurtenant rights nor participate in the provisional approval process. (SWUPA 2348, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 15.)

c. Bailie did not participate in the contested case hearing.

381. SWUPA 2182—Cecilia Chang (Jung)

a. Cecilia Chang and Heinz Jung, her husband who has since passed away, filed a SWUPA for an existing use on April 21, 2009, for TMK No. (2) 3-2-016:001 (“Parcel 1”). (Chang, WT, 12/9/15, ¶ 1.) (Hui/MTF and OHA: FOF B-459.)

b. Chang requests recognition of appurtenant rights in the estimated amount of 150,000 gpd, based on Reppun’s high estimate of 300,000 gad for 0.5 acre of Parcel 1’s 0.683 acre (0.5 acres x 300,000 gad), and an existing use of 684 gpd from meter readings for 0.34 acre of a lawn and non-commercial garden. (*Id.*, ¶¶ 4, 11-13, 15; Chang, Tr., 7/12/16, p. 74, ll. 1-8.) (Hui/MTF and OHA: FOF B-460, B-463, B-465.)

c. Review of her deed from 1933 shows no reservations of water rights. (*Id.*, ¶ 2.)

d. The Commission granted provisional approval based on LCA 3446. (Provisional Order, Attachment C, Revised Exh. 7, p. 15.)

e. Parcel 1 is 0.683 acres and comprised of portions of two LCAs, No. 3446, confirmed by RP 3938, and No. 8559B:20.1, with approximately 0.624 acre or 91 percent falling under LCA 3446 and 2,252 square feet or 9 percent within LCA 8559B:20.1 to Lunalilo. (*Id.*, ¶ 9.)

f. LCA 3446 is described as “one piece of kalo and kula land,” with “5 poalima loi in it;” “1 taro section and pasture” with “5 poalima there;” and “aina lo‘i,” specifying “lo‘i 16” and “10 lo‘i.” Based on LCA 3446 being largely described as containing lo‘i, Chang estimates that 80 percent, or 0.499 acre (0.624 acre x 0.8) of the LCA was in wetland kalo cultivation at the time of the Māhele. (*Id.*, ¶ 10.) (Hui/MTF and OHA: FOF B-462.)

g. She therefore estimates that she has appurtenant rights to 0.5 acre of Parcel 1’s 0.683 acre. (*Id.*, ¶ 11.) (Hui/MTF and OHA: FOF B-463.)

382. SWUPA 2593N—John Varel (Koolau Cattle Co.)

a. John Varel, an organic farmer who has been farming in Waihe‘e and Waiehu since 2002, owns four properties in Waihe‘e and Waiehu for which he is seeking permits, three of which he acquired after the SWUPAs were filed and is thus pursuing in place of the original applicants: SWUPAs 2262 and 2263N (Paleka), 2298 and 2299N (Varel), 2593N (Koolau Cattle Co.), and 3470N (Emmanuel Lutheran Church). All except the previous Paleka property are under 20-year agriculture designation are in his personal trust to preserve them as conservation and agricultural lands in perpetuity. (Varel, WT, 9/12/16, ¶¶ 1-3; Varel, Tr., 9/19/16, p. 132, ll. 5-17.)

b. Koolau Cattle Co. filed a SWUPA for a new use on February 22, 2010 for TMK Nos. (2) 3-2-009-001 through -005 (“Parcels 1-5”), a cluster property where all the TMKs are contiguous and comprise 113.589 acres. (*Id.*, ¶ 74.)

c. Water rights were reserved by Wailuku Ag. when it was sold to Dwayne Betsill of Koolau Cattle Co. in 2004. Varel bought these properties from Veda Das, who had previously subdivided TMK 3-2-009-001 into Parcels 1-5. Varel bought Parcel 1 in 2013 and the other four parcels in 2015. (*Id.*, ¶¶ 74, 77.)

d. Varel states that the previous owners incorrectly filed a new use permit although they were existing users. They had a contract with WWC, water was on the mac nut orchards and on the adjacent pasture lands that was being put into dryland taro. The 73-acre macadamia nut orchard and 20 acres of dryland taro on Parcel 1 was being irrigated at the time of designation in 2008. (*Id.*, ¶ 75; Varel, Tr., 9/19/16, p. 140, ll. 7-19.)

e. SWUPA 2593N, which was filed on February 22, 2010, before Vedas subdivided TMK (2) 3-2-009-001 into five parcels, was filed for TMK (2) 3-2-009-001 and ten other TMKs: (2) 3-013-013 and -035 to -043. (SWUPA 2593N, p. 2, table 1, p. 3, table 2.)

f. Parcel 1 was listed at 113 acres, of which 15 acres of pasture was irrigated at 21,135 gpd and 26 acres of vegetables and macadamia nuts were irrigated at 295,000 gpd. Varel identifies the cluster of Parcels 1-5 as 113.589 acres. (SWUPA 2593N, p. 2, table 1; *Id.*, ¶ 74.)

g. The acreage of the current Parcels 1-5 are as follows:

1. Parcel 1:73.09 acres.
2. Parcel 2:20.969 acres.

3. Parcel 3: 9.034 acres.
4. Parcel 4: 5.393 acres.
5. Parcel 5: 5.103 acres.

(*Id.*, ¶¶ 106-109, 114.)

- h. Varel requested a water-use permit for 551,477 gpd as follows:
 1. Parcel 1: 321,596 gpd for 73.09 acres of macadamia nuts at 4,400 gad.
 2. Parcel 2: 59,400 gpd
 - a. 17,500 gpd for 7 acres of fruit trees at 2,500 gad.
 - b. 2,500 gpd for 1 acre of organic garden at 2,500 gad.
 - c. 35,200 gpd for 8 acres of macadamia nuts at 4,400 gad.
 - d. 4,200 gpd for the domestic needs of 7 houses at 600 gpd for each.
 3. Parcel 3: 69,562 gpd for 9.034 acres for feed and forage pasture at 7,700 gad.
 4. Parcel 4: 83,325 gpd for 25 aquaponic greenhouses at 3,333 gpd each to produce 80,000 pounds of tomatoes annually.
 5. Parcel 5: 17,595 gpd
 - a. 6,375 gpd for 2.55 acres of fruit trees.
 - b. 11,220 gpd for 2.55 acres of macadamia nuts at 4,400 gad.

(*Id.*, ¶¶ 115-143.)

i. Of the 113 acres, 73 acres are in macadamia nuts and have no water. Of the remaining 40 acres: 1) nine acres are still in pasture; 2) Varel plans to put the 25 aquaponic greenhouses on five acres, with the water coming out at the end going to additional fruit trees that he will be planting on the perimeter; 3) five acres currently split between macadamia nuts and pasture will be put into fruit trees or hydroponic greenhouses, whichever is the more cost-effective measure; and 4) 20 acres are for the seven houses for his workers on which he has also planted 300 fruit trees. Water there is a 6,000 gallon tank for the fruit trees, trucked in from what he can access from his well or from leaks from the Waihe'e Ditch (See FOF 328 (SWUPA 2298/2299N—Varel).) (Varel, Tr., 9/19/16, p. 141, l. 12 to p. 142, l. 11; p. 159, ll. 2-11.)

j. On the pasture land, Varel has a tenant, Alan Mendez from the previous owner, who has 15-20 head of cattle on it. Since Varel has owned it, there has been enough rain that the grass is thick without irrigation. (Varel, Tr., 9/19/16, p. 149, l. 15 to p. 150, l. 7.)

k. Varel states that he currently uses a combination of catchment water, water that he trucks in, and a reliance on rain for the agricultural uses on the property, but it is not enough water for his needs. (*Id.*, ¶ 147.)

l. In the original SWUPA, Koolau Cattle Company had claimed appurtenant rights, but in the provisional approval process, no documentation was provided. (SWUPA 2593N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, pp. 15-16.)

m. In his written testimony of September 12, 2016, Varel claimed appurtenant rights as follows:

1. It was not possible to quantify appurtenant rights on Parcels 2-5, because they are parts of LCAs or grants which do not describe what was cultivated on them during the Māhele. (*Id.*, ¶¶ 106-109.)
2. Parcel 1 is composed of several LCAs, including all of LCA 2654, confirmed by RP 5995, and all of LCA 2413, confirmed by RP 5349. The remaining 64.59 acres consist of LCA 7713:24, confirmed by RP 4475.
 - a. LCA 7713:24 does not describe what was in cultivation at the time of the Māhele, due to the vast expanse of the award.
 - b. LCA 2654 was 2.98 acres and entirely cultivated in kalo.
 - c. LCA 2413 was 5.52 acres and contained kalo, kula, and a hale.

(*Id.*, ¶¶ 90-92, 94, 96-97.)

n. Varel then concluded that Parcel 1 has appurtenant rights of 1,451,200 gpd, based on the following:

1. LCA 2654: 894,000 gpd, based on 2.98 acres times Reppun's high estimate of 300,000 gad.
2. LCA 2413: 557,200 gpd, based on:
 - a. dividing 5.52 acres equally between kalo, kula, and a hale, so that:

- i. kalo: 552,000 gpd, based on 1.84 acres x 300,000 gad.
- ii. kula: 4,600 gpd, based on 1.84 acres x 2,500 gad for diversified agriculture.
- iii. hale: 600 gpd, based on 600 gpd for a single-family home.

(*Id.*, ¶¶ 94-105.)

b. Waiehu Stream

i. North Waiehu Stream

383. SWUPA 2363N—Natalie Hashimoto & Carl Hashimoto

a. On April 23, 2009, Natalie Hashimoto and her aunt, Yoshie Suehiro, filed a new use SWUPA for TMK No. (2) 3-2-016:021 (“Parcel 21”). Suehiro no longer lives on the parcel, and Hashimoto and her brother Carl are the current owners and request that the permit be issued in both of their names. (Hashimoto, WT, 12/15/15, ¶ 1.) (Hui/MTF and OHA: FOF B-563.)

b. For years, the Hashimoto ‘ohana pumped water from Waiehu Stream for domestic uses, but the pump broke in April 2008, which is why they filed a SWUPA for new use. They intend to fix the pump and draw water again. (*Id.*, ¶ 12.) (Hui/MTF and OHA: FOF B-568.)

c. The Hashimotos request recognition of 60,000 gpd in appurtenant rights, based on Reppun’s high estimate of 300,000 gad, and a permit for future use of 600 gpd for a garden, based on Maui County’s single-family home. (*Id.*, ¶¶ 3, 12; Hashimoto, Tr. 7/18/16, p. 15, ll. 16-19.) (Hui/MTF and OHA: FOF B-564, B-568.)

d. The Commission provisionally approved appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 18.) (Hui/MTF and OHA: FOF B-566.)

e. Parcel 21 is 0.2 acre and nearly all is part of LCA 3434, confirmed by RP 6166, which was described as “1 taro section at pasture” and “3 Poalimas there.” The survey boundary shows the kula section to be located above and to the right of the LCA’s boundary. LCA 3434 also abuts Waiehu Stream, and the old ‘auwai runs through the kuleana on the

Hashimotos' parcel. (*Id.*, ¶¶ 4, 7-8; Hashimoto, Tr. 7/18/16, p. 16, l. 19 to p 18, l. 7; Exhs. 2363-Hashimoto-1-p. 5, -p. 6.)

f. The Hashimotos conclude that “nearly our entire parcel is covered by LCA 3434 and was cultivated in lo‘i,” and therefore all 0.2 acre has appurtenant rights. (*Id.*, ¶¶ 8-9.)

g. However, a figure in which Parcel 21 is superimposed over LCA 3434 (misabeled “3433,” but its shape and other figures confirm that it is LCA 3434), shows that approximately one-tenth of Parcel 21 falls into an adjacent LCA, which is not identified. (Exh. 2363-Hashimoto-2-p. 4.)

ii. South Waiehu Stream

384. SWUPAs 2266/2267N—Isabelle Rivera

a. On April 23, 2009, Isabelle Rivera filed existing and new use SWUPAs for TMK No. (2) 3-2-017:012 (“Parcel 12”), for which she requests recognition of appurtenant rights of 765,000 gpd and a permit for current and future uses of 726,600 gpd, of which 600 gpd is her estimated domestic existing use and the remainder estimated by using Reppun’s high estimate of 300,000 gad for lo‘i kalo. (Rivera, WT, 12/17/16, ¶¶ 1, 4, 9-11, 15.) (Hui/MTF and OHA: FOF B-518, B-519, B-523, B-524, B-525.)

b. The Commission had granted provisional recognition of appurtenant rights, which referenced 3443:1. (Provisional Order, Attachment C, Revised Exh. 7, p. 17.) (Hui/MTF and OHA: FOF B-522.)

c. Parcel 12 is 2.55 acres and is the entirety of LCA 3443:1 & 2, confirmed by RP 6283, which was described as containing 17 lo‘i kalo, including two pō‘alima, without referencing any other land use. (*Id.*, ¶¶ 5, 9-11; Exh. 2266-Rivera-1.) (Hui/MTF and OHA: FOF B-522, B-523.)

d. Rivera requests an additional 726,000 gpd (2.42 acres x 300,000 gad) to restore 2.42 acres of kalo lo‘i, for a total of 726,600 gpd. (*Id.*, ¶¶ 13-15.) (Hui/MTF and OHA: FOF B-525.)

385. SWUPAs 2219/2220N—Regino Cabacungan & Kathy Alves

a. On April 23, 2009, Regino Cabacungan filed existing and new use SWUPAs for TMK No. (2) 3-2-017:023 (“Parcel 23”), which is a combination of TMKs No. (2) 3-2-017:023 (“old Parcel 23”) and (2) 3-2-017:27 (“Parcel 27”). He requests that his daughter,

Kathy Alves, be added to the SWUPAs. (Cabacungan/Alves, WT, 1/6/16, ¶¶ 1-2; Exh. 2219-Cabacungan-2.) (Hui/MTF and OHA: FOF B-526, B-527.)

b. Mr. Cabacungan received Parcel 27 from his mother-in-law in 1963, and purchased old Parcel 23 from Wailuku Water Company in 1977 with the deed containing a reservation of appurtenant rights. (*Id.*, ¶¶ 2-3.) (Hui/MTF and OHA: FOF B-531.)

c. No documentation of appurtenant rights was provided during the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 17.)

d. Parcel 23 is 0.34 acres: Parcel 27 was 0.21 acres and old Parcel 23 was 0.13 acres. (*Id.*, ¶ 11.)

e. Old Parcel 23 and Parcel 27 were both part of the konohiki award to Lunalilo, LCA 8559:20. The presence of lo‘i on Parcel 27, the close proximity to the ‘auwai, and documents supporting a kuleana adjacent to the Parcel 27 portion of the Lunalilo grant—LCA 2625;5—indicate that Parcel 27 was a pō‘alima. (*Id.*, ¶¶ 7, 12; Exh. 2219-Cabacungan-1, -4.) (Hui/MTF and OHA: FOF B-532, B-533.)

f. For any appurtenant rights that may attach to the remaining 0.21 acres, any such rights would attach to the LCA and not to specific parts of that LCA. Therefore, whether Parcel 27 was a pō‘alima of LCA 2625:5 does not qualify the entirety of Parcel 27 to appurtenant rights, and there is no information on the acreage and other contents of LCA8559:20.

g. They request appurtenant rights of 102,000 gpd, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo applied to 0.34 acres, and a permit for 66,600 gpd, of which 66,000 gpd is for 0.22 acre of lo‘i kalo and 600 gpd was the estimated existing use to irrigate various garden crops and flowering trees. (*Id.*, ¶¶ 6, 16-19.) (Hui/MTF and OHA: FOF B-528, B-535, B-536.)

386. SWUPA 2369N—Jeff Smith

a. Jeff and Ramona Lei Waiwaiole Smith filed a new use SWUPA on April 23, 2009, for TMK No. (2) 3-2-017:033 (“Parcel 33”), requesting appurtenant rights for 558,000 gpd and a permit for 153,050 gpd, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo and domestic uses based on Waiāhole’s 2,500 gad. (Smith, WT, 12/14/15, ¶¶ 1, 5, 15-16.) (Hui/MTF and OHA: FOF B-512, B-513, B-517.)

b. Parcel 33 is 1.86 acres, which the Smiths purchased in 2001, with a deed that reserved appurtenant rights. (*Id.*, ¶¶ 1-2, 11.)

c. The Commission had granted provisional recognition of appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 18.)

d. Parcel 33 is comprised of LCA 3459:2, confirmed by RP 6753, described as “a section of kalo.” (*Id.*, ¶ 8; Exh. 2369-Smith-1.)

e. The Smiths seek water directly from the stream for 0.5 acre of lo‘i kalo, a small aquaculture pond, and to supplement rain water for domestic purposes, including watering their 1.22-acre yard and non-commercial garden. (Smith, WT, 12/14/15, ¶¶ 15-16.) (Hui/MTF and OHA: FOF B-517.)

387. SWUPAs 2307/2308N—Francisco Cerizo

a. On April 30, 2009, Francisco Cerizo filed existing and new use SWUPAs for TMK No. (2) 3-2-002:012 (“Parcel 12”) for the Modesta F. Cerizo Trust, for which he is a trustee. (Cerizo, WT, 12/15/15, ¶ 1.) (Hui/MTF and OHA: FOF B-537.)

b. Cerizo requests recognition of appurtenant rights for 360,000 gpd and a permit for 139,850 gpd, of which 20,850 gpd was the existing use, using Reppun’s high estimate of 300,000 gad for lo‘i kalo and Waiāhole’s 2,500 gad for diversified agriculture. (*Id.*, ¶¶ 3, 12, 14, 16-17.) (Hui/MTF and OHA: FOF B-538, B-541, B-543, B-544.)

c. Parcel 12 is 1.2 acres. (*Id.*, ¶12.) (Hui/MTF and OHA: FOF B-541.)

d. The Commission was unable to make a determination in the provisional recognition process, even after supplemental information was provided. (Provisional Order, Attachment C, Revised Exh. 7, p. 17.)

e. Cerizo nevertheless submitted documents and testimony for the contested case hearing:

1. Parcel 12 is a portion of the konohiki award to Lunalilo, LCA 8559:20:1;
2. Parcel 12 abuts South Waiehu stream, has eight terraced lo‘i fed by the ‘auwai, and was likely cultivated in lo‘i kalo from records supporting two neighboring LCAs.

(*Id.*, ¶¶ 4, 9-11, 15; Exh. 2307-Cerizo-2, -3, -4.) (Hui/MTF and OHA: FOF B-539, B-540.)

f. Cerizo has 0.06 acre in lo‘i kalo and 1.14 acre in domestic uses/diversified agriculture and intends to restore a 0.4-acre portion of his garden back to lo‘i kalo, resulting in

0.46 acre in lo‘i kalo and 0.74 acre of domestic uses/diversified agriculture. (*Id.*, ¶ 17.)
(Hui/MTF and OHA: FOF B-544.)

388. SWUPA 2343N—Thomas Cerizo

a. On April 30, 2009, Thomas Cerizo filed a new use SWUPA for TMK. No. (2) 3-3-002:014 (“Parcel 14”), described as a 0.4 acre property for which he requested 120,000 gpd to place all the land into lo‘i kalo, based on Reppun’s high estimate of 300,000 gad for kalo lo‘i. However, Exhibit D describes Parcel 14 as 1.245 acres. (SWUPA 2343, p. 2, table 1, p. 3, table 2, Exhibit D.)

b. Cerizo did not provide written testimony. During oral testimony at the contested case hearing, Cerizo described the property as 1.245 acres, for which he is now requesting approximately 300,000 gpd to place the entire property into lo‘i kalo if he could find a young farmer or young farmer family to develop the taro land once again. Cerizo owns the property with another person, who is growing some taro on it now, which he estimates as using maybe 30,000 gpd over the past four or five years. (T. Cerizo, Tr., 7/18/16, p. 137, l. 13 to p. 139, l. 6.)

c. Parcel 14 is part of LCA 2468:1, described as kalo and kula land. The Commission had granted provisional approval. (Exhibit 2343-Cerizo, p. 2; Provisional Order, Attachment C, Revised Exh. 7. P. 17.)

d. Appurtenant rights would be equivalent to half of Parcel 14’s 1.245 acres, or 0.623 acre.

389. SWUPA 2258—Jason Miyahira

a. On April 23, 2009, Lawrence and his son Jason Miyahira filed an existing use SWUPA for TMKs No. (2) 3-3-002:009 (“Parcel 9”), No. (2) 3-3-002:021 (“Parcel 21”), and No. (2) 3-3-002:010 (“Parcel 10”). (Miyahira, WT, 12/6/15, ¶ 1.) (Hui/MTF and OHA: FOF B-555.)

b. Parcel 9 is 3.38 acres and owned in a hui with the Smith, Alexander, and Molina ‘ohana. The Miyahiras’s application for Parcel 9 is limited to the 2.08-acre portion (“Lot A”), with Renee Molina applying for the remaining 1.3 acres (“Lot B”) under SWUPA 2171. (*Id.*, ¶ 1.) (Hui/MTF and OHA: FOF B-556.)

c. Parcel 10 is 0.08 acre and Parcel 21 is 0.06 acre. Both were purchased in 1999, and the deeds contain reservations of appurtenant rights. (*Id.*, ¶¶ 1-2, 4, 15-16.) (Hui/MTF and OHA: FOF B-556, B-558.)

d. The Miyahiras irrigate 0.5 acre of kalo lo‘i and 1.34 acres of a yard and garden. (*Id.*, ¶¶ 15-16.) (Hui/MTF and OHA: FOF B-561.)

e. They request appurtenant rights for Lot A in the amount of 624,000 gpd and a permit for Lot A and Parcels 10 and 21 for 154,020 gpd, which they estimate was their existing use, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo (0.5 acre x 300,000 gad = 150,000 gpd), and Maui County domestic cultivation standard of 3,000 gad (1.34 acres x 3,000 gad = 4,020 gpd). If the deeds to Parcels 10 and 21 survive the reservations, they request a total of 666,000 gpd in appurtenant rights for all three parcels. (*Id.*, ¶¶ 4, 11-14, 16.) (Hui/MTF and OHA: FOF B-557, B-560, B-562.)

f. The Commission had granted provisional approval of appurtenant rights, based on LCA 2572:1. (Provisional Order, Attachment C, Revised Exh. 7, p. 18.) (Hui/MTF and OHA: FOF B-559.)

g. Parcel 9 is the entirety of LCA 2572:1, confirmed by RP 8051, described variously as consisting of 33 lo‘i, a section of lo‘i, 5 pō‘alima, taro pauku, and the boundaries of two pō‘alima within ‘āpana 1. (*Id.*, ¶ 9; Exhs. 2258-Miyahira-1, -3.) (Hui/MTF and OHA: FOF B-559.)

h. Parcels 10 and 21 are located within Parcel 9’s Lot A and were both part of LCA 8559B:20.1, a konohiki grant to William C. Lunalilo. (*Id.*, ¶ 5; Exh. 2258-Miyahira-2-p. 1, -p.2.)

i. Because Parcels 10 and 21 are wholly within Lot A and described as pō‘alima, the Miyahiras conclude that all 2.22 acres of Lot A (2.08 acres), Parcel 10 (0.08 acre) and Parcel 21 (0.06 acre) were in lo‘i kalo at the time of the Māhele. (*Id.*, ¶ 9.)

390. SWUPA 2171—Renee Molina

a. On April 29, 2009, Renee Molina filed an existing use SWUPA for TMK No. (2) 3-3-002:009 (“Parcel 9”), which her ‘ohana has owned in a hui with the Smith, Alexander, and Miyahira ‘ohana. Her request is limited to “Lot B,” the 1.3-acre portion of Parcel 9’s 3.38 acres. The Miyahiras have filed their own SWUPA 2258 for the remaining 2.08 acres. (Molina, WT, 11/15/15, ¶ 1; Exh. 2171-Molina-3.) (Hui/MTF and OHA: FOF B-545.)

b. Molina requests recognition of appurtenant rights for 390,000 gpd and a permit for 38,250 gpd, of which 20,000 gpd is the existing use, using Reppun’s high estimate of 300,000 gad for lo‘i kalo and the 5-gallon bucket method. (*Id.*, ¶¶ 3, 11-18.) (Hui/MTF and OHA: FOF B-546, B-551 to B-554.)

c. Parcel 9 is the entirety of LCA 2572:1, confirmed by RP 8051, described as consisting of 33 lo‘i. (*Id.*, ¶¶ 4, 8; Exh. 2171-Molina-1.) (Hui/MTF and OHA: FOF B-550.)

d. The Commission provisionally approved appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 18.) (Hui/MTF and OHA: FOF B-550.)

e. Her existing use consisted of a 0.125 acre lo‘i kalo and 0.25 acre garden, for which she requests an increase from 20,000 gpd to 38,250 gpd. (*Id.*, ¶¶ 13, 15-18.) (Hui/MTF and OHA: FOF B-552 to B-554.)

391. SWUPA 3465N—Pauline Curry, Maile Gomes & Jane Laimana

a. In July 2, 2012, Pauline Curry, Maile Gomes and Jane Laimana filed a new use SWUPA for TMK No. (2) 3-3-002:007, a 1.59-acres property, for 152,700 gpd for 0.5 acre of lo‘i kalo, and 0.9 acre of a yard and garden. (SWUPA 3465N, p. 2, table 1, p. 3, table2, Attachment 1, p. 2.)

b. Curry, Gomes and Laimana stated that the land has been in their family since the Māhele and their land is a portion of LCA 2447:1, confirmed by RP 6164. (SWUPA 3465N, Attachment 1, p. 2 and Exhibit 4.)

c. The applicants had claimed appurtenant rights and were granted provisional approval by the Commission, which noted that LCA 2447, ‘āpana 1 was described as a section of lo‘i and a pō‘alima, and as pauku kalo and 1 pō‘alima. (Provisional Order, Attachment C, Revised Exh. 7, p. 18.)

d. Curry, Gomes, and Laimana did not submit written testimony and did not participate in the contested case hearing.

c. Wailuku River

i. Wailuku River

392. SWUPA 2304—Division of State Parks

a. On April 27, 2009, the State Department of Land and Natural Resources, Division of State Parks (“State Parks”), filed an existing use SWUPA for TMK No. (2) 3-3-003:012 (“Parcel 12”), a 6.185-acre parcel, for 5,000 gpd for approximately 500 square feet of

kalo lo‘i. (SWUPA 2304, p. 3, table 2, p. 4, table 3; Exhibit 2304-DLNR-1, p. 1; McEldowney, WT, 2/5/16, p. 12.) (State Parks: FOF 1-3, 8, 13.)

b. ʻĪao Valley State Monument, commonly referred to as ʻĪao Valley State Park, is located at the confluence of two streams, ʻĪao Stream and Kīnihāpai Stream, which merge to form the Wailuku River. (Exhs. 2304-DLNR-8, -9; McEldowney, WT, 2/5/16, pp. 2, 8-9.) (State Parks: FOF 14.)

c. Water from Kīnihāpai Stream is used to irrigate lo‘i kalo in the Park’s “garden” area to offer educational and viewing features for the general public. The water is then returned back into the Wailuku River. (SWUPA 2304, p. 5; McEldowney, WT, 2/5/16, p. 9; Kumabe, WT, 2/5/16, p. 3.)

d. SWUPA 2304 originally described the existing use as an estimated 5,000 gpd on about four lo‘i totaling approximately 500 square feet, but the lo‘i were more precisely and individually mapped in April 2016 for a total area of 1,243.19 square feet (0.028 acres), and measurements of flow in May 2016 ranged from 3,000 gpd to 39,000 gpd, depending on whether water was flowing or not to parts of the lo‘i. (SWUPA 2304, p.; McEldowney, WT (supplemental), 5/31/16, p. 1.; Kumabe, Tr., 7/19/16, p. 61, l. 14 to p. 63, l. 25.) (State Parks: FOF 28, 29; Hui/MTF and OHA: FOF C-277.)

e. State Parks planner Russell Kumabe testified that 3,000 gpd to 39,000 gpd would suffice for growing kalo as a demonstration project instead of for sustenance, and that 5,000 gpd would suffice if the 5,000 gpd were switched off between the upper and lower lo‘i. Kīnihāpai Stream is also intermittent throughout the season, and they would want to manage what they can get from the stream, but more would be okay too and would provide flexibility to demonstrate more of the areas to be cultivated. (Kumabe, Tr., 7/19/16, p. 64, l. 13 to p. 65, l. 2, p. 67, l. 20 to p.69, l. 24.) (State Parks: FOF 30; Hui/MTF and OHA: FOF C-277.)

f. Parcel 12’s 6.185 acres is comprised of:

1. LCA 3529:1, confirmed by RP 4059, which had two other ʻāpana, and consisted of 1.45 acres; and
2. the remaining 4.735 acres, which is derived from portions of the 24,000-acre ahupua‘a of Wailuku, granted in fee simple to Claus Spreckels in 1882 under Royal Patent Grant No. 3343.

(McEldowney, WT, 2/5/16, pp. 5, 7; Collins, WT, 2/5/16, pp. 2-3; (State Parks: FOF 13.)

- g. The 1854 award of LCA 3529 included 3 ‘āpana.
 - 1. ‘āpana 1 was 1.45 acres, described as kalo;
 - 2. ‘āpana 2 was 2.53 acres, described as ‘āina kalo; and
 - 3. ‘āpana 3 was 0.46 acres, described as ‘āina kalo.

(McEldowney, WT, 2/5/16, pp. 3-5; Exh. 2304-DLNR-1, exhibit 4.)

h. ‘āpana 1, which had eventually been conveyed to John Kalua, was conveyed to the Hawaiian government in 1899, and was set aside, along with portions of the Spreckels grant, by the State for ‘Īao Valley State Park in 1978. (McEldowney, WT, 2/5/16, p. 4, 6; Exh. 2304-2, exhibit A.)

i. The 24,000-acre Spreckels grant ran from the ocean to the ridges forming the heads of Olowalu, Wailuku, Waihe‘e, and Waiehu valleys. (Collins, WT (supplemental), 3/16/16, p. 3.) (State Parks: FOF 15.)

j. A 1961 “gift deed” from Wailuku Sugar Company to the State of Hawai‘i of the Spreckels grant’s portion reserved water rights to Wailuku Sugar Company. (McEldowney, WT, 2/5/16, p. 7.)

k. In the resubmitted application for provisional recognition, the tax map key number is (2) 3-3-03:012 (“Parcel 12”), but the prior tax map key was (2) 3-3-03:013 (“Parcel 13”). In Executive Order 2926 setting aside the land for the Park, the accompanying map showed LCA 3529:1 and the portions from the Spreckels grant as a unified whole. However, a survey done in 1892 located LCA 3529:1 as a separate, stand-alone parcel, the 1892 survey depicts ‘āpana 1 in a very different position than in EO 2926, and another map from Wailuku Sugar Company based on the 1892 survey place a portion of ‘āpana 1 outside the boundaries of the Spreckels grants from Wailuku Sugar Company. State Survey Division employees also agree that the map in EO 2926 does not appear to accurately represent placement of ‘āpana 1 in relation to the Spreckels deeds mentioned in EO 2926. None of the deeds which purport to overlap ‘āpana 1 ever mention the LCA. This means there was no agreement or disclosure that the LCA would somehow be assumed, relinquished, or superseded by the deeds of the 1960s and 1970s, and Wailuku Sugar Company could not reserve water rights it never had to LCA 3529:1. Finally, the tax map plat also depicts ‘āpana 1 as a separate parcel from the grants for the Park

and gives each separate parcel numbers. If the tax map is relied on, then the parcel numbers should be Parcel 12 for LCA 3529:1 and Parcel 13 for the State Parks property that was conveyed as part of the Spreckels grant. Until the question is resolved by a State Survey, either or both TMK parcel numbers 012 and 013 appear to be correct. ((McEldowney, WT, 2/5/16, pp. 7-8; Exh. 2304-DLNR-1, exhibit 22, -8.)

l. The Commission had granted provisional approval after State Parks identified the park lands as Parcel 12 instead of as Parcel 13, and supplemental documentation of LCA 3529 ‘āpana 1 described it as taro land. (Provisional Order, Attachment C, Revised Exh. 7, p. 19.)

m. State Parks claimed appurtenant rights to at least 75 percent of LCA 3529:1, assuming the whole area was in lo‘i kalo at the time of the Māhele, with a floor of 75 percent because in 1908, the land in lo‘i kalo was “about three-fourths of an acre.” (Kame‘eleihiwa, Tr., 7/11/16, pp. 62-63, 65; Exh. 2304-DLNR-10, p. 2, ¶ 3.) (State Parks: FOF 19-22.)

n. State Parks requests appurtenant rights recognition for at least three-fourths of an acre, or 75,000 gpd to 225,000 gpd, based on Reppun’s estimate of 100,000 gad to 300,000 gpd for lo‘i kalo, and as high as 262,500 gpd if treated as individual lo‘i, based on 350,000 gad for individual lo‘i. (Reppun, WDT (Exh. OHA-1), at 2, 13.) (State Parks: FOF 25.)

o. Not only ‘āpana 1, but also ‘āpana 2 and ‘āpana 3, were described as containing only kalo. The fact that 75 percent of ‘āpana 1 was still in kalo in 1908 is not germane to the water use at the time of the Māhele.

393. SWUPAs 2243/2244N—Ho‘oululāhui, LLC (John & Rose Marie Dewey)

a. On April 23, 2009, Ho‘oululāhui, LLC filed existing and new use SWUPAs for TMK No. (2) 3-5-003:018 (“Parcel 18”). (Duey, WT, 2/3/16, ¶ 1.) (Hui/MTF and OHA: FOF B-586.)

b. ‘Īao Valley is the birthplace of Rose Marie Duey’s grandmother, and what they own now is part of her ancestral home. (*Id.*, ¶ 3; Duey, Tr., 7/28/16, p. 27, ll.10-12.)

c. The deed to Parcel 18 contained a reservation of appurtenant rights when the Dueys purchased the land from Wailuku Agribusiness in 2001. (SWUPA 2243, Attachment, p.2.) (Hui/MTF and OHA: FOF B-590.)

d. In their SWUPAs, the Dueys did not claim appurtenant rights because of the deed restriction but participated in the provisional approval process, and the Commission had granted provisional recognition based on LCAs 2610, and later on 3529:3 after additional information was provided. (SWUPA 2243; SWUPA 2244N; Provisional Order, Attachment C, Revised Exh. 7, p. 18.)

e. Parcel 18 is 18.146 acres and consists of LCA 2610, confirmed by RP 494, LCA 3529:3, confirmed by RP 4059, and Royal Grant No. 3343 to Lunalilo:

1. 72% of LCA 2610 comprised 4.712 acres of Parcel 18.
2. 33% of LCA 3529:3 comprised 0.1271 acres of Parcel 18.
3. Royal Grant No. 3343 comprised the remainder of Parcel 18, or 13.307 acres.

(*Id.*, ¶¶ 8, 12.)

f. LCA 2610 was described as containing 15 lo‘i kalo and wauke. The 15 lo‘i are the same lo‘i the Dueys have found and begun to restore, which they had estimated at 1.42 acres in their new use SWUPA but now describe as covering about 3 acres. (*Id.*, ¶ 13; SWUPA 2244N, p. 3, table 2; Attachments, pp. 1, 3.) Seventy-two percent of LCA 2610 was 4.712 acres, so LCA 2610 was 6.544 acres.

g. LCA 3529:3 was described as ‘āina kalo, without any other use mentioned. (*Id.*, ¶ 14.)

h. While the Dueys are not claiming appurtenant rights for the portion of land comprised of Royal Grant No. 3343, there is evidence of ancient terraces and springs throughout the 18.146 acres, and the site topography, slope, proximity to the river, and the presence of an ancient ‘auwai on the property give further evidence that the entire property might have been in kalo at the time of the Māhele. (*Id.*, ¶ 15.)

i. The Dueys request recognition of appurtenant rights for at least 1,451,700 gpd, and a permit for 836,600 gpd, of which 26,600 gpd is the existing use. (*Id.*, ¶¶ 7, 31.) (Hui/MTF and OHA: FOF B-587.)

j. The appurtenant rights request is based on the 4.839 acres derived from LCA 2610 (4.712 acre) and LCA 3529:3 (0.1271 acre), using Reppun’s high estimate of 300,000 gad. (*Id.*, ¶¶ 16-18.)

k. Currently, two of fifteen ancient lo'i on approximately 0.08 acre have been restored, and they also irrigate 3 acres of a domestic, non-commercial garden. Using a 1.5-inch valve to control irrigation flow, they estimate their use at 21,600 gpd for the 0.08-acre and 5,000 gpd for the garden, for a total existing use of 26,600 gpd. (*Id.*, ¶¶ 20-21.) (Hui/MTF and OHA: FOF B-591.)

l. They intend to restore the remaining lo'i of approximately 3 acres, but the amount of 'auwai water is enough for only two lo'i. Based on their site-specific experience with the two lo'i, they estimate 270,000 gad would be sufficient and therefore request an additional 810,000 gpd (3 acres x 270,000 gad). In their original request, they had requested water for 1.42 acres but later changed the request to 3 acres. (*Id.*, ¶¶ 22-24, 31; SWUPA 2244N, p. 3, table 2.) (Hui/MTF and OHA: FOF B-592.)

394. SWUPA 2370N—Francis Ornellas

a. On April 30, 2009, Francis Ornellas filed a new use SWUPA for TMKs No. (2) 3-5-001:002 (“Parcel 2”), No. (2) 3-5-001:003 (“Parcel 3”), No. (2) 3-5-001:004 (“Parcel 4”), and No. (2) 3-5-001:005 (“Parcel 5”). (Ornellas, WT, 2/3/16, ¶ 1. (Hui/MTF and OHA: FOF B-593.)

b. The land had been in the Ornellas 'ohana since “time immemorial” but a part had been sold, when one of Ornellas’s wife’s relatives sold his interest. Ornellas purchased this interest from Wailuku Agribusiness in 2002 via a quitclaim deed in which the water rights were reserved. (*Id.*, ¶¶ 1, 5.)

c. The parcels with reservations are a one-third interest in Parcel 2 and Parcels 3, 4, and 5, which are pō'alima within the one-third interest:

1. Parcel 2 is 1.27 acres.
2. Parcel 3 is 0.18 acre.
3. Parcel 4 is 0.03 acre.
4. Parcel 5 is 0.03 acre.

(*Id.*, ¶¶ 5, 8, 16; Exh. 2370-Ornellas-1; Ornellas, Tr., 7/18/16, p. 43, l. 23 to p. 44, l. 3.) (Hui/MTF and OHA: FOF B-597, B-603.)

d. The Commission had granted provisional approval for all four parcels. (Provisional Order, Attachment C, Revised Exh. 7, p. 19.) (Hui/MTF and OHA: FOF B-598.)

e. Parcel 2 is the entirety of LCA 2414, confirmed by RP 6863. The LCA is described as containing 23 lo'i kalo, a wauke field, and a house lot. Ornellas also provided

photographs depicting the ancient ‘auwai and lo‘i features still visible on his lands, and the map of LCA 2414 also shows that the river used to flow right through this kuleana. Ornellas concludes that these facts, the presence of the three pō‘alima within the kuleana, and information passed down from ‘ohana elders, confirm that Parcel 2 was cultivated mainly in lo‘i kalo. (*Id.*, ¶¶ 7-10; Exh. 2370-Ornellas-1, -2, -3, -4; SWUPA 2370N at Attachment C.) (Hui/MTF and OHA: FOF B-598, B-599.)

f. Ornellas estimates his appurtenant rights for Parcel 2’s 1.27 acres as 103,572 gpd, consisting of the following:

1. 750 gpd for pāhale (0.24 acre x 3,000 gad).
2. 153,000 gpd for lo‘i kalo (0.51 acre x Reppun’s 300,000 gad).
3. 1,530 gpd for wauke (0.51 acre x 3,000 gad).
4. Reducing the resulting 155,280 gpd by one-third for the appurtenant rights reservation on one-third of Parcel 2.

(*Id.*, ¶¶ 11-14.) (Hui/MTF and OHA: FOF B-600, B-601.)

g. If appurtenant rights survive the deeds’s reservations, Ornellas requests recognition of the one-third of Parcel 2 and of Parcels 3, 4, and 5, for a total of 227,280 gpd:

1. Parcel 2: 155,280 gpd.
2. Parcel 3: 54,000 gpd (0.18 acre x 300,000 gad).
3. Parcel 4: 9,000 gpd (0.03 acre x 300,000 gad).
4. Parcel 5: 9,000 gpd (0.03 acre x 300,000 gad).

(*Id.*, ¶ 6.)

h. Ornellas requests a permit for 426,567 gpd:

1. 426,300 gpd for 1.421 acres of lo‘i kalo using Reppun’s high estimate of 300,000 gad.
2. 267 gpd for 0.089 acre for their home and non-commercial garden, based on Maui County domestic cultivation standard of 3000 gad.

(*Id.*, ¶¶ 6, 15-16.) (Hui/MTF and OHA: FOF B-594, B-602, B-603.)

395. SWUPA 2360N—Anthony Manoukian

a. On May 4, 2009, Anthony Manoukian filed a new use SWUPA for TMK No. (2) 3-5-001-019 (“Parcel 19”), a 1.8-acre property for which he claimed appurtenant rights and requested a permit for 540,000 gpd, applying Reppun’s high estimate for lo‘i kalo (1.8 acres x 300,000 gad). However, in an Attachment to his SWUPA, Manoukian stated he was planning

to cultivate 1.428 acres of lo‘i kalo and 0.089 acre of a native Hawaiian plant garden, for a total of 428,667 gpd. (SWUPA 2360N, p.1, p. 2, table 1, p. 3, table 2, Attachment A, p. 2.)

b. Manoukian stated that the land has been in his wife’s family “since time immemorial.” Wailuku Agribusiness came to own three pō‘alima on their land, a total of 0.24 acres and designated TMK Nos. (2) 3-5-001:003, -004, and -005, as well as an undivided 33.33% interest in TMK No. (2) 3-5-001:002, which Manoukian purchased via quitclaim deed in 2002, in which Wailuku Agribusiness reserved the water rights. (SWUPA 2360N, Attachment A, p. 2.)

c. Provisional recognition was denied without prejudice, with the notation: “TMK map shows LCA 2452. Docs provided for LCA 2414. Wailuku Agribusiness reserved water rights.” (Provisional Order, Attachment C, Revised Exh. 7, p. 19.)

d. Manoukian did not submit written testimony nor participate in the contested case hearing.

396. SWUPA 2371N—Kimberly Lozano

a. On April 30, 2009, Kimberly Lozano filed a new use SWUPA for TMKs No. (2) 3-4-036:001 (“Parcel 1”) and No. (2) 3-4-036:010 (“Parcel 10”). She had been using water on Parcel 1 when she filed but filed for a new use, because she wasn’t sure what the process was. (Lozano, WT, 12/14/15, ¶ 1; Lozano, Tr. 7/18/16, p. 135, l. 23 to p. 136, l. 4.) (Hui/MTF and OHA: FOF B-604.)

b. The deeds to both parcels contained a reservation of appurtenant rights when her parents purchased them for her from Wailuku Agribusiness in 2000. (Lozano, WT, 12/14/15, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-608.)

c. Lozano is the great, great, granddaughter of Naka‘ahiki Kawi, who was the konohiki of ‘Īao Valley, and she now resides on land that was her ancestors. (Lozano, WT, 12/14/15; Lozano, Tr. 7/18/16, p 132, ll. 8-15.)

d. The source of her water is a spring which flows through an open ditch to Wailuku River. (Lozano, WT, 12/14/15, ¶ 15.)

e. Parcel 1 is 1.14 acres, and Parcel 10 is 0.1836 acres, and both derive from LCA 2435, confirmed by RP 6397, and LCA 2458, confirmed by RP 6066. Parcel 1 also includes a pō‘alima. (*Id.*, ¶ 6.)

f. The Commission had granted provisional recognition for Parcel 1, based on LCA 2435 but not for Parcel 10, based on LCA 2458, described as having a pō‘alima as a

boundary. There is also a reference to 4405MM and that it was not shown on the TMK map. (Provisional Order, Attachment C, Revised Exh. 7, p. 19.)

g. Lozano explained in her written testimony that LCA 2435 had been mistakenly labeled as 2434, with “2434” initially written in RP 6397 and then “2435” written over, but “2434” still mistakenly used in the foreign testimony, translation of native testimony, and survey boundary. “2438” had been mistakenly used in the native testimony and native register for LCA 2458. Lozano then pointed out that the survey boundary for LCA No. 2434 matched those of LCA 2435; and that the same is true for LCAs 2438 and 2458. (*Id.*, ¶¶ 7-9.)

h. LCA 2435 was described as kalo land with three pō‘alima in it; and LCA 2458 was variously described as 6 lo‘i, 6 taro patches, or taro land. (*Id.*, ¶¶ 10-11.)

i. Lozano requests appurtenant rights for Parcels 1 and 10 for 402,000 gpd, based on Reppun’s high estimate (1.34 acre x 300,000 gad). (However, even using Reppun’s estimate, her request should have been for 1.324 acres, or for 397,200 gpd.) (*Id.*, ¶¶ 5, 24.) (Hui/MTF and OHA: FOF B-605.)

j. She also requests a permit for 57,218 gpd:

1. 2,138 gpd for 0.855 acre of Parcel 1 for her yard and garden, using Waiāhole’s irrigation requirements for diversified agriculture (0.855 x 2,500 gad).
2. 55,080 gpd for 0.1836 acre of Parcel 10 for lo‘i kalo (0.1836 acre x 300,000 gad).

(*Id.*, ¶¶ 16-17, 20.) (Hui/MTF and OHA: FOF B-610, B-611.)

397. SWUPA 2275—Duke & Jean Sevilla, Christina Smith, & County of Maui

a. On April 23, 2009, Duke & Jean Sevilla and Christina Smith filed an existing use SWUPA for TMKs No. (2) 3-3-001:001 (“Parcel 1”), No. (2) 3-3-001:041 (“Parcel 41”), and No. (2) 3-3-001:054 (“Parcel 54”), requesting 4,200 gpd for 1.2 acres of diversified agriculture. (Sevilla, WT, 3/18/16, ¶ 1; SWUPA 2275, p. 2, table 1, p. 4, table 3.) (Hui/MTF and OHA: FOF B-621.)

b. Parcel 41 is 0.933 acre and Parcel 54 is 0.488 acre, on which they have a garden on 0.1 acre of each parcel. The Sevillas own Parcel 41, and Christina and Lorin Smith own Parcel 54, but they manage their parcels collectively. (*Id.*, ¶ 2; SWUPA 2275, p. 4, table 3; Attachment, p. 1.) (Hui/MTF and OHA: FOF B-622.)

c. Parcel 1 is 63.7 acres, which their nonprofit Neighborhood Place of Wailuku leased from North Shore at Waiehu, LLC, on which they cultivated about 1.0 acre of dryland kalo. In May 2012, the County of Maui purchased the property, and on February 4, 2016, the community nonprofit Ke Ao I Ka Makani Ho‘eha‘ili (“Ke Ao”) secured a right of entry through Duke Sevilla, the President of Ke Ao’s Board of Directors. The County of Maui is now a co-applicant for Parcel 1. (*Id.*, ¶¶ 29-30; SWUPA 2275, p. 4, table 3; Attachment, p. 1; Parsons, WT, 5/31/16, ¶ 6; Sevilla, Tr., 7/18/16, pp. 75, ll. 11-16, p. 103, ll. 8-12.) (Hui/MTF and OHA: FOF B-623.)

d. The parcels are watered from springs and wetlands in Paukūkalo, including Waiola Spring, which is on their land about 200 yards from the mouth of Wailuku River. They do not divert water from Wailuku River but utilize the naturally occurring springs and seeps on their land. Sevilla reports that with the partial restoration of Wailuku River, the flow in Waiola Spring on his ‘ohana’s land has increased and become more consistent, remaining saturated throughout the hot summer months. (SWUPA 2275, Attachment, pp. 1-2; Sevilla, WT, 3/18/16, ¶¶ 13, 35; Exh. 2275 Sevilla-7 (before and after photos of Waiola Spring.)

e. Their use is not gauged and the existing use of 4,200 gpd was based on the general estimate of 600 gpd for each of the two 0.1 acre gardens, using Maui County’s single-family standard, and 3,000 gpd for the 1.0 acre of dryland kalo, using Maui County’s standard for domestic agriculture. (SWUPA 2275, p. 3, table 2; Attachment, p. 2.)

f. In his March 18, 2016 written testimony, Sevilla:

1. requested an additional 100,000 gpd for a new use of 0.33 acre of lo‘i kalo on Parcels 41 and 54, using Reppun’s high estimate of 300,000 gad);
2. stated that, in addition to the 1.0 acre of dryland kalo he was cultivating on Parcel 1 on the date of designation in 2008, Wes Wong was also cultivating 2 acres of spring-fed lo‘i; and
3. Ke Ao would like to restore and maintain a total of 20 acres of lo‘i kalo on Parcel 1, which Sevilla estimates would require 6,000,000 gpd, using Reppun’s high estimate (20 acres x 300,000 gad), of which he also estimates that eight acres would be spring-fed lo‘i and 12 acres would need water from either Wailuku River or Waiehu Stream.

(*Id.*, ¶¶ 21, 61-62.) (Hui/MTF and OHA: FOF B-634, B-645.)

g. If any water for Parcel 1 is allocated from the Wailuku River, Sevilla stated that “we’re fine with making that subject to the County’s Water Use Permit from the Wailuku River as well.” (Sevilla, Tr., 7/18/16, p. 76, ll. 15-19.) (Hui/MTF and OHA: FOF B-623.)

h. Therefore, Sevilla now requests:

1. Parcels 41 and 54 - 101,200 gpd, compared to the existing use SWUPA request for 1,200 gpd for two gardens; and
2. Parcel 1 - 6,000,000 gpd for 20 acres of lo‘i kalo, compared to 3,000 gpd for an estimated existing use on 1 acre of dryland kalo, which he now has increased to 600,000 gpd, claiming that 2 acres of lo‘i kalo had also been an existing use.

(*Id.*, ¶¶ 27, 64.)

i. Sevilla did not and has not submitted a new use SWUPA. (Sevilla, Tr., 7/18/16, p. 79, l. 2 to p. 80, l. 23.)

j. The Sevillas and Smith claimed appurtenant rights but did not provide documentation and were therefore denied provisional recognition. (SWUPA 2275, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 18.)

k. Sevilla now has submitted documents for all three parcels and claims appurtenant rights of 414,300²⁰ gpd for all of Parcel 41’s 0.933 acre and Parcel 54’s 0.488 acre, and 1,771,680 gpd for Parcel 1, using Reppun’s high estimate of 300,000 gad for lo‘i kalo. (*Id.*, ¶¶ 8-15, 18, 41-55, 58.)

l. Parcels 41 and 54 are a portion of the same Royal Patent Grant No. 3343 to Claus Spreckels as in Parcel 1, which included 24,000 acres of former crown lands with no description of land use at the time of the Māhele but for which Sevilla described current land features on their portion of the Grant, and for which he claimed appurtenant rights for all of Parcels 41 and 54. (*Id.*, ¶¶ 8-15.)

m. Parcel 1’s deed has a reservation of appurtenant rights in 2004, and Sevilla contends it is derived from multiple LCAs and a 24,000-acre Royal Patent Grant to Claus Spreckels. His claim for 1,771,680 gpd does not include the Grant to Spreckels or another large

²⁰ Sevilla added 0.933 and 0.488 as 1.381, but it should have been 1.421 acres.

grant to Lunalilo, because he could not confirm what was cultivated on Parcel 1's portions of this property. (*Id.*, ¶¶ 40-41, 59; Chumbley, Tr. 7/18/16, p. 100, ll. 4-9.)

n. His claim of appurtenant rights of 1,771,680 gpd is for 9.87 acres of Parcel 1's 63.7 acres are based on the following:

Domestic use

600 gpd: house lot on one-half of LCA 2447:9's 0.18 acres.

Wetland kalo cultivation

1,002,000 gpd: (3.34 acres x 300,000 gad) on LCA 1759:9.

610,500 gpd: (1/2 x 4.07 acre x 300,000 gad) on LCA 11171.

Fishpond cultivation

3,240 gpd: (1/2 x 0.18 acre x 36,000 gad) on LCA 2447:9.

10,440 gpd: (0.29 acre x 36,000 gad) on LCA 3441:3.

73,260 gpd: (1/2 x 4/07 acre x 36,000 gad) on LCA 11171.

49,680 gpd: (1.38 acre x 36,000 gad) on portion of LCA 7742:4.

21,960 gpd: (0.61 acre x 36,000 gad) on portion of CA 3253.

(*Id.*, ¶¶ 41-57.)

398. SWUPA 3623N—Noelani & Allan Almeida & Gordon Almeida

a. On July 16, 2012, Noelani and Allan Almeida and Gordon Almeida filed a new use SWUPA for TMKs No. (2) 3-3-001:022 ("Parcel 22") and No. (2) 3-3-001:023 ("Parcel 23"). Noelani and Allan own Parcel 23 and their cousin Gordon owns the adjacent Parcel 22, and they manage the parcels together as an 'ohana. (Almeida, WT, 8/28/16, ¶ 1.) (Hui/MTF and OHA: FOF B-612.)

b. The water they are requesting is from springs on their land that are fed by the Wailuku River and formerly supplied water for the lo'i. They do not divert water from the River but the existence of their spring is dependent upon a consistent flow in the River. (*Id.*, ¶ 14.)

c. Noelani and Gordon are both direct lineal descendants of Kaianui, the original claimant of LCA 3234C:2, confirmed by RP 4256, and their 'ohana has lived continuously on this land since the Māhele. (*Id.*, ¶ 1.)

d. Parcel 22 is 1.92 acres, and Parcel 23 is 0.445 acre, for a combined total of 2.365 acres, and both parcels fall within LCA 3234C:2. (*Id.*, ¶¶ 4, 10.) (Hui/MTF and OHA: FOF B-617.)

e. The native testimony describes this kuleana as kalo land with two ponds (“aina kalo and elua loko”) and also contains a pō‘alima. Sketches of LCA 3234C:2 depict the pō‘alima but not the two ponds. Based on the documents and the slope of the land, they estimate that both parcels were entirely in kalo at the time of the Māhele. (*Id.*, ¶¶ 8-9, 11; Exh. 3623-Almeida-1, -2; SWUPA 3623N, Exh. 4-A –B.) (Hui/MTF and OHA: FOF B-616.)

f. The Commission had granted provisional recognition, referencing LCA 3234C:2 but described as only pauku kalo and pō‘alima, without any reference to two ponds. (Provisional Order, Attachment C, Revised Exh. 7, p. 19.) (Hui/MTF and OHA: FOF B-616.)

g. They request recognition of appurtenant rights for 709,500 gpd (2.365 acre x Reppun’s high estimate of 300,000 gad). (*Id.*, ¶ 12.) (Hui/MTF and OHA: FOF B-618.)

h. At the time they filed their SWUPA, they had intended to grow lo‘i kalo but subsequently decided to grow dryland kalo in addition to other crops in their domestic garden and therefore amend their SWUPA to use spring water on 1.091 acres for subsistence crops and to water their yard. They request 3,273 gpd (1.091 acres x Maui County domestic cultivation of 3,000 gad). (*Id.*, ¶¶ 15-19.) (Hui/MTF and OHA: FOF B-620.)

ii. ‘Īao-Maniania Ditch

399. SWUPAs 2189/2190N & 2196—Wailuku Country Estates Irrigation Company

a. On April 24, 2009, Wailuku Country Estates Irrigation Company (“WCEIC”) filed existing and new use SWUPAs on behalf of Wailuku Country Estates Community Association’s (“WCECA”) 184 lot owners and an existing use SWUPA for the common areas of TMK (2) 3-003-017. (SWUPAs 2189, 2190N, and 2196.)

1. The Wailuku Country Estates subdivision is comprised of 207 lots over 470 acres:
 - a. 184 owner lots comprise 420.709 acres;
 - b. lots 185-189 comprise the common areas of approximately 32.5 acres; and
 - c. lots 190-207 comprise the remaining acres of unspecified uses which appear from the subdivision map to consist of miscellaneous small areas; e.g., lot 203 is 0.048 acres, lot 204 is 0.145 acres, and lot 205 is 0.006 acres.

(Exhs. 2189-WCEIC-245, -266.)

b. The 184 lot owners filed individual SWUPAs (*See* Appendix 2), which collectively equaled:

1. 120 owners with metered existing uses of 210,895 gpd for agricultural activities on 99 acres, or approximately 2,130 gad:
 - a. 12 acres of vegetables, 8.0 acres of orchard, 14.25 acres of bananas, 3.25 acres of papayas, 9.5 acres of macadamia nuts, 1.0 acre of dryland taro, 7.75 acres of nursery plants, 2.25 acres of turf grass, 38.75 acres of landscape, and 2 acres of livestock.
2. 118 of 120 existing use owners plus the remaining 64 owners with proposed new uses of 512,260 gpd for agricultural activities on 221 acres, or approximately 2,318 gad:
 - a. 47.25 acres of vegetables, 39 acres of orchard, 42.75 acres of bananas, 12.25 acres of papayas, 33.5 acres of macadamia nuts, 6.0 acres of dryland taro, 13.75 acres of nursery plants, 0.25 acre of turf grass, 24.5 acres of landscape, and 1.25 acres of livestock.
3. Most of the agricultural activities take place year-round, with the exception of certain seasonal crops. Many of the homeowners sell their produce at farmers markets or to local businesses and restaurants, and a number of homeowners rely on their crops as their sole or majority income for their families.

(SWUPAs 2189, 2190N; Exhs. 2189-WCEIC-8-191, -265, -468-471, -473, -476.)
(WCEIC: FOF 23, 25-26, 60-66, 82.)

c. The existing use for the 32.5 acres of common areas equaled 158,768 gpd, calculated by subtracting the lot owners' use from total deliveries by WWC and taking into account water that is delivered to the kuleana users, who are not charged. (Exhs. 2189-WCEIC-266, -476, -567, ¶ 5.) (WCEIC: FOF 68-69.)

1. 158,768 gpd for 32.5 acres equals 4,885 gad.
2. The common areas are described somewhat differently in WCEIC's documents:
 - a. 2.26 acres for a community park, 20 acres of roadside setbacks along six miles of roads (24-foot setback on the mauka side and 9.5-foot setback on the makai side), 9 acres of lot drainage swales (not including 3.1 acres of swales in

lots 52 to 62), and 1 acre of retention basins. (Exhs. 2189-WCEIC- 266, -469, ¶ 18, -476, ¶ 54.) (WCEIC: FOF 51.)

- b 2.262 acres for a community park (lot 185), 6.726 acres for Waihe'e Ditch (lot 186), 0.224 acres for access off Maika Place for owners/John Russell (lot 187), 0.758 acres for County of Maui Water Tank site (lot 188), and 23.028 acres for Roads and Shoulders (lot 189). (Exh. 2189-WCEIC-261.)
- c. Photos of the lot and road drainage swales show spotty grass coverage on the roadside shoulders and tall weeds in some of the drainage swales. (SWUPA 2196-WCEIC, photos.)

d. Wailuku Country Estates is subject to a Declaration of Covenants, Conditions, and Restrictions ("CC&Rs"):

- 1. Each lot is designated for, and restricted to, agricultural use as defined in the zoning laws, and two water systems provide water: a potable water system and a non-potable system for agricultural use.

(Exh. 2189-WCEIC-224.) (WCEIC: FOF 6-8.)

e. WCEIC receives up to a maximum of 1 mgd from WWC and is charged a minimum charge of 500,000 gpd at the County rate:

- 1. The Maui County rate is \$1.90/1000gallons from 0-5,000 gallons, \$3.60/1000 gallons for the next 5001-15,000 gallons, and \$1.00/1000 gallons for anything over 15,000; however, the current rate has been set by the Public Utilities Commission at \$0.90/1000 gallons.
- 2. In addition to the minimum charge, an additional amount is paid by which the delivery charge for each quarter exceeds the minimum charge, defined as the County Rate times the gallons delivered each month plus general excise tax.

(Exh. 2189-WCEIC-232.) (WCEIC: FOF 10-14.)

f. Each lot owner is charged \$100/month for 2,666 gpd or 80,000 gallons per month. Any water used in excess is charged at \$2.00/1000 gallons, higher than the County of Maui agricultural rate of \$1.00/thousand gallons to encourage water conservation. (Exh. 2189-WCEIC-476.) (WCEIC: FOF 18.)

g. Appurtenant rights. Although no appurtenant rights were claimed when the SWUPAs were filed in 2009, WCEIC and WCECA participated in the Provisional Approval process, with many lots given provisional recognition. (Provisional Order: Attachment C, Revised Exh. 7, pp. 19-33.)

h. Based on area maps and other information provided by Title Guaranty, WCEIC calculated the proportion of each lot derived from the various LCAs that encompass the development. 27 LCAs were identified, overlapping 93 lots. The percent of each lot derived from the overlapping LCA(s) was then calculated. (Exhs. 2189-WCEIC-243-A, -243-B, -245.) (WCEIC: FOF 37.)

1. For example:

- a. LCA 2502:1, which was approximately 15,320 square feet (0.35 acres), is almost entirely in lot 45 (15,108 square feet), which is 2.584 acres, and with the remaining 212 square feet in lot 42, which is 2.212 acres. Therefore, essentially zero percent of lot 42 and 13 percent of lot 45 are derived from LCA 2502:1. (Exhs. 2189-WCEIC-243-A, -49, table 3, -52, table 3.)
- b. LCA 3275-E was approximately 6,232 square feet (0.14 acres) and is entirely in lot 31, which is 2.399 acres. Therefore, about 6 percent of lot 31 is derived from LCA 3275-E. (Exhs. 2189-WCEIC-243-A, -38, table 3.)
- c. LCA 3225 was approximately 650,053 square feet (14.92 acres), of which only 226 square feet (0.005 acre) was in the subdivision, in lot 186, which is 6.726 acres and part of the Waihe'e Ditch, *supra*. Therefore, essentially zero percent of lot 186 was derived from LCA 3225. (Exh. 2189-WCEIC-243-A.)

i. WCEIC claimed appurtenant rights for the subdivision by summarizing the percent of each LCA that was in the subdivision and multiplying by 150,000 gad, which it stated the Commission had previously applied and which is the median of the figures testified to by Paul Reppun. (Exh. 2189-WCEIC-243b-1.) (WCEIC: FOF 38, COL 19.)

1. The claimed appurtenant rights were based on 30 LCAs, which were essentially the same as the 27 identified as overlapping 93 lots, *supra*.

- a. LCA 4452:9, which was 1,767,370 square feet (40.57 acres) and claimed to be overlapping 31 lots, was later withdrawn, as it was described as house or lots in Honolulu and Lahaina. (Exhs. 2189-WCEIC-243-A, -244, p. 72.)
- b. LCA 2436:1 & 3 were listed separately ('āpana 3 was mislabeled earlier as 'āpana 2 in Exh. 2189-WCEIC-243-A, but there was already an LCA 2436:2 listed separately.)
- c. LCA 2495:1-4 was listed separately as 'āpana 1, 'āpana 2,3, and 'āpana 4.
- d. LCA 4461:1&2 were listed as separate 'āpana.
- e. The revised list of LCAs from 27 to 30 included LCA 2502:3, listed as 7,437 square feet, or 0.17 acres. However, the original list of 27 LCAs included LCA 2502:1, which was approximately 15,320 square feet (0.35 acres). Thus, 'āpana 1 and not 'āpana 3 will be used in the calculation of appurtenant rights. (compare Exhs. 2189-WCEIC-243-A and -243b-1.)

2. Adding the gallons per day claimed for each LCA, WCEIC claimed appurtenant rights of 8,263,555 gpd for the Wailuku Country Estates subdivision. (WCEIC: FOF 38, COL 19.)

j. However, the appurtenant rights were calculated on the entire acreage of each LCA, whereas WCEIC had explicitly identified nine LCAs with acreage that should be reduced for appurtenant rights because of a houselot or unirrigated land. (Blackburn, Tr., 7/28/16, pp. 69-84.)

1. LCA 3335:pahale (houselot). (Blackburn, Tr., 7/28/16, p. 69, l. 14 to p. 71, l. 1.)
2. LCA 377:pahale (houselot). (Blackburn, Tr., 7/28/16, p. 71, l. 12 to p. 72, l. 19.)
3. LCA 3294-B:1:M:1:pahale (houselot). (Blackburn, Tr., 7/28/16, p. 80, ll. 1-15.)
4. LCA 2495:2&3:pahale (houselot). (Blackburn, Tr., 7/28/16, p. 80, l. 16 to p. 81, l. 5.)
5. LCA 3292: dryland taro; 54 loi, 26 dry loi, and a kula. (Blackburn, Tr., 7/28/16, p. 81, l. 22 to p. 82, l. 16; Exh. 2189-WCEIC-205.)

6. LCA 2503:2:23 lo'i, 2 sweet potato kula, 2 hala trees, one housesite. (Blackburn, Tr., 7/28/16, p. 82, l. 17 to p. 83, l. 4; Exh. 2189-WCEIC-200.)
7. LCA 453:1:93 patches and an unirrigated kula; 11 taro patches and a small kula. (Blackburn, Tr., 7/28/16, p. 83, ll. 5-17.)
8. LCA 3330:9 loi and 4 kula. (Blackburn, Tr., 7/28/16, p. 84, ll. 22-23; Exh. 2189-WCEIC-207.)
9. LCA 3294-B:1:M:2: pahale (houseslot). (Blackburn, Tr., 7/28/16, p. 84, ll. 22-23; Exh. 2189-WCEIC-195.)

k. In addition, of the 21 remaining LCAs that WCEIC claimed were cultivated entirely in kalo, 4 were described in the LCA documents as having part of the land in other than lo'i kalo.

1. LCA 3498:4 mo'o, a portion are weed grown and a portion have taro. (Exh. 2189-WCEIC-212.)
2. LCA 2495:4: taro mo'o and kula. (Exh. 2189-WCEIC-198.)
3. LCA 406:1: house, taro in the patches and potato and sugar cane in the fields. (Exh. 2189-WCEIC-194.)
4. LCA 2434 (misabeled as 2435): land, houseslot, and kula; 3 pō'alima in it. (Exh. 2189-WCEIC-196.)

l. Therefore, the portions of the LCAs that were in kalo irrigation at the time of the Māhele are as follows:

LCA	Acres	Kalo Irrigation
1. LCA 3335	0.98	0.73 (0.98-.25)
2. LCA 3388	0.54	0.54
3. LCA 3294-B:2	0.56	0.56
4. LCA 3488	3.67	3.67
5. LCA 377	3.86	3.61 (3.86-.25)
6. LCA 3498	1.55	0.775 (1.55/2)
7. LCA 3294-B:1:M:1	0.53	0.28 (0.53-.25)

8. LCA 2495:1	0.19	0.19
9. LCA 2495:2&3	1.33	1.08 (1.33-.25)
10. LCA 2495:4	1.06	0.53 (1.06/2)
11. LCA 406:1	2.78	1.39 (2.78/2)
12. LCA 3292	3.04	1.52 (3.04/2)
13. LCA 453:2	1.04	1.04
14. LCA 3275-E	0.14	0.14
15. LCA 4461:1	2.48	2.48
16. LCA 4461:2	1.29	1.29
17. LCA 2436:1	0.23	0.23
18. LCA 2436:3	0.17	0.17
19. LCA 2502:1	0.35	0.35
20. LCA 3225	14.92	14.92
21. LCA 3237	4.79	4.79
22. LCA 2503:2	1.08	0.415 ((1.08-.25)/2)
23. LCA 2436:2	2.40	2.40
24. LCA 2533:1	3.40	3.40
25. LCA 453:1	13.69	12.32 (90%)
26. LCA 2434	3.06	1.405 ((3.06-.25)/2) ²¹
27. LCA 3387	0.68	0.68
28. LCA 3330	8.87	4.435 (8.87/2)
29. LCA 3294-B:1:M:2	0.77	0.52 (0.77-.25)
30. LCA 2502:3	0.17	0.17

m. Sixty-one (61) lots have some land derived from one or more of these LCAs, down from an initial ninety-three (93) lots because of the elimination of LCA 4452:9.²² (Exh. 2189-WCEIC-243-A.)

n. The acreage qualifying for appurtenant rights for each of these 61 lots is calculated through the following steps:

²¹ Mislabeled as LCA 2435. See Exh. 2189-WCEIC-196.

²² LCA 4452:9 was 40.57 acres and claimed to overlap 31 lots, but it was later withdrawn, because it was described as house or lots in Honolulu and Lahaina, *supra*.

1. The percent of the lot derived from the LCA is calculated by dividing the square feet of the LCA that is in the lot by the square feet of the LCA.
2. The acreage in the lot that has appurtenant rights is calculated by multiplying the acreage in the LCA qualifying for appurtenant rights by the percent of the lot derived from the LCA. (See acreage and appurtenant rights acreage for the 30 LCAs, *supra*, and acreage of each lot derived from LCAs in Exh. 2189-WCEIC-243-A.)
3. Note that the acreage of the LCA may be greater than the acreage used to calculate appurtenant rights, because of the presence of houselots and/or unirrigated lands. Therefore, the acreage within each lot that has appurtenant rights may also be equal to or more than the acreage that is used to calculate appurtenant rights.
4. Examples:
 - a. Lot 10 contains 23,364 square feet of LCA 406:1's 121,078 square feet (2.78 acres), or 19 percent of the LCA. The LCA has appurtenant rights for 1.39 acres. Thus, Lot 10 has appurtenant rights for 0.264 acres (0.19×1.39).
 - i. Lot 10 is 2.504 acres, or 109,074 square feet. Thus 21 percent ($23,364/109,074$), or 0.52 acres, of lot 10 has appurtenant rights for 0.264 acres.
 - b. Lot 11 contains 56,793 square feet of LCA 406:1's 121,078 square feet (2.78 acres), or 47 percent of the LCA. The LCA has appurtenant rights for 1.39 acres, so Lot 11 has appurtenant rights for 0.653 acres (0.47×1.39).
 - i. Lot 11 is 2.636 acres, or 114,824 square feet. Thus, 49 percent ($56,793/114,824$), or 1.29 acres (0.49×2.636), of Lot 11 has appurtenant rights from LCA 406:1 for 0.653 acres.

Lot 11 also contains 2,061 square feet of LCA 453:2's 45,145 square feet (1.04 acres), or 5 percent of the LCA. The LCA has appurtenant rights for its entire 1.04 acres, so lot 11 has appurtenant rights for 0.052 acres ($0.05 \text{ ac} \times 1.04$).

The total acreage to calculate appurtenant rights from the two LCAs is 0.705 acres ($0.653 + 0.052$) of Lot 11's total acreage of 2.636 acres.

The total acreage with appurtenant rights is 1.342 acres (1.29 + 0.052), and the appurtenant right is calculated for 0.705 acre of the 1.342 acres.

o. Appurtenant rights for each of the 61 lots are calculated in Appendix 3, with the results as follows:

Lot No.	Acres	Lot No.	Acres	Lot No.	Acres
Lot 10	0.26 acres	Lot 58	1.85 acres	Lot 117	0.40 acres
Lot 11	0.70 acres	Lot 59	1.85 acres	Lot 118	0.26 acres
Lot 29	0.00 acres ²³	Lot 60	1.11 acres	Lot 119	1.25 acres
Lot 30	0.92 acres	Lot 61	0.25 acres	Lo 120	1.11 acres
Lot 31	1.31 acres	Lot 64	0.00 acres	Lot 121	0.58 acres
Lot 32	0.92 acres	Lot 65	0.00 acres	Lot 122	1.64 acres
Lot 37	0.74 acres	Lot 68	0.07 acres	Lot 123	1.10 acres
Lot 41	0.64 acres	Lot 104	0.12 acres	Lot 124	1.12 acres
Lot 42	1.61 acres	Lot 105	0.74 acres	Lot 125	0.75 acres
Lot 43	0.69 acres	Lot 106	0.11 acres	Lot 170	1.79 acres
Lot 44	1.30 acres	Lot 107	0.61 acres	Lot 171	1.04 acres
Lot 46	0.51 acres	Lot 108	0.56 acres	Lot 172	0.65 acres
Lot 47	0.56 acres	Lot 109	1.87 acres	Lot 184	0.01 acres
Lot 49	0.10 acres	Lot 110	1.16 acres	Lot 185	1.14 acres
Lot 50	0.08 acres	Lot 111	0.37 acres	Lot 186	0.00 acres
Lot 51	0.21 acres	Lot 112	0.00 acres	Lot 187	0.00 acres
Lot 54	0.00 acres	Lot 113	0.04 acres	Lot 190	0.86 acres
Lot 55	0.00 acres	Lot 114	0.62 acres	Lot 193	0.01 acres
Lot 56	1.60 acres	Lot 115	0.96 acres	Lot 196	0.00 acres
Lot 57	1.85 acres	Lot 116	1.34 acres	Lot 197	0.43 acres

²³ No acreage means the lot contains less than 1% of an LCA. Lot 29 contains only 16 square feet of LCA 2436:2's 2.40 acres.

p. The total appurtenant rights acreage for the 61/207 lots in the subdivision is 43.79 acres, compared to WCEIC's claim for 55.09 acres (8,263,555 gpd, *supra*, divided by 150,000 gad). (WCEIC: FOF 38, COL 19.)

1. Note that 53 of the 184 homeowner lots include some land derived from LCAs with appurtenant rights, but 6 essentially have no appurtenant rights because the portions are so small (lots, 29, 54, 55, 64, 65, 112), and 3 have claims to less than 0.1 acre of appurtenant rights (lots 68, 113, 184).
2. Note also that 3.65 acres are on lands that are not homeowner lots:
 - a) 1.44 appurtenant acres on the county park (lot 185), and 2.21 acres on miscellaneous pieces of land within the subdivision (lots 190, 193, 197, and 198).

q. Practical alternatives.

WCEIC commissioned a consultant's report on alternative irrigation supplies for Wailuku Country Estates. Based on use prior to and after the filing of SWUPAs in 2009, it concluded that an alternative source should be able to supply up to 0.7 mgd during short-term periods of peak use and at least 0.3 mgd on a long-term average basis. Cost estimates were provided for identified alternatives that could be realistically implemented. (Exh. 2189-WCEIC-270, pp. 1-6.)

1. Onsite groundwater.
 - i. When the subdivision lands were purchased by the developer from WWC, it gave up the right to drill a well on the property.
 - ii. All of the subdivision is within the 'Īao Aquifer Water Management System, which is already over-allocated, with MDWS having 11 wells with permitted use of 20.998 mgd.
2. Waikapū Aquifer System, with a sustainable yield of 3 mgd, has a number of wells developed with the intention to fully use the sustainable yield.
 - i. Waikapu Properties has three potable wells with a combined pump capacity that exceeds 3 mgd, and two other exploratory wells for potable or non-potable irrigation use. (See SWUPAs 2205, 2356/2297N, 3471N, and 3472N—Waikapu Properties.)

- ii. Three completed wells with a combined pump capacity of 1.7 mgd and projected use between 0.4 mgd to 0.5 mgd to supply the Maalaea Plantation project by Spencer Homes Maui.
 - iii. Well construction and pump installation permits for two wells for A&B with a combined pumping capacity of 3 mgd.
 - iv. Pending use of these wells will exceed the aquifer's 3 mgd sustainable yield, and no landowner or developer in the aquifer system would give land and easements for another well that would adversely impact its ability to develop groundwater for its project. A transmission pipeline would have to cross land owned by others as well as across Wailuku River.
3. Mahi Pono's Well No. 7 or any other Mahi Pono wells in the Kahului Aquifer.
- i. They are many miles away and transmission pipeline costs would be prohibitive even if easements could be obtained. With HC&S's closure and recharge from irrigation in question, it will take many years to determine the long-term viability of the aquifer as a source of supply. In view of these circumstances, A&B would not supply water from one of its existing wells or provide land for a new well.
4. The Waihe'e Aquifer System on the north side of the 'Īao Aquifer is not a groundwater management area and has a sustainable yield of 4 mgd.
- i. Current pumpage is about 4.3 mgd and had peaked at 6.0 mgd in May 2010. (See 2178/2179N—MDWS.) WCEIC would have to acquire land and/or easements for a well site and a six-mile long transmission pipe. Based on specific assumptions of the well's elevation, location, and depth, the transmission pipeline's size and locations, and the storage tank at the head of WCEIC's distribution system, costs would be \$9.08 million, not including the costs of acquiring land and easements and whether such lands and easements could be acquired. Operating costs would be approximately \$1.75 per 1,000 gallons, compared to \$1.40 per 1,000 gallons from WWC.

5. Potable water from MDWS, which provides 540 gpd for each lot. MDWS does not have adequate resources to provide for irrigation, which on average, is three times greater than the potable supply MDWS is providing.
6. Reclaimed wastewater. Maui County's Wastewater Reclamation Division is actively pursuing the reuse of reclaimed wastewater from its Kīhei and Lahaina plants, which produce R-1 quality wastewater which has few limitations on its reuse. However, both plants are far too distant to serve the subdivision. The nearest plant is in Kahului, which produces R-2 quality wastewater, which is not suitable for the subdivision due to setback requirements and other use limitations. The County also has no plans to convert to R-1, and even if it did, transmission costs would be prohibitive.
7. Desalination of onsite groundwater would require: a) a deep well to exclusively draw saline groundwater from beneath the 'Īao basal groundwater lens at between 900 to 1100 feet below sea level and a salt-water pump capacity of 1.75 mgd; b) a reverse osmosis plant; c) deep wells to dispose of the hypersaline concentrate from the reverse osmosis process, located at least 1000 feet away from the saltwater supply well and delivering the hypersaline concentrate between 1300 to 1500 feet below sea level, to avoid recirculation back to the saltwater supply well; and d) booster pumps at the plant, 6000 feet of 8-inch transmission pipeline, and a 200,000 gallon steel tank at the head of the irrigation delivery system. Costs are estimated at \$10.2 million, with operating costs estimated at \$12.05 per thousand gallons.

(Exh. 2189-WCEIC-270, pp. 7-12.) (WCEIC: FOF 73-77.)

400. SWUPAs 2215/2216N—Gary & Evelyn Brito

- a. On April 23, 2009, the Britos filed existing and new use SWUPAs for TMK No. (2) 3-3-002:029 ("Parcel 29"). (Brito, WT, 8/26/16, ¶ 1.) (Hui/MTF and OHA: FOF B-570.)
- b. The Britos have lived on this land "forever. My wife's family has lived on that property for over 100 years." (Brito, Tr., 9/19/16, p. 31, l. 22 to p. 32, l. 3; SWUPA 2215, Addendum, p. 2.)
- c. Parcel 29 is 0.248 acre and is comprised of LCA 3387, confirmed by RP 6065, as well as a portion of a pō'alima:
 1. LCA 3387 is described as 9 lo'i.

2. The award in which the pō‘alima was located is not described, but is approximately one-quarter of Parcel 29.

(*Id.*, ¶¶ 4, 8-10; Exh. 2215-Brito-p. 18; Exhs. 2215-Brito and 2216N-Brito, sketch on last page of unnumbered additional attachments.)

d. The Commission has granted provisional recognition. (Provisional Order, Attachment C, Revised Exh. 7, p. 34.) (Hui/MTF and OHA: FOF B-574.)

e. The Britos request appurtenant rights of 74,400 gpd, based on Reppun’s high estimate of 300,000 gad and 0.248 acres, and a permit for 15,196 gpd, of which 8,490 gpd was the existing use. (*Id.*, ¶¶ 3, 12-13, 23.) (Hui/MTF and OHA: FOF B-571, B-575, B-577, B-578.)

f. Their existing use of 8,490 gpd consisted of 7,890 gpd of metered use for 0.022 acre of lo‘i and an estimated 600 gpd for their 0.197-acre yard and garden. (*Id.*, ¶¶ 15, 17.) (Hui/MTF and OHA: FOF B-577, B-579.)

g. It should be noted that their present irrigation of 7,890 gpd for 0.022 acre of lo‘i kalo already equals 358,636 gad, which they contend is still inadequate and therefore requested 394,500 gad, or 14,596 gpd for their proposed 0.037 acres. In contrast, the water duty the Commission has adopted is 200,000 gad for individual lo‘i and 150,000 gad for lo‘i complexes, and even Reppun’s highest estimate is 300,000 gad.

h. They wish to expand their lo‘i to 0.37 acre. Due to the slope and shape of their lo‘i and the way they are “terraced down,” along with their experience for many years, they believe their kalo require slightly more water than the standard water duty to avoid warmer temperatures in the bottom lo‘i and therefore request 394,500 gad (versus Reppun’s high estimate of 300,000 gad), for a total of 14,596 gpd. (*Id.*, ¶¶ 15-16; Brito, Tr., 9/19/16, p. 37, ll. 4-20, p. 39, ll. 4-25.) (Hui/MTF and OHA: FOF B-577, B-578.)

i. They also request 600 gpd for their 0.197-acre yard and garden. Although they have 3 houses, river water is used only for the yard. (*Id.*, ¶ 17; Brito, Tr., 9/19/16, p. 29, l. 15 to p. 30, l. 9.) (Hui/MTF and OHA: FOF B-579.)

401. SWUPA 2236—Valentine Haleakala

a. On April 23, 2009, Valentine Haleakala filed an existing use SWUPA for TMK No. (2) 3-3-002:003, a 0.29 acre property for which he requested 600 gpd of the 9,690 gpd of metered use provided by Wailuku Country Estate’s Irrigation Company to him and his two

neighbors, his sister, Evelyn Brito and her husband Gary (SWUPAs 2215/2216N), and Kenneth Mendoza (SWUPAs 2256/2257N). (SWUPA 2236, p. 2, table 1, p. 3, table 2, p. 4, table 3, Addendum, p. 2.)

b. Haleakala’s estimated use of 600 gpd, based on Maui County standard for a single-family home, was being used on 0.25 acre of his yard and domestic plants. (SWUPA 2236, p. 3, table 2, p. 4, table 3, Addendum, p. 2.)

c. Haleakala had claimed appurtenant rights and had been provisionally approved. (SWUPA 2236, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 34.)

d. Haleakala claimed that his land has been in his ‘ohana “since time immemorial,” and had no indication that its appurtenant rights have been extinguished. (SWUPA 2236, Addendum, p. 2.)

e. However, Haleakala claimed that his land was granted to Ka‘awa by LCA 3488, confirmed by R.P. 5289, but provisional approval referred to LCAs 3387 and 3294-B:1, M:1, and that LCA 3387 was shared by the properties of Haleakala, the Britos, and Mendoza. Gary Brito confirmed that all three properties were part of LCA 3387. (SWUPA 2236, Addendum, p. 2; Provisional Order, Exhibits, p. 84, Exh. 7; Brito, Tr., 9/19/16, p. 33, l. 25 to p. 34, l. 2.)

f. Haleakala did not submit written testimony and did not participate in the contested case hearing.

402. SWUPAs 2256/2257N—Kenneth Mendoza

a. On April 23, 2009, Kenneth Mendoza filed existing and new use SWUPAs for TMK No. (2) 3-2-002:025 (“Parcel 25”), for whom Gerald Mendoza submitted written testimony. (Mendoza, WT, 2/3/16, ¶ 1.) (Hui/MTF and OHA: FOF B-580.)

b. The Commission has provisionally recognized appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 34.) (Hui/MTF and OHA: FOF B-584.)

c. Parcel 25 is 0.11 acre and comprised of portions of:

1. LCA 2533:1, confirmed by RP 6529;
2. LCA 3387, confirmed by RP 6065 (See also, SWUPAs 2215/2216N—Gary & Evelyn Brito); and
3. a pō‘alima awarded under LCA 3324 to Claus Spreckels.

(*Id.*, ¶¶ 4-11.) (Hui/MTF and OHA: FOF B-582.)

- d. The proportions comprising Parcel 25 are as follows:
 - 1. approximately one-half (1/2) fall under LCA 2533;
 - 2. approximately three-eighths (3/8) fall under LCA 3387; and
 - 3. approximately one-eighth (1/8) fall under LCA 3324.

(*Id.*, ¶ 11; Exh. 2256-Mendoza-5.)

e. LCA 2533 is described as ‘āina kalo, kalo land, and four pō‘alima. LCA 3387 is described as containing 9 lo‘i. (*Id.*, ¶¶ 12-13; Exhs. 2256-Mendoza-1, -2.)

f. The pō‘alima in LCA 3324 falls within Parcel 25. (*Id.*, ¶ 14.)

g. The Mendozas therefore claim that all 0.11 acre of Parcel 25 has appurtenant rights. (*Id.*, ¶ 15.)

h. They request recognition of appurtenant rights for 33,000 gpd, based on Reppun’s high estimate (0.11 acre x 300,000 gad). (*Id.*, ¶¶ 16-18.) (Hui/MTF and OHA: FOF B-583.)

i. The Mendozas intend to cultivate kalo on 0.003 acre and request 1,184 gpd, or 394,500 gad, based on his neighbors’, the Britos’, estimate of their needs (See, SWUPAs 2215/2216N—Gary & Evelyn Brito, Brito, WT, 8/26/16, ¶¶ 15-16). (*Id.*, ¶¶ 21-22.) (Hui/MTF and OHA: FOF B-583.)

j. They also request 600 gpd for their current domestic use for their garden, based on Maui County standard for single-family use. (*Id.*, ¶ 20.) (Hui/MTF and OHA: FOF B-584.)

k. Although Gerald Mendoza submitted written testimony, he did not appear for the contested case hearing.

iii. ‘Īao-Waikapū Ditch

403. SWUPAs 2178/2179N—Maui County Department of Water Supply

a. On April 3, 2009, Maui County Department of Water Supply (“MDWS”) filed SWUPAs for 1.784 mgd of existing use and 1.416 mgd of proposed new use, for a total 3.2 mgd. (Exhs. 2178-County-1, -2; Taylor, Tr., 7/19/16, p. 20, ll. 9-10.) (MDWS: FOF12-13.)

b. Water from Wailuku River is diverted by WWC into the ‘Īao-Waikapū Ditch and delivered to MDWS’s ‘Īao Water Treatment Plant (“‘Īao WTP”), where it is treated and distributed throughout the Central Maui System. The Central Maui System receives water from a

variety of sources, including the Īao WTP and Kepaniwai Well, Īao Tunnel, Mokuhaui Wells 1 and 3, Waiehu Heights Wells 1 and 2, Waihe‘e Wells 1, 2 and 3, North Waihe‘e Wells 1 and 2, Kanoa Wells 1 and 2, and Maui Lani Wells 5, 6, and 7.

1. The North Waihe‘e Wells 1 and 2 and the Kanoa Wells 1 and 2 draw 4.00 mgd from the Waihe‘e Aquifer, the recommended limit by CWRM.
2. The Maui Lani Wells 1, 2, and 3 draw 2.00 mgd from the Kahului Aquifer, the recommended limit by CWRM.
3. The other sources have water-use permits from CWRM for the High-Level Diked or Basal ‘Īao Aquifer.

(Taylor, WT, 7/5/16, ¶¶ 8, 15-16; Taylor, Tr., 7/19/16, p. 18, ll. 20-22, p. 22, ll. 1-6; Exh. 2178-County-11, p. 5, table 6.) (MDWS: FOF 20-21.)

c. The Central Maui System is the largest water system in the County and serves the communities of Kū‘au, Pā‘ia, Sprecklesville, Kahului, Pu‘unēnē, Kīhei, Wailea, Makena, Waikapū, Wailuku, Waiehu, and Waihe‘e as well as the Hawaiian Homelands at Paukūkalo and Waiehu Kou. (Taylor, WT, 7/5/16, ¶¶ 7, 32; Exh. 2178-County-14; Taylor, Tr., 7/19/16, p. 18, ll. 4-6.) (MDWS: FOF16-17.)

d. The population served by the Central Maui System was approximately 101,525 as of 2015 and expected to grow by 24,464 through 2030 to approximately 125,789. (McLean, WT, 7/5/16, ¶¶ 4-5; Exh. 2178-County-4, table 1-2.) (MDWS: FOF19.)

e. Currently, the Central Maui System’s total peak available source is 25.696 mgd, with an average daily use of 20.5 mgd. By 2030, the growth of the population is projected to increase the demand between 7.7 mgd and 19.4 mgd, with a baseline of 13.6 mgd used for water-planning purposes. While the current peak available source of 25.696 mgd can meet the needs of the Central Maui population, MDWS will need to develop new sources of water to meet future needs. (Taylor, WT, 7/5/16, ¶¶ 13-14; Exhs. 2178-County-11, tables 4, 6, -12, p. 6; Taylor, Tr., 7/19/16, p. 18, l. 25 to p. 19, l. 5, p. 21, ll. 11-15, ll. 20-22.) (MDWS: FOF 24-26.)

f. Single- and multi-families represent the highest percentage of current and projected water use at 63-64 percent, with agriculture and private irrigation at only 2 percent, and most of the remainder used by commercial (11-12 percent), hotels (8-9 percent), government (9

percent), and industrial (4 percent). (Taylor, WT, 7/5/16, ¶ 26; Taylor, Tr., 7/19/16, p. 24, ll. 1-20; Exhs. 2178-County-1, -2.) (MDWS: FOF 31-32.)

- g. Efficiency and conservation are increased by:
 - 1. Supply side: increased staffing for leak detection and repair, preventative and predictive maintenance of the system, and back-up sources.
 - 2. Demand side: water conservation pricing, low-flow fixture distribution, direct fixture retrofits, water auditing, regulations related to water conservation, and public education and outreach activities.
 - 3. Watershed partnerships: partnered with and provided funding for seven watershed partnerships on Maui and Moloka 'i to educate the public on water use, as well as to ensure that upland watersheds are fully functioning.

(Taylor, WT, 7/5/16, ¶ 26; Taylor, Tr. 7/19/16, p. 24, l. 21 to p. 26, l. 22; Exhs. 2178-County-13, pp. 1-10, tables 1, 2.) (MDWS: FOF 33-37.)

h. MDWS has commissioned studies to look at sources of water for the Central Maui System for both current and future demands, including an engineering and cost analysis report and the Maui County Water Use and Development Plan, Central DWS District Plan Update:

- 1. Northward basal groundwater development, adding new wells in the north side of the Waihe'e Aquifer and in the Kahakuloa Aquifer, adding sixteen wells, plus transmission pipelines, storage tanks, and booster pump stations:
 - i. the sustainable yield is 4 mgd, which MDWS currently pumps, and CWRM has asked MDWS to limit further withdrawals.
 - ii. USGS has indicated that new wells in the northern portion of the Waihe'e and Kahakuloa Aquifers may not be as productive or cost-effective as hoped.

(Taylor, WT, 7/5/16, ¶ 30; Taylor, Tr., 7/19/16, p. 28, l. 4 to p. 29, l. 2, p. 41, ll. 18-23, p. 42, ll. 3-9; Exhs. 2178-County- 11, p. 6, -9, p. 59 ¶ 370, -12, pp. 30-32.) (MDWS: FOF 40-41.)

2. Eastward basal groundwater development, with a series of wells at elevation 1000 feet, transmission pipelines, storage tanks, and booster pump stations:
 - i. Estimated life cycle costs would be \$604 million.²⁴
 - ii. MDWS's ability to utilize this option is restricted by a Consent Decree which was recently used to prevent MDWS from even developing test wells.

(Taylor, WT, 7/5/16, ¶ 31; Taylor, Tr., 7/19/16, p. 29, ll. 3-17, p. 42, ll. 10-16, p. 43, ll. 9-24; Exhs. 2178-County-9, p. 59 ¶¶ 372-373, -11, p. 6, table 12, -12, pp. 33-43.)
(MDWS: FOF 42-45.)

3. Desalination of brackish groundwater, developing a 5 mgd reverse osmosis desalination facility in the Kahului aquifer and operational costs associated with the high intensity energy needs of the desalination process.
 - i. The 'Īao WTP that treats water from the 'Īao-Waikapū Ditch is located at an elevation that allows the membrane filtration system to be pressurized without pumping. Electricity costs to pressurize membrane processes are typically significant if the water must be pumped, but at the 'Īao WTP, the membranes are pressurized by gravity. In contrast, for desalination, brackish groundwater must be pumped up to the treatment plant, reverse osmosis would remove salt and other minerals to create potable water, and the residual brine liquid must be disposed via deep injection wells into salt water below the source of brackish groundwater.
 - ii. Dependence on imported energy and uncertainty associated with future energy prices adds a significant implementation risk.
 - iii. Estimated life cycle costs of \$598 million.
 - iv. This option, which would use brackish water from the Kahului aquifer, does not address the current withdrawal of

²⁴ Life cycle costs incorporate capital, operating, and maintenance costs over a defined planning period, including inflationary costs. It allows evaluation of different alternatives on an equal basis. It is expressed as the net present value (NPV) of all costs incurred during the planning period or the amount of money that would need to be set aside today at a defined interest (discount) rate to fund the project or strategy. (Exh. 2178-County-11, p. 11.)

2.00 mgd of potable water from the aquifer, and how the potability of that water might be affected by withdrawing an additional 5 mgd of brackish water.

(Taylor, Tr., 7/19/16, p. 44, ll. 5-11, p. 44, l. 21 to p. 45, l. 8; Exhs. 2178-County-11, pp. 6-7, table 12, p. 12, -12, pp. 67-68.) (MDWS: FOF 46-49.)

4. Maximization of recycled wastewater and conservation.
 - i. The amount of water that could be replaced by treated water is limited, with an estimated maximum of 0.601 mgd and average annual demand of 0.38 mgd from the Wailuku-Kahului Wastewater Reclamation Facility (“WWRF”).
 - ii. It would require significant capital expenses, including the expansion of existing WWRFs, construction of storage tanks, and extended transmission lines. Costs would be \$37.60 million, with \$5.37 million to upgrade the WWRF from R-2 to R-1, \$25.94 million to deliver 0.191 mgd to the Maui Lani area, \$4.29 million to deliver 0.225 mgd to Kahului Airport and Kanahā Beach Park, and \$2.00 million to deliver 0.185 mgd to distribute from Queen Ka’ahumanu Center to existing HC&S pipelines formerly used for pineapple cannery wastewater to what was HC&S’s seed cane fields, Maui High School, Kahului Community College and Park, Kahului Elementary, and Hale Mahaolu.
 - iii. This assessment is limited to current users of MDWS’s potable water system. For example, most of the large users in the Maui Lani area currently use brackish groundwater for irrigation, so only 0.191 mgd is projected to replace potable water at a cost of \$25.94 million.
 - iv. The total production of the Wailuku-Kahului WWRF is 4 mgd, of which only 0.2 mgd is currently used. So the projected estimated maximum of 0.601 mgd and average annual demand of 0.38 mgd reflects current use of potable water that might be replaced by recycled water and not the water that is available.

(Exh. 2178-County-11, pp. 8-9, tables 8 and 10; Taylor, Tr., 7/19/16, p. 47, l. 14 to p. 48, l. 13.) (MDWS: FOF 51-52.)

i. USGS had also previously indicated that the Waikapū Aquifer may be a possible source of new water, but the sustainable yield is only 2 mgd, and MDWS expected competition from private landowners for the available water. Waikapu Properties have five (5)

wells, three shown to be potable and two in final testing for potability at the time of the contested case hearing. (Exh. 2178-County-9, FOF 371; Atherton, WT, 2/5/16, ¶ 27.)

j. MDWS did not claim appurtenant rights nor participate in the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 34.)

404. SWUPA 2339—Roger Yamaoka and Kevin Yamaoka

a. On April 30, 2009, Roger Yamaoka and Kevin Yamaoka filed an existing use SWUPA for TMKs No. (2) 3-5-004:038 (“Parcel 38”) and No. (2) 3-5-004:039 (“Parcel 39”), for 1,950 gpd on 0.89 acre of apple bananas and 0.46 acre of vegetables and fruits. (SWUPA 2339, p. 2, table 1, p. 4, table 3.)

b. Parcel 38 is 1.78 acres, on which they grow the 0.89 acre of apple bananas and 0.30 acre of the vegetables and fruits, and Parcel 39 is 0.628 acre, on which they grow the remaining 0.16 acre of vegetables and fruits. (Yamaoka, Tr., 7/18/16, p. 155, ll. 3-15; SWUPA 2339, p. 4, table 3.)

c. Parcel 38 is owned by the Yamaokas’ two sisters, and Parcel 39 is owned by Roger and Kevin. (Yamoka, Tr., 7/18/16, p. 152, ll. 19-23.)

d. Their grandparents bought the land in the 1930’s, their deed is all in Hawaiian, and their dad said that the water rights were reserved. Roger Yamaoka does not know anything else about the reservation, except that it was sometime in the past. (Yamaoka, Tr., 7/18/16, p. 152, l. 2 to p. 153, l. 4.)

e. The Yamaoka ‘ohana claimed appurtenant rights in their SWUPA but did not participate in the provisional approval process and were denied without prejudice. (Provisional Order, Attachment C, Revised Exh. 7, p. 37.)

f. The Yamaoka ‘ohana have started 10,000 square feet of “wet taro,” but still only request the 1,950 gpd they originally requested, because “we don’t let the water just continue to run. We use what we need, and, you know, during the winter months of course with rain, we don’t have to access water if that’s the case. So we’re not here to be greedy in any way, we just want to sustain our agricultural use.” (Yamaoka, Tr., 7/18/16, p. 154, ll. 1-7.)

405. SWUPA 2188—Leslie Vida, Jr.

a. On April 9, 2009, Leslie Vida, Jr. filed existing use SWUPA for TMK No. (2) 3-5-004:091 (“Parcel 91”). (L. Vida, WT, 1/2/16, ¶ 1.) (Hui/MTF and OHA: FOF B-650.)

b. Parcel 91 is 0.36 acre and a portion of LCA 76 to William Shaw, confirmed by RP 7694, a 10.34-acre farm. (*Id.*, ¶¶ 6, 10, 16.) (Hui/MTF and OHA: FOF B-654, B-658.)

c. Today, Shaw’s descendants, including the Vida ‘ohana, reside on separate parcels following subdivision. In addition to Leslie Vida, Jr., others filing SWUPAs are his sister Donna Vida (SWUPAs 2292 & 2293), and his aunt and uncle, Claire and Robert Pinto (SWUPA 2303). (D. Vida, WT, 2/27/16, ¶ 11.) (Hui/MTF and OHA: FOF B-655.)

d. Waikapū Stream was historically the source for their ‘āina and surrounding kuleanas, but changes by Wailuku Sugar Company and Wailuku Water Company has resulted in Wailuku Water Company delivering water from Wailuku River via the ‘Īao-Waikapū Ditch system. (L. Vida, WT, 1/2/16, ¶¶ 19-22.)

e. The records supporting LCA 76 describe the kuleana as a “farm” and refer to lo‘i kalo terracing down along to Pilipili, a house, and a stone wall. The records include a survey and a map of the 3.43-acre portion near the stream name Haaua, and the “water run” that brought water to this kuleana. (L. Vida, WT, 12/16, ¶¶ 13-14; Exh. 2188-Vida-2; D. Vida, WT, 2/27/16, ¶¶ 13-14; Exh. 2292-Vida-2; Pinto, WT, 1/29/16, ¶¶ 13-14; Exh. 2303-Pinto-2.) (Hui/MTF and OHA: FOF B-656.)

f. Given these descriptions and the lo‘i terracing that still exists, the Vida ‘ohana estimated that the majority of the 10.34 acres, including all of their parcels, was cultivated in lo‘i kalo at the time of the Māhele. (L. Vida, WT, 1/2/16, ¶ 15; D. Vida, WT, 2/27/16, ¶ 14; Pinto, WT, 1/29/16, ¶ 15.) (Hui/MTF and OHA: FOF B-657.)

g. The Commission had provisionally approved appurtenant rights for LCA 76. (Provisional Order, Attachment C, Revised Exh. 7, p. 35.) (Hui/MTF and OHA: FOF B-657.)

h. Because Vida concluded that his parcel was in the majority of LCA 76 that was cultivated in lo‘i kalo at the time of the Māhele, he requested appurtenant rights for his entire parcel, or 108,000 gpd, applying Reppun’s high estimate of 300,000 gad for lo‘i kalo to his entire 0.36 acres. (L. Vida, WT, 1/2/16, ¶ 15.) (Hui/MTF and OHA: FOF B-651.)

i. Vida also requested a permit for 11,725 gpd:

1. 0.0365 acre of lo‘i kalo: existing use on 0.025 acre, with estimated use of 7,500 gpd, which he intends to increase by 0.0115 acre, with an estimated use of 3,450 gpd.

2. 0.31 acre of crops and medicinal plants, estimated at 775 gpd, using *Waiāhole*'s diversified agriculture rate of 2,500 gad.

(*Id.*, ¶¶ 23-26.) (Hui/MTF and OHA: FOF B-660, B-661, B-662.)

406. SWUPAs 2292 & 2293—Donna Vida

a. On April 29, 2009, Leslie Vida, Sr. filed existing use SWUPAs for TMKs No. (2) 3-5-004:045 (“Parcel 45”) and No. (2) 3-5-004:056 (“Parcel 56”). Donna Vida inherited Parcel 56 from her father, Leslie Vida, Sr., after he passed away. Parcel 45 is the family cemetery. (Donna Vida, WT, 2/27/16, ¶¶ 1, 4, 16.) (Hui/MTF and OHA: FOF B-663, B-672.)

b. Parcel 56 is 0.9 acre and Parcel 45 is 0.07 acres, and both derive from LCA 76 to William Shaw, confirmed by RP 7694, from which SWUPAs for her brother, Leslie Vida (SWUPA 2188), and her aunt and uncle, Claire and Robert Pinto (SWUPA 2303), are also derived. (*Id.*, ¶ 11.) (Hui/MTF and OHA: FOF B-655.)

c. Today, Shaw’s descendants, including the Vida ‘ohana, reside on separate parcels following subdivision of LCA 76. (*Id.*, ¶ 11.)

d. Waikapū Stream was historically the source for their ‘āina and surrounding kuleanas, but changes by Wailuku Sugar Company and Wailuku Water Company has resulted in Wailuku Water Company delivering water from Wailuku River via the ‘Īao-Waikapū Ditch system. (L. Vida, WT, 1/2/16, ¶¶ 19-22.)

e. As discussed in SWUPA 2188—Leslie Vida, Jr., the records supporting LCA 76 describe the kuleana as a “farm” and refer to lo‘i kalo terracing down along to Pilipili, a house, and a stone wall. The records include a survey and a map of the 3.43-acre portion near the stream name Haaua, and the “water run” that brought water to this kuleana. (L. Vida, WT, 12/16, ¶¶ 13-14; Exh. 2188-Vida-2; D. Vida, WT, 2/27/16, ¶¶ 13-14; Exh. 2292-Vida-2; Pinto, WT, 1/29/16, ¶¶ 13-14; Exh. 2303-Pinto-2.) (Hui/MTF and OHA: FOF B-656.)

f. Given these descriptions and the lo‘i terracing that still exists, the Vida ‘ohana estimated that the majority of the 10.34 acres, including all of their parcels, was cultivated in lo‘i kalo at the time of the Māhele. (L. Vida, WT, 1/2/16, ¶ 15; D. Vida, WT, 2/27/16, ¶ 14; Pinto, WT, 1/29/16, ¶ 15.) (Hui/MTF and OHA: FOF B-657.)

g. The Commission had provisionally approved appurtenant rights for LCA 76. (Provisional Order, Attachment C, Revised Exh. 7, 37.) (Hui/MTF and OHA: FOF B-657.)

h. Because Donna Vida concluded that her parcels were in the majority of LCA 76 that was cultivated in lo‘i kalo at the time of the Māhele, she requested appurtenant rights for the entirety of both parcels. However, while she applied Reppun’s high estimate of 300,000 gad for lo‘i kalo to all of Parcel 56’s 0.9 acres, she used Maui County standard for single-family homes of 600 gpd to estimate the use on Parcel 45’s 0.07 acres, resulting in a request for appurtenant rights of 270,600 gpd. (D. Vida, WT, 2/27/16, ¶ 15, 17-18.) (Hui/MTF and OHA: FOF B-664.)

i. She requests existing use permits of 175 gpd for Parcel 45’s 0.07 acre and 2,225 gpd for Parcel 56’s 0.9 acres, using *Waiāhole*’s diversified agriculture duty of 2,500 gad as follows:

1. 175 gpd for Parcel 45’s 0.07 acres for the ohana cemetery.
2. 0.89 acre of Parcel 56’s 0.9 acre for landscaping, fruit and medicinal trees and plants, and livestock.

(*Id.*, ¶¶ 5, 23-26.) (Hui/MTF and OHA: FOF B-664, B-666, B-671, B-672.)

407. SWUPA 2303—Claire Pinto

a. On April 9, 2009, Robert and Claire Pinto filed an existing use SWUPA for TMKs No. (2) 3-5-004:041 (“Parcel 41”) and No. (2) 3-5-004:051 (“Parcel 51”). Robert Pinto has since passed away. (Pinto, WT, 1/29/16, ¶¶ 1, 9; Pinto, Tr, 7/18/16, p. 32, l. 13.) (Hui/MTF and OHA: FOF B-673.)

b. Parcel 41 is 0.48 acre and Parcel 51 is 0.66 acres, and both derive from LCA 76 to William Shaw, confirmed by RP 7694, from which SWUPAs for Leslie Vida (SWUPA 2188) and Donna Vida (SWUPAs 2292 and 2293), are also derived. (*Id.*, ¶¶ 11, 16.) (Hui/MTF and OHA: FOF B-655.)

c. Today, Shaw’s descendants, including the Vida ‘ohana, reside on separate parcels following subdivision of LCA 76. (*Id.*, ¶ 11.)

d. Waikapū Stream was historically the source for their ‘āina and surrounding kuleanas, but changes by Wailuku Sugar Company and Wailuku Water Company has resulted in Wailuku Water Company delivering water from Wailuku River via the ‘Īao-Waikapū Ditch system. (*Id.*, ¶¶ 21-22.)

e. As discussed in SWUPA 2188—Leslie Vida, Jr., the records supporting LCA 76 describe the kuleana as a “farm” and refer to lo‘i kalo terracing down along to Pilipili, a

house, and a stone wall. The records include a survey and a map of the 3.43-acre portion near the stream name Haaua, and the “water run” that brought water to this kuleana. (L. Vida, WT, 12/16, ¶¶ 13-14; Exh. 2188-Vida-2; D. Vida, WT, 2/27/16, ¶¶ 13-14; Exh. 2292-Vida-2; Pinto, WT, 1/29/16, ¶¶ 13-14; Exh. 2303-Pinto-2.) (Hui/MTF and OHA: FOF B-656.)

f. Given these descriptions and the lo‘i terracing that still exists, the Vida ‘ohana estimated that the majority of the 10.34 acres, including all of their parcels, was cultivated in lo‘i kalo at the time of the Māhele. (L. Vida, WT, 1/2/16, ¶ 15; D. Vida, WT, 2/27/16, ¶ 14; Pinto, WT, 1/29/16, ¶ 15.) (Hui/MTF and OHA: FOF B-657.)

g. The Commission had provisionally approved appurtenant rights for LCA 76. (Provisional Order, Attachment C, Revised Exh. 7, p. 37.) (Hui/MTF and OHA: FOF B-657.)

h. Because Claire Pinto concluded that her parcels were in the majority of LCA 76 that was cultivated in lo‘i kalo at the time of the Māhele, she requested appurtenant rights for the entirety of both parcels, or 342,000 gpd (1.14 acres x Reppun’s high estimate of 300,000 gad for lo‘i kalo). (Pinto, WT, 1/29/16, ¶ 18.)

i. Pinto also requested a permit for 2,750 gpd for 1.1 acres, applying Waiāhole’s diversified agriculture duty of 2,500 gad, for domestic uses such as washing, landscaping, and watering fruit trees, Native Hawaiian/medicinal plants, and for animals. (*Id.*, ¶¶ 24-26.) (Hui/MTF and OHA: FOF B-681, B-682.)

408. SWUPAs 2350/2546N—Towne Realty/Wailuku Kuakahi, LLC

a. On April 30, 2009, Towne Realty of Hawaii, Inc./Wailuku Kuakahi, LLC filed an existing use SWUPA for TMK No. (2) 3-5-002:003 (“Parcel 3”) and on December 9, 2009, filed a new use SWUPA for the same Parcel 3 of 150 acres. (SWUPA 2350; SWUPA 2546, p. 3, table 2.)

b. The existing use SWUPA requested 21,301 gpd of metered use for 0.75 acre of fruit and vegetable crops, and the new use SWUPA requested an estimated 675,000 gpd for 20 acres of fruit and vegetable crops and 113 acres of pasture for goats, cows, and other animals. (SWUPA 2350, p. 2, table 1, p. 4, table 3; SWUPA 2546, p. 2, table 1, p. 3, table 2.)

c. No appurtenant rights were claimed, and the applicant did not participate in the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 38.)

d. No written testimony was submitted nor did the applicant participate in the contested case hearing.

409. SWUPA 2345—Stanford Carr Development, LLC

a. On April 30, 2009, Stanford Carr Development, LLC filed an existing use SWUPA for TMK No. (2) 3-5-001:067 for 63,902 gpd of metered use for dust control on 200 acres. (SWUPA 2345, p. 2, table 1, p. 4, table 3.)

b. The applicant did not claim appurtenant rights nor participate in the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 38.)

c. The applicant did not submit written testimony nor participate in the contested case hearing.

410. SWUPAs 2349/2495N—Endurance Ii Wai Hui

a. On April 30, 2009, Endurance Investors, LLC and Association of Ii Wai Hui, LP (hereinafter collectively “Endurance Investors”), filed existing and new use SWUPAs for TMK No. (2) 3-5-002:002 (“Parcel 2”), requesting 357 gpd of metered existing use on 2 acres of their 50-acre property for “feed & forage” and 260,000 gpd of new use on 60.08 acres of the same property. (SWUPA 2349, p. 2, table 1, p. 4, table 3; SWUPA 2495N, p. 2, table 1, p. 3, table 2.)

b. The 260,000 gpd on 60.08 acres was for 49.08 acres of “Agrili” and 11 acres of “Agron.” The proposed water duty was 5,000 gad, but 7-8 acres were to be for other than agriculture use but necessary for the operation of the agriculture activity, so the net request was for 260,000 gpd and not 300,000 gpd. (SWUPA 2495N, p. 2, table 1, p. 3, table 2.)

c. No other documents were filed, including any explanation of the discrepancy between 50 acres in SWUPA 2349 and 60.08 acres in SWUPA 2495N for the same TMK. No appurtenant rights were claimed, and the applicant did not participate in the provisional approval process. (SWUPA 2349, p. 1; SWUPA 2495N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 38.)

d. The applicant did not participate in the contested case hearing.

411. SWUPA 2164—Waiolani Mauka Community Association

a. On April 22, 2009, Waiolani Mauka Community Association filed an existing use SWUPA for TMKs No. (2) 3-5-032:106 and No. (2) 3-5-032: various for 2 acres of turf grass and 0.5 acre of landscape for common areas. (SWUPA 2164, p. 2, table 1, p. 4, table 3.)

b. The applicant did not claim appurtenant rights nor participate in the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 35.)

c. The applicant did not submit written testimony nor participate in the contested case hearing.

412. SWUPA 2200—Emmanuel Lutheran Church & School

a. On April 23, 2009, Emmanuel Lutheran Church & School filed a new use SWUPA for TMK No. (2) 3-5-002:011 for 25.263 acres, on which it planned to irrigate 30,000 gpd on 20+ acres of landscape and playing fields. (SWUPA 2200, p. 2, table 1, p. 3, table 2.)

b. The applicant did not claim appurtenant rights nor participate in the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 18.)

c. The applicant did not submit written testimony nor participate in the contested case hearing.

413. SWUPA 2183—Kihei Garden & Landscaping Company, LLP

a. On April 15, 2009, Kihei Garden & Landscaping Company, LLP filed an existing use SWUPA for TMK No. (2) 3-5-02:017 (“Parcel 17”), a 24.982-acre property, which Kihei Garden has occupied since 1988 under a lease agreement and which it bought in 2005. (Okamura, WT, 3/26/16, ¶ 2; SWUPA 2183.)

b. Kihei Garden has an average of 60 full-time employees and an annual payroll of \$2.5 to \$3 million, and its activities are consistent with both State and County uses on agricultural zoned land and is consistent with County community plans. (*Id.*, ¶ 4.)

c. Kihei Garden requests 33,261 gpd of metered use on 15 acres of various landscape plants, both in the ground and on nursery benches, for propagation of plant starts such as shrubs, groundcovers and trees. (*Id.*, ¶ 2; SWUPA 2183, p. 2, table 1, p. 4, table 3.)

d. In 2008, during testimony in the previous round of this contested case, Kihei Garden had projected that its usage was going to decrease over time as more and more native plants and less water-consuming plants were being use. But John Okamura, the managing partner, has not found this to be the case. Native plants are not using water in the amount that had been projected, and more ornamentals, which use more water, are still being used for the tourist industry, primarily, hotels. (Okamura, Tr., 9/20/16, p. 93, ll. 15-24.)

e. Kihei Garden did not claim appurtenant rights nor participate in the provisional approval process. (SWUPA 2183, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 35.)

f. Kihei Garden obtains its water from WWC.

Alternative sources:

1. MDWS has said it can only supply a single, three-quarter inch water meter, which is not large enough to support their current nursery operation.
2. Reclaimed water was considered but because no pipeline exists from the Kahului treatment plant to anywhere close to its location, Kihei Garden would have to install a transmission pipeline from existing plants or pipes to its property. The cost of running that pipeline would be several million dollars, which is not economically feasible for Kihei Garden. In addition, obtaining all the necessary easements over the land between the existing plant and its land would be nearly impossible.
3. As for drilling a well, its property deed reserved the ground water to the seller, and even if it could drill a well, the property is above the 'Īao aquifer, and obtain a permit would not be possible.

(*Id.*, ¶¶ 4-5.)

414. Waikapu Ranch Applicants

The following six applicants are owners of 6 of the 8 lots in the Waikapu Ranch subdivision and have applied for recognition of appurtenant rights and new use permits. Waikapu Ranch had filed an existing use SWUPA but was instructed by the Commission to file a new use SWUPA after the existing use SWUPA was found to be incomplete and not accepted. Subsequently, the 6 owners filed individual new use SWUPAs and claims for appurtenant rights. (Exh. OHA-27; Provisional Order, Attachment C, Revised Exh. 7, p. 44.) (Hui/MTF and OHA: FOF C-196.)

415. SWUPA 3671N—Kurt & Betsy Sloan

a. On October 9, 2012, the Sloan 'ohana filed a new use SWUPA for TMK No. (2) 3-5-004:111 (“lot 5”), a 5.511-acre parcel, for which they requested 25,600 gpd on 4 acres of fruit orchard. (SWUPA 3671N, p. 2, table 1, p. 3, table 2.) (Joint Proposed Findings of Fact and Conclusions of Law for Applicants Ken Ota et al. (“Joint Proposed”): FOF 24; Hui/MTF and OHA: FOF C-213.)

b. On July 5, 2016, the Sloan ‘ohana filed an amended new use SWUPA, changing his request to 65,000 gpm (2,167 gpd) for the same 4 acres of fruit orchard, or 433.3 gad. (SWUPA 3671N, dated 7/5/16, p. 2, table 1, p. 3, table 2; Sloan, WT, 2/26/16, ¶ 3.) (Joint Proposed: FOF Proposed: FOF 13; Hui/MTF and OHA: FOF C-217.)

c. The Sloan ‘ohana bought the property in April 2008, when it was pretty much a cane field. When the property closed, they started planting what are now approximately 500 trees, which now provides income to pay their mortgage. (Sloan, Tr., 7/22/16, p. 108, l. 5 to p. 109, l. 10, p. 128, l. 16 to p. 129, l. 1, p. 129, l. 23 to p. 130, l. 5.)

d. Sloan states that his request is for about 2,000 gpd, but his current use is 1,000 gpd for his 9-year-old trees. However, “2,000 gallons per day is really small,” “real conservative for our farm,” is based on “best uses,” and figures that “maybe right now is using about a third of what it will when they’re full grown.” (Sloan, Tr., 7/22/16, p. 109, ll. 19-24, p.112, ll. 6-17.)

e. Although the Sloan ‘ohana claimed appurtenant rights in their SWUPAs, they did not participate in the provisional approval process. Kurt Sloan states that he filed the SWUPA in 2012 because Avery Chumbley told him that they stood a chance of losing their water and helped him get started on the paperwork. (Sloan, Tr., 7/22/16, p. 122, ll. 13-23.)

f. The deed to Lot 5 contains a reservation of water rights made in May 2004. (Exh. A to Exh. Sloan-1, at 12, ¶ 6.) (Hui/MTF and OHA: FOF C-211.)

g. In his February 29, 2016 written testimony, Sloan requested recognition of appurtenant rights for 2,167 gpd, the same amount as for his amended new use SWUPA request of 2,167 gpd. (*Id.*, ¶ 3.) (Hui/MTF and OHA: FOF C-217.)

h. Lot 5 is derived from all of LCA 2203, confirmed by RP 3131, and portions of LCA 8875, confirmed by RP 5926, and LCA 3702, confirmed by RP 6338, and other LCAs within the subdivision that were not documented. (Exh. Sloan-1; Sloan, Tr., 7/22/16, p. 131, l. 20 to p. 133, l. 1.) (Joint Proposed: FOF 8.)

i. LCA 2203 was 0.97 acres and referred to as “taro lands” and a “section of loi.” All 0.97 acre is part of Lot 5. (Sloan, WT (supplemental), 8/16/16, ¶ 7; Ota, WT, 2/26/16, ¶¶ 6, 9; Exhs. Ota-1, -10, -11, -13, -27.) (Joint Proposed: FOF 12.)

j. LCA 8875 was 0.96 acres, and referred to as house lot and four taro lo‘i. Approximately 90 percent (0.864 acre) is part of Lot 5. (Sloan, WT (supplemental), 8/16/16, ¶ 5; Ota, WT, 2/26/16, ¶ 7; Exhs. Ota-1, -6, -7, -27.) (Joint Proposed: FOF 9.)

k. LCA 3702 was 2.21 acres, and described as taro, dryland, and a house lot and that there was a pō‘alima in it. Approximately 25 percent (0.553 acres) is part of Lot 5. (Sloan, WT (supplemental), 8/16/16, ¶ 6; Exhs. Ota-1, -8, -27.) (Joint Proposed: FOF 10-11.)

l. Of LCA 2203’s 0.97 acre, all 0.97 acre is presumed to have been in lo‘i kalo, *supra*, FOF 163.

m. Of LCA 8875’s 0.96 acres, the house lot is presumed to have been 0.25 acre, with the remainder of 0.71 acre presumed to be in lo‘i kalo, *supra*, FOF 162. Therefore, the house lot was 26 percent and kalo lo‘i was 74 percent. 74 percent of Lot 5’s share of 0.864 acre is 0.639 acre.

n. Of LCA 3702’s 2.21 acres, the house lot is presumed to have been 0.25 acre, and the remaining 1.96 acre equally divided into dryland and taro, or 0.98 acre in lo‘i kalo, *supra*, FOF 162, 168. 0.98 acre of lo‘i kalo out of 2.21 acres is 44 percent, and 44 percent of Lot 5’s share of 0.553 acre is 0.243 acre.

o. Therefore, of Lot 5’s 5.511 acres, appurtenant rights would attach to 1.852 acres (0.97 + 0.639 + 0.243 = 1.852).

416. SWUPA 3665N—Ken & Saedene Ota

a. On September 27, 2012, the Ota ‘ohana filed a new use SWUPA for TMK No. (2) 3-5-004:109 (“Lot 3”), a 5.2-acre property for which they requested 25,600 gpd for 4 acres of Hawaiian landscape tree nursery. (SWUPA 3665N, p. 2, table 1, p. 3, table 2.) (Joint Proposed: FOF 26; Hui/MTF and OHA: FOF C-201.)

b. On July 5, 2016, Ota filed an amended new use SWUPA, changing his request to 5,667 gpd for the same 4 acres and same use. (Ota, WT, 2/29/16, ¶¶ 3, 17; Ota-Exhibit 16, p. 2, table 1, p. 3, table 2.) (Joint Proposed: FOF 24; Hui/MTF and OHA: FOF C-198.)

c. The Ota ‘ohana bought the property in April 2008, which was all grass. About 75 percent of his planned four acres, or three acres, are currently planted with landscape and fruit trees. He uses about 1,100 gad, for a total of about 3,300 gpd for the currently planted acres and is requesting a little over 5,000 gpd. (Ota, Tr., 7/19/16, p. 72, ll. 8-9, p. 73, l. 14 to p. 74, l. 17.)

d. Although the Ota ‘ohana claimed appurtenant rights in their SWUPAs, they did not participate in the provisional approval process and submitted documentation on February 29, 2016. (Ota, WT, 2/29/16; Ota, Tr., 7/19/16, p. 87, l. 20 to p. 89, l. 6.) (Hui/MTF and OHA: FOF C-211.)

e. The deed to Lot 3 contains a reservation of water rights made in May 2004. (Exh. A to Exh. Ota-15, at 16, ¶ 6.) (Hui/MTF and OHA: FOF C-197.)

f. In his February 29, 2016 written testimony, Ota requested recognition of appurtenant rights for 5,667 gpd, the same amount as for his amended new use SWUPA request of 5,667 gpd. (*Id.*, ¶ 3.) (Hui/MTF and OHA: FOF C-201.)

g. In his written testimony, Ota stated that Lot 3 was comprised of a portion of multiple LCAs that made up the eight-lot subdivision, but the property description stated that Lot 3 derives from only one of the LCAs, “a portion of Grant 2007, Apana 3 to John Richardson.” (Ota, WT, 2/29/16, ¶ 4; Exhibit A to Exh. Ota-15, at 5; Exhs. OHA-26, 30; Ota, Tr., 7/19/16, p. 89, l. 23 to p. 90, l. 1 to p. 93, l. 22.) (Hui/MTF and OHA: FOF C-199.)

h. Ota stated that Grant 2007 includes a description of an irrigated patch, but the reference to an irrigated patch was to ‘āpana 2 and not to ‘āpana 3. (Ota, Tr., 7/19/16, p. 94, l. 5 to p. 96, l. 7.) (Hui/MTF and OHA: FOF C-200.)

i. Ota was unable to identify any evidence he submitted that established water use on Lot 3 at the time of the Māhele. (Ota, Tr., 7/19/16, p. 96, ll. 4-7.) (Hui/MTF and OHA: FOF C-200.)

417. SWUPA 4442N—Gerald Lau Hee

a. On February 29, 2016, Gerald Lau Hee filed testimony in support of a new use SWUPA that he would be filing. On July 5, 2016, Gerald Lau Hee filed a new use SWUPA for TMK No. (2) 3-5-004:023 (“Lot 1”), a 5.973-acre property, for 1,667 gpd on a proposed 4 acres of fruit trees. (SWUPA 4442N, p. 2, table 1, p. 3, table 3; Exhibit A, p. 5 of Exh. Lau Hee-1; Kaeo Lau Hee, Tr. 9/19/16, p. 90, l. 19 to p. 91, l. 24.) (Joint Proposed: FOF 34-35, 76.)

b. The Hee ‘ohana bought the property in 2015 and intend to build a home on it. There are plans for a main house, a cottage, and a barn. Since they bought the property, they have fenced the perimeter of the lot and planted some bananas and citrus and will have 4 acres of fruit and nut trees and do not intend on selling anything. (Hee, WT, 2/29/16, ¶ 1; Kaeo Lau Hee, Tr. 9/19/16, p. 79, l. 21 to p. 80, l. 20.) (Joint Proposed: FOF 34.)

c. The deed to the property has a reservation of water rights dated May 2004. (Exhibit A to Exh. Lau Hee-1 at 10, ¶ 8.) (Hui/MTF and OHA: FOF C-219.)

d. Hee claimed appurtenant rights in his SWUPA of July 5, 2016 and requested 1,667 gpd in appurtenant rights, the same amount of his permit request, and provided documentation in his written testimony of February 29, 2016. (SWUPA 4442N, p. 1; *Id.*, ¶¶ 3-10.)

e. In his written testimony, Lau Hee stated that Lot 1 was comprised of a portion of multiple LCAs that made up the eight-lot subdivision, but the property description only identifies Grant 2007, ‘āpana 3; Grant 1714, ‘āpana 2; LCA 8672, ‘āpana 1, confirmed by RP 6483; and LCA 2225, confirmed by RP 3116. (*Id.*, ¶ 4; Exhibit A to Exh. Lau Hee-1, p. 4.)

f. The description of an irrigated patch ascribed to Grant 2007, ‘āpana 3, was to ‘āpana 2 and not to ‘āpana 3. (Lau Hee, Tr. 9/19/16, p. 83, ll. 1-12; Ota, Tr., 7/19/16, p. 94, l. 5 to p. 96, l. 7.) (Hui/MTF and OHA: FOF C-200.)

g. Lau Hee did not submit any evidence of water use on Grant 1714, ‘āpana 2 at the time of the Māhele. (Lau Hee, Tr. 9/19/16, p. 83, ll. 13-20.)

h. Nor did Lau Hee submit any evidence of water use on LCA 8672, ‘āpana 1. (Lau Hee, Tr. 9/19/16, p. 83, l. 21 to p. 84, l. 3.)

i. As for LCA 2225, if any is in Lot 1, it might be a few square feet. (Lau Hee, Tr. 9/19/16, p. 84, l. 4 to p. 85, l. 7.)

418. SWUPA 4443N—Roy Kitagawa

a. On July 5, 2016, Roy Kitagawa filed a new use SWUPA for TMK No. (2) 3-5-004:110, consisting of 4 acres, on which he proposed to grow ornamental and fruit trees, using 416.7 gad, for a total of 1,166.7 gpd. (SWUPA 4443N, p. 2, table 1, p. 3, table 2.)

b. On February 24, 2016, Kitagawa had submitted written testimony in support of the SWUPA that he would be filing and for appurtenant rights that he would be claiming. (Kitagawa, WT, 2/24/16, ¶ 3.)

c. Kitagawa did not participate in the hearings on provisional approval of appurtenant rights, which had a deadline of February 6, 2012 for applications to be filed and which had concluded on December 31, 2014, *supra*, FOF 19-20.

d. Kitagawa subsequently withdrew his SWUPA during the hearings. (Joint Proposed: FOF 1, ft. 1; Tr., 9/19/16, p. 4, ll. 21-22.)

419. SWUPA 4444N—Anthony Takitani

a. On February 29, 2016, Anthony Takitani filed testimony in support of a new use SWUPA that he would be filing. On July 5, 2016, Takitani filed a new use SWUPA for TMK No. (2) 3-5-004:113 (“Lot 7”), a 5.121-acre property, for which he requested 2,833 gpd for 3.5 acre of fruit and ornamental trees at 769 gad, and 0.5 acre of pasture for goats at 283 gad. He started in 2013 with 1.0 acre of trees and the 0.5 acre pasture. (SWUPA 444N, p. 2, table 1, p. 3, table 2; Exhibit A, p. 8 to Exh. Takitani-1.) (Joint Proposed: FOF 30; Hui/MTF and OHA: FOF C-207.)

b. Takitani bought the property in May 2008 and uses it mostly now for his residence and the pasture for his goats. (Takitani, Tr., 7/19/16, p. 105, ll. 15-17.)

c. The deed to Lot 7 has a reservation of water rights that date to May 2004. (Exhibit A, p. 14 to Exh. Takitani-1.) (Hui/MTF and OHA: FOF C-203.)

d. Takitani also requested recognition of appurtenant rights, and in both his appurtenant rights claim and water-use permit requests, Takitani requested 85,000 gpm, or 2,8333 gpd. Takitani stated that he didn’t know what was used at the time of the Māhele and was requesting what he would need for potential future agricultural use. (Takitani, WT, 2/29/16, ¶ 3; SWUPA 444N, p. 1; Takitani, Tr., 7/19/16, p. 105, l. 22 to p. 106, l. 9.)

e. Lot 7 is a portion of Grant 2007, ‘āpana 3; LCA 3702, confirmed by RP 6338; LCA 2225, confirmed by RP 3116; and LCA 443, confirmed by RP 497. (Exhibit A, p. 8 to Exh. Takitani-1.)

f. Takitani states that Grant 2007 includes a description of an irrigated patch, but the description of an irrigated patch ascribed to Grant 2007, ‘āpana 3, was to ‘āpana 2 and not to ‘āpana 3. (*Id.*, ¶ 6; Lau Hee, Tr. 9/19/16, p. 83, ll. 1-12; Ota, Tr., 7/19/16, p. 94, l. 5 to p. 96, l. 7.) (Hui/MTF and OHA: FOF C-200.)

g. LCA 3702 was 2.21 acres, and described as taro, dryland, and a house lot and that there was a pō‘alima in it. (*Id.*, ¶ 8; Exh. Ota-1, -8.)

h. LCA 2225 was described as three “taro pauku” and one “Wauke kula.” (*Id.*, ¶ 10; Exh. Ota-13.)

i. Takitani also referenced LCA 2203 as “taro” and a “section of loi,” but the LCA is not part of Lot 7. (*Id.*, ¶ 10; Exh. Ota-12.)

j. Takitani did not provide any documentation of LCA 443, but in Ota’s documents, which Takitani and the others relied on, LCA 443 is described as containing “6 acres, 1 rood, 29 rods,” but no (translated) description of its uses. (Exhs. Ota-2, -3.)

k. Takitani did not provide any documentation of the acreage of the LCAs that are contained in Lot 7.

420. SWUPA 4445N—SPV Trust (Shane Victorino)

a. The written direct testimony of Michael Victorino, for applicant SPV Trust, was submitted in the hearing on September 20, 2016. (Tr., 9/20/16, p. 4, l. 25 to p. 5, l. 19.) (Joint Proposed: FOF 2.)

b. On March 3, 2016, Michael Victorino filed testimony on behalf of his son, Shane Victorino, investment trustee of SPV Trust, in support of a SWUPA that they would be filing. The new use SWUPA was filed on July 5, 2016, for TMK No. (2) 3-5-004:112 (“Lot 6”), a 6.062-acre property, for 1,667 gpd for 4 acres of fruit trees at a rate of 417 gad. (Victorino, WT, 3/3/16, ¶ 3; SWUPA 4445N, p. 2, table 1, p. 3, table 2; Exhibit A, p. 8 to Exh. SPV-1.) (Joint Proposed: FOF 32.)

c. SPV Trust purchased the property in 2014, after the Provisional Approval hearings, on which Shane Victorino intends to build a home. The property is subject to a reservation of water rights made in May 2004. (Victorino, WT, 3/3/16, ¶ 1; Exhibit A to Exh. SPV-1, p. 9.) (Joint Proposed: FOF 18; Hui/MTF and OHA: FOF C-225.)

d. SPV Trust requests appurtenant rights in the same amount as the SWUPA request, 1,667 gpd. (Victorino, WT, 3/3/16, ¶ 3.) Hui/MTF and OHA: FOF C-231.)

e. Lot 6 is comprised of a portion of LCA 920, ‘āpana 2, confirmed by RP 2004; LCA 3702, confirmed by RP 6338; and LCA 443, confirmed by RP 497. (Exhibit A to SPV-1, p. 1.) (Hui/MTF and OHA: FOF C-227.)

f. LCA 920:2 was 8 acres and described as “kula.” (Exh. Ota-5.) (Hui/MTF and OHA: FOF C-229.)

g. LCA 3702 was 2.21 acres, and described as taro, dryland, and a house lot and that there was a pō‘alima in it. A small portion is part of the flag/driveway of Lot 6. (Victorino, WT, 3/3/16, ¶ 8; Sloan, WT (supplemental), 8/16/16, ¶ 6; Exh. Ota-1, -8, -27.) (Joint Proposed: FOF 8, 15; Hui/MTF and OHA: FOF C-229.)

h. LCA 443 was described as containing “6 acres, 1 rood, 29 rods,” but no (translated) description of its uses. (Exhs. Ota-2, -3.)

i. Apart from the reference to a small portion of LCA 3702 being part of Lot 6’s flag/driveway, there is no information of how much of these LCAs presently comprise Lot 6.

421. SWUPAs 2207/2208N—Makani Olu Partners

a. On April 23, 2009, Makani Olu filed an existing use SWUPA for TMKs (2) 3-5-004-014 (“Parcel 14”) and (2) 3-5-004-018 (“Parcel 18”), and a new use SWUPA for Parcel 18.

1. Parcel 14 is 1.2 acres and Parcel 18 is 67.4 acres.
2. The existing use request was for 17,948 gpd in metered use:
 - a. Parcel 14:
 - i. 2,900 gpd for 0.75 acre of agriculture crops (fruit trees), at a rate of 3,867 gad (2,900/0.75);
 - ii. 1,000 gpd for 0.25 acre of ornamental plants and a nursery greenhouse, at a rate of 4,000 gad (1,000/0.25); and
 - iii. 1,200 gpd for 0.20 acre of cemetery landscape, at a rate of 6,000 gad (1,200/0.20).
 - b. Parcel 18:
 - i. 1,200 gpd for 0.25 acres of bananas and papayas, at a rate of 4,800 gad (1,200/0.25);
 - ii. 8,348 gpd for 4.0 acres of livestock consumption feed, forage pasture, at a rate of 2,087 gad (8348/4.0);
 - iii. 1,000 gpd for 0.25 acre of tree field stock nursery, at a rate of 4,000 gad (1,000/0.25); and
 - iv. 2,500 gpd for 1.0 acre of home site landscape.
3. The new use request was for 453,530 gpd for 58.9 acres of feed and forage pastures for livestock, at a rate of 7,700 gad.

4. All of Parcel 14's 1.2 acres were included in the existing use request, and of Parcel 18's 67.4 acres, 64.4 acres were covered: 5.5 acres in existing use and 58.9 acres for a new use.

(SWUPA 2207, p. 3, table 2, p. 4, table 3; SWUPA 2208N, p. 2, table 1.)

b. Makani Olu filed for provisional recognition of appurtenant rights for Parcel 18's 67.4 acres, submitting documentation for 26 LCAs, 23 of which were approved by the Commission. (Provisional Order, Attachment C, Revised Exhibit 7, pp. 35-37.)

c. Makani Olu requested recognition of appurtenant rights for Parcel 18 for 2.235 mgd, based on the following:

1. There were a total of 404 lo'i in the 23 LCAs recognized as having water use at the time of the Māhele.
2. Using a historical description of lo'i as measuring 40 x 40 feet, or 1,600 square feet, 404 lo'i would equal 14.9 acres of lo'i.
3. The Commission had estimated water requirements for lo'i complexes of 130,000 to 150,000 gad in its 2010 D&O.
4. Multiplying 14.9 acres by 150,000 gad, results in 2.235 mgd.

(Chumbley, WT, 2/2/16, pp. 1-11.)

d. Makani Olu had claimed that 100 percent of the LCAs with appurtenant rights were within the lands owned by it, but when it looked at greater detail, some LCAs were shared with other TMKs. OHA then introduced into evidence a list of 21 LCAs, of which 7 were solely owned by Makani Olu, and 14 were shared with other TMKs. (Chumbley, Tr., 7/19/16, p. 194, l. 3 to p. 194, l. 18; Exh. OHA-32.)

e. OHA's list of 21 was in fact complete and contained all 26 LCAs on which the Commission had provisionally ruled. The Commission had separately addressed LCA 5742's two 'āpana and LCA 11022's four 'āpana, in addition to separately addressing LCA 11022's 'āpana 1 for both Parcels 14 and 18. (Provisional Order, Attachment C, Revised Exhibit 7, pp. 35-37.)

f. Makani Olu was the sole owner of 7 LCAs:

1. One LCA had been denied:
 - a. LCA 3539:1 was 2.17 acres but the Commission found that no water use was documented. (Exh. 2207-Makani Olu-1.)

- b. However, LCA 3539:1 was described as mo‘o with 48 lo‘i and also a kula and a house site. (Appurtenant Rights Documentation (2207),²⁵ pp. 244, 254-257, 259, 263-265.)
- c. Therefore, LCA 3539:1 had water use on 0.96 acres ($2.17 - 0.25 = 1.92/2 = 0.96$).

2. Makani Olu claimed that the other six LCAs had water use:

- a. LCA 2208 was claimed to be 0.12 acre of lo‘i.
 - i. There was no ‘āpana 1.
 - ii. ‘āpana 2 was 0.12 acre and described as a small mo‘o and 2 other lo‘i, or as 4 lo‘i.

(Appurtenant Rights Documentation (2207), pp. 71, 78, 85.)

- b. LCA 3343 was claimed to be 0.98 acre of kalo land. On the other hand, there is no description of the contents of the 0.98 acres. (Appurtenant Rights Documentation (2207), pp. 155-157, 161-162.)
- c. LCA 3402 was claimed to be 2.83 acres of lo‘i.
 - i. Lots 1 & 6 were 1.94 acres of taro and kula land.
 - ii. Lot 3 was 0.58 acres of taro.
 - iii. Lot 5 was 0.31 acre of a house lot and taro.
 - iv. There were no lots 2 or 4.

(Appurtenant Rights Documentation (2207), pp. 170, 174-176, 179, 181.)

- v. Therefore, water use was 1.61 acres: lots 1&6 was 0.97 acres ($1.94/2 = 0.97$), lot 3 was 0.58 acre, and lot 5 was 0.06 acre ($0.31 - 0.25 = 0.06$).
- d. LCA 3525 was claimed to be 0.24 acre of lo‘i. LCA 3525 ‘āpana 3 was described as a house lot on 0.24 acres, so there was no water use. ‘āpana 1 had been given to someone else,

²⁵ This document has no page numbers, and the LCAs are generally listed in chronological order. Page numbers are the pdf pages in the electronic version.

and ‘āpana 2 was not cultivated. (Appurtenant Rights Documentation (2207), pp. 214, 221.)

- e. LCA 3547 was claimed to be 2.19 acres of lo‘i. The description was for 219 acres of a mo‘o with 33 lo‘i, or a taro pauku. (Appurtenant Rights Documentation (2207), pp. 277, 289, 300, 305.)
- f. LCA 8586 was claimed to be 1.15 acres of lo‘i. ‘āpana 1:1 was described as 0.38 acre of a taro mo‘o with one pō‘alima, ‘āpana 2:2 as 0.76 acre of a taro pauku, and ‘āpana 3 as 0.01 acre with no description. (Appurtenant Rights Documentation (2207), pp. 375, 379, 381.) (Exh. OHA-32; Exhs. 2207-Makani Olu-1, -2.)

g. These seven LCAs comprised 9.68 acres of Parcel 18’s 67.4 acres, leaving 57.72 acres.

h. Of the 14 LCAs shared with other TMKs, the proportion of four (4) LCAs between Parcel 18 and other TMKs can be determined as follows:

- 1. LCA 205 was 13.61 acres of approximately 7/8s kalo patches and 1/8 coffee grounds.
 - a. SWUPA 2276—Ione Shimizu’s parcel 31 is 0.53 acre and a portion of LCA 205.
 - b. Therefore, Parcel 18 contains 13.08 acres of LCA 205, 7/8s of which was in kalo, or 11.45 acres.

(Exhs. 2207-Makani Olu-1, -2; FOF 436, *infra*, SWUPA 2276—Shimizu.)

- 2. LCA 434 was 5.2 acres with 41 lo‘i.
 - a. SWUPA 2268—Katherine Riyu’s parcel 28 is 0.61 acre, all of which are in LCA 434.
 - b. SWUPA 2338—Judith Yamanoue’s parcels 27 and 41 total 1 acre (0.71 + 0.29), about 3/5s, or 0.6 acre, is in LCA 434.
 - c. Therefore, Parcel 18 contains about 3.99 acres of LCA 434.

(Exhs. 2207-Makani Olu-1, -2; FOF 437, *infra*, SWUPA 2268—Riyu; FOF 438, *infra*, SWUPA 2338—Yamanoue.)

- 3. LCA 8672 was claimed to be 1.86 acres of lo‘i.
 - a. LCA 8672 consisted of three ‘āpana:

- i. 'āpana 1 was 1.55 acres in taro and kula.
 - ii. 'āpana 2 was 0.25 acre in taro.
 - iii. 'āpana 3 was 0.06 acre with one patch.
 - iv. Some testimony states that 'āpana 2, and not 'āpana 1, was in kalo and kula, but the claimant describes 'āpana 1 as a mo'ō with 11 lo'i and a kula adjoining the west side of the mo'ō.
 - v. Therefore, 1.09 acres was in kalo ($1.55/2 + 0.25 + 0.06$).
- b. SWUPA 4442N—Gerald Lau Hee's Lot 1 is 5.973 acres and comprised of portions of Grant 2007:3, Grant 1714:2, LCA 2225, and LCA 8672:1. Lot 1's description largely consists of descriptions of the two grants, with the LCAs identified at the end of the boundary descriptions, and LCA 2225 described as maybe a few feet of Lot 1. Therefore, Hee's Lot 1 likely also contained only a very small portion of LCA 8672:1.

(Exhs. 2207-Makani Olu-1, -2; FOF 417, *supra*, SWUPA 4442N—Lau Hee.)

4. LCA 11022 was claimed to be 4.44 acres and consisting of four 'āpana, with 1-3 described as taro mo'ō, and no reference to water use in 'āpana 4.
 - a. 'āpana 1 was 0.48 acre, 'āpana 2 and 3 were 3.29 acres, and 'āpana 4 was 0.67 acres.
 - b. Therefore, water use was 3.77 acres ($4.44 - 0.67$).
 - c. LCA 11022 consisted of 4 other 'āpana in Waikapū: 'āpana 5-7 were pō'alima—sizes not specified, and 'āpana 8 was a houselot of 0.6 acre. Waikapu Properties' Parcel 3 contains 'āpana 6.

(Appurtenant Rights Documentation (2207), pp. 3, 57, 411-413, 417-419; Provisional Order, Attachment C, Revised Exhibit 7, pp. 36-37; Exhs. 2207-Makani Olu-1, -2; Exh. 2356-Waikapu-3, Attachment 1-A, Quitclaim Deed, 10/26/2006, handwritten pages 12, 15; Exh. OHA-32.)

i. The preceding four (4) LCAs comprise 23.37 acres of Parcel 18. The seven LCAs that are wholly within Parcel 18's 67.4 acres comprised 9.68 acres, leaving 57.72 acres. Subtracting 23.37 acres from 57.72 acres leaves 34.35 acres.

j. The following four (4) LCAs have acreage remaining after accounting for their inclusion in Parcel 18:

1. LCA 3201 was 3.85 acres of pasture and had been denied. (Exhs. 2207-Makani Olu-1; -2; Provisional Order, Attachment C, Revised Exh. 7, p. 36.)

a. However, the reference to pasture was in a second 'āpana, where the pasture was adjacent to it:

i. 'āpana 1 was 3.85 acres, bordered by 'auwai, and uncultivated land on the western side.

ii. 'āpana 2 was 1.6 acres, bordered by walls and kula land, and a road and pasture to the east.

iii. Thus, there was 1.6 acres more of LCA 3201 than was claimed by Makani Olu.

(Appurtenant Rights Documentation (2207), pp. 139, 144, 148-150.)

b. By the description that 'āpana 1 abuts 'auwai and that uncultivated land was on the western side, it can be presumed that the 3.85 acres was being cultivated in kalo lo'i, *supra*, FOF 165.

2. LCA 492 was claimed to be 10.26 acres of taro.

a. However, 'āpana 1 was 10.26 acres, but described as taro pauku and kula with 1 pō'alima, with 51 taro patches.

b. Therefore, water use was 5.13 acres.

c. There were other lots totaling 1.23 acres in LCA 492: a kaina of 0.1 acre, a pō'alima of 0.8 acre, 'āpana 2 had been exchanged, 'āpana 3 was 0.08 acre of a taro patch, 'āpana 4 was 0.25 acre of a house lot.

(Appurtenant Rights Documentation (2207), pp. 54, 56-57, 62-63.)

3. LCA 3549 was claimed to be 2.62 acres of lo'i.

- a. 'āpana 1 was described as 2.62 acres of taro paukū with 1 lo'i pō'alima and 1 lo'i pa'ahao within it.
- b. There were other 'āpana totaling 3.64 acres: 'āpana 2 was 2.12 acres of taro paukū, and 'āpana 3 was 1.52 acres of taro paukū.

(Appurtenant Rights Documentation (2207), pp. 301, 325, 334-336, 421.)

- 4. LCA 5742 was claimed to be 1.2 acres with 17 lo'i, a house lot, and some dry land.
 - a. 'āpana 1:1 was 0.72 acre and 1:2 was 0.36 acre, for a total of 1.2 acre of taro paukū with 31 lo'i and 1 pō'alima.
 - b. There was an additional 0.12 acre of a house lot and a dry lo'i in 'āpana 2.

(Appurtenant Rights Documentation (2207), pp. 354-355, 357, 359-360, 364-365.)

k. The preceding four (4) LCAs comprised 17.93 acres of Parcel 18 and had additional acreage not accounted for in Parcel 18's shares and which would be in other LCAs. Subtracting 17.93 acres from the 34.35 acres remaining after subtracting the acreage from eleven (11) LCAs that were previously described from Parcel 18's 67.4 acres, leaves 16.42 acres.

l. Makani Olu claims 17.56 acres from the remaining six (6) LCAs, meaning that it claims 1.14 acres more than is remaining in Parcel 18 after the previous 15 LCAs were accounted for. Because the exact proportions for each of the six (6) remaining LCAs are not known, each will be reduced by 16.42/17.56, or by 9 percent.

- 1. LCA 3104 was claimed to be 1.67 acres of taro and kula.
 - a. LCA 3104 was 1.83 acres, minus 0.16 acre of a pō'alima that was exchanged, or a net of 1.67 acres. It was described as kalo and kula, and with 33 lo'i.
 - b. The acreage is reduced by 9 percent, or from 1.67 acres to 1.52 acres.
 - c. Water use would be on 0.76 acres (1.52/2), or half taro, half kula.

(Appurtenant Rights Documentation (2207), pp. 96, 98, 102, 105, 113.)

2. LCA 3107 was claimed to be 3.62 acres of taro.
 - a. However, ‘āpana 1 was 0.8 acres of taro paukū, ‘āpana 2 was 1.27 acres of taro paukū, ‘āpana 3 and 4 were included in other LCAs, ‘āpana 5 was 0.9 acre of taro paukū, ‘āpana 6 was 0.12 are of 3 lo‘i, and ‘āpana 7 was 0.53 acre of aouselot.
 - b. 3.62 acres are reduced by 9 percent, or from 3.62 acres to 3.29 acres.
 - c. Therefore, water use was for 2.76 acres (3.29 – 0.53 for the ouselot).

(Appurtenant Rights Documentation (2207), pp. 110, 113, 121-123.)

3. LCA 3508 was claimed to be 3.21 acres of taro.
 - a. However, ‘āpana 1 was 0.69 acre of a ouselot and kula, ‘āpana 2 was 1.87 acres of taro paukū, and ‘āpana 3 was 0.65 acre of taro mo‘o.
 - b. 3.21 acres are reduced by 9 percent, or from 3.21 acres to 2.92 acres.
 - c. Therefore, water use was for 2.23 acres (2.92 – 0.69 for the ouselot and kula).

(Appurtenant Rights Documentation (2207), pp. 90, 105.)

4. LCA 3538 was claimed to be 1.91 acre of taro and kula.
 - a. However, ‘āpana 1 was 1.64 acres of taro land plus 0.12 acre for a ouselot, and ‘āpana 2 was 0.25 acre of a taro patch.
 - b. 1.91 acres are reduced by 9 percent, or from 1.91 acres to 1.74 acres.
 - c. Therefore, water use was for 1.62 acres (1.74 – 0.12 for the ouselot).

(Appurtenant Rights Documentation (2207), pp. 248-249.)

5. LCA 3545 was claimed to be 2.08 acre of lo‘i.

- a. However, it was described as 2.08 acres of a mo‘o of 36 lo‘i and a kula, with 3 pō‘alima within it.
- b. 2.08 acres are reduced by 9 percent, or from 2.08 acres to 1.89 acres.
- c. Therefore, water use was for 0.95 acres (1.89/2).

(Appurtenant Rights Documentation (2207), pp. 273, 275, 181-282.)

- 6. LCA 3548k was claimed to be 5.07 acres of a pa‘ahao patch, which the Commission provisionally approved as a water use.
 - a. However, it was described as 5.07 acres of a mo‘o with 49 lo‘i, less 1.5 acres of a pa‘ahao patch, for a net of 3.57 acres (5.07 ac - 1.5 ac).
 - b. 3.57 acres are further reduced by 9 percent, from 3.57 acres to 3.25 acres.

(Appurtenant Rights Documentation (2207), pp. 313, 327.) (Exhs. 2207-Makani Olu-1, -2; Exh. OHA-32; Provisional Order, Attachment C, Revised Exh. 7, pp. 35-37.)

m. From the foregoing analysis of the 21 LCAs, there were 50.69 acres in lo‘i kalo at the time of the Māhele, out of a total of 65.54 acres of Parcel 18’s 67.4 acres. Out of the 65.54 acres, two LCAs were determined not to have any lo‘i kalo at the time of the Māhele: LCA 3343’s 0.98 acre, and LCA 3525’s 0.24 acres, leaving 64.32 (65.54 – 1.22) acres of Parcel 18’s 67.4 acres with all or part of the acreage in lo‘i kalo at the time of the Māhele.

n. The acreage claimed by Makani Olu for appurtenant rights on Parcel 18’s 67.4 acres was 14.9 acres, based on assumptions of the size of lo‘i kalo at the time of the Māhele and a count of lo‘i among the 23 provisionally approved LCAs. (Chumbley, WT, 2/2/16, p. 2.)

o. The different methods employed by Makani Olu and Kame‘eleihiwa lead to vastly different results. For example, LCA 434 was 5.2 acres and described as containing 41 lo‘i. Kame‘eleihiwa’s method would ascribe the entire 5.2 acres to lo‘i kalo, *supra*, FOF 163. Makani Olu’s method counted the 41 lo‘i and multiplied by 1,600 square feet, assuming a lo‘i size of 40x40 feet, resulting in 1.51 acres. (Chumbley, WT, 2/2/16, p. 3.)

422. SWUPA 2204—Luke McLean

a. On April 22, 2009, Glenn McLean filed an existing use SWUPA for TMK No. (2) 3-5-004:057 (“Parcel 57”). His son, Luke McLean, testified on his behalf that the permit be issued to his son. (SWUPA 2204, p. 1; McLean, WT, 3/18/16, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-871.)

b. Parcel 57 is 1.14 acres, for which Glenn McLean estimated existing use as 500 gpd in the SWUPA, but Luke now estimates it at 16,000 gpd for lo‘i kalo, Hawaiian food crops, a large vegetable garden, fruit orchard and a collection of native plants. Luke explained that, when the 500 gpd was listed, his father was representing the family at the time, lives in Hana, and hadn’t been on the land in probably the last 15 years. They have never had a water meter, and Luke believes his father “just made the humble assumption that that was all we were using.” (*Id.*, ¶¶ 13-14; McLean, Tr., 7/18/16, p. 107, l. 23 to p. 108, l. 9.)

c. Current use was listed for 1.25 acres, even though the property is only 1.14 acres: 0.5 acre of fruit trees, 0.25 acre of dryland taro, 0.25 acre of vegetables, and 0.25 acre of a native plant nursery. But the SWUPA had estimated only 500 gpd for all these uses and had requested another 500 gpd to open lo‘i. (SWUPA 2204, p. 2, table 1, p. 3, table 2, p. 4, table 3.

d. McLean now requests a permit for 300,000 gpd “to expand cultivation of historical lo‘i kalo, Hawaiian food crops, vegetable gardens, fruit orchards, and native plants.” (*Id.*, ¶ 21.)

e. McLean also requests recognition of appurtenant rights for 342,000 gpd for his 1.14 acres, applying Reppun’s high estimate of 300,000 gad, so presumably the 300,000 gpd permit request is for 1.0 acres of lo‘i kalo but he does not explain how the remaining 0.14 acres will maintain his other crops, since they presumably cover the entire parcel currently. (*Id.*, ¶ 21.) (Hui/MTF and OHA: FOF B-877.)

f. McLean is the direct lineal descendant of the original claimant to Parcel 57, Kuamu, who was awarded LCA 2225:1-4, confirmed by RP 3116. ‘āpana 1-3 consisted of sections of kalo, and ‘āpana 4 was wauke kula. (*Id.*, ¶¶ 3-4, 7-9; Exh. 2204-McLean-1-p. 4-6; McLean, Tr. 7/18/16, p. 112, ll. 1-3.)

g. LCA 2225:1-4 was 3.31 acres, of which the McLeans now own only Parcel 57’s 1.14 acres. (*Id.*, ¶ 4.)

h. Three-quarters of LCA 2225:1-4 was in lo'i kalo, or 2.48 acres, so appurtenant rights attach to three-quarters of Parcel 57, or 0.855 acre (1.14 acre x 0.75). The Commission had granted provisional approval. (Provisional Order, Attachment C, Revised Exh. 7, p. 35.)

423. SWUPA 2440N—Spencer Homes

a. On July 20, 2009, Spencer Homes Inc./Waikapu Gardens Subdivision filed a new use SWUPA for TMKs No. (2) 3-5-028:062, No. (2) 3-5-031:121, No. (2) 3-5-002:016, and No. (2) 3-5-029:098, for 115,446 gpd on 14.65 acres of 16.25 acres of common area and 2.3 acres of 16.53 acres of sod farms. (SWUPA 2240N, p. 2, table 1, p. 3, table 2.)

b. Spencer Homes did not claim appurtenant rights nor participate in the provisional approval process. (SWUPA 2240N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 38.)

c. Spencer Homes did not submit written testimony nor participate in the contested case hearing.

424. SWUPA 2191—Charles Dando Sr.

a. On April 20, 2009, Charles Dando Sr. filed separate existing use SWUPAs for TMKs No. (2) 3-5-030:116 (“Parcel 116”), situated in Waikapū, and (2) 3-4-033:014 (“Parcel 14”), situated in Wailuku, for home landscape irrigation. (SWUPA 2191, p. 4, table 3; SWUPA 2192, p. 4, table 3.) (Hui/MTF and OHA: FOF B-869.)

b. SWUPA 2191 is for Parcel 116’s 0.113 acre, for which he is requesting 1,749 gpd on 0.1 acre. (SWUPA 2191, p. 2, table 1, p. 4, table 3; Dando, WT, 7/25/16, ¶¶ 1-4). (Hui/MTF and OHA: FOF B-869.)

c. When it was pointed out that 1,74326 gpd over 0.1 acre was 17,430 gad, Dando replied that when he averaged the meter readings over a year in 2007 to 2008, he “was establishing the yard and everything, so it should be way down from that.” (Dando, Tr., 7/29/16, p. 97, ll. 1-16.) (Hui/MTF and OHA: FOF B-869.)

d. Dando did not participate in the provisional approval process and does not request recognition of appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 35.)

²⁶ The actual quantity was 1,749 gpd, not 1,743 gpd.

425. SWUPA 2154—Rojac Trucking, Inc.

a. On April 24, 2009, Rojac Trucking, Inc., filed an existing use SWUPA for TMKs No. (2) 3-5-027:017, No. (2) 3-5-027:018, and No. (2) 3-5-027:019, for a metered use of 5,145 gpd for 0.35 acre of 0.88 acre for landscaping, and 2.0 acres of 3.09 acres for dust control and cleaning/washing of trucks and maintenance areas. (SWUPA 2154, p. 2, table 1, p. 4, table 3.)

b. No claim was made for appurtenant rights, and Rojac Trucking did not participate in the provisional approval process. (Provisional Order, Attachment C, Revised Exh. 7, p. 35.)

c. Rojac Trucking did not submit written testimony nor participate in the contested case hearing.

d. Waikapū Stream

i. South Waikapū Ditch

426. The surface water sources for the following multiple SWUPAs from Waikapu Properties are Waikapū Stream and Waihe‘e Ditch, which contains waters from all of the streams and rivers. They are included here under South Waikapū Ditch, because Waikapu Properties’ original SWUPAs received water from Waikapū Stream through the South Waikapū Ditch’s Reservoir 1. When HC&S closed its sugar cane operations and returned the leased ‘Īao-Waikapū fields, Waikapu Properties amended its SWUPAs, which now includes HC&S’s former SWUPA 2205 for the ‘Īao-Waikapū fields, and intends to move its operations largely to the ‘Īao-Waikapū fields.

427. SWUPAs 2205, 2356/2297N, 3471N, and 3472N—Waikapu Properties

a. In 2005, through various entities, Michael Atherton, the managing general partner of several related entities, including but not limited to Waikapu Properties, Maui Tropical Plantation (“MTP”), and Waiale 905 Partners, LLC, acquired in excess of 1,600 acres involving four parcels of land from Wailuku Agribusiness. This includes the addition of organic row crop cultivation by Kumu Farms, as well as large-scale dryland taro, banana, and other row crop production by Ho‘aloaha Farms. (Atherton, WT, 2/5/16, ¶ 5.) (Waikapu Properties: FOF 26-27.)

b. In 2006, again through various entities, Mr. Atherton acquired MTP, which is addressed in SWUPA 2203—Maui Tropical Plantation, *infra*, FOF 475.

c. On April 22, 2009, HC&S had filed existing use SWUPA 2205 for its leased 'Āao-Waikapū fields, for which it requested 8.97 mgd, and which it subsequently returned to Waikapu Properties, *supra*, FOF 25. (SWUPA 2205, p. 2, table 1, p. 3, table 3.)

1. However, in the narrative accompanying its SWUPA, HC&S claimed that its daily use was 10.58 mgd, or 7,098 gad over 1,491 acres. (SWUPA 2205, Narrative, pp. 5-6.)
2. In its 2010 proposed D&O and reiterated in the 2014 mediated agreement, the Commission had found that reasonable use was 6.06 mgd, or 541 gad over 1,120 cultivated acres. (2014 Mediated Agreement: FOF 44-45.)

d. On April 30, 2009, Waikapu Properties filed:

1. Existing use SWUPA 2356 for TMK (2) 3-6-004:003 ("Parcel 3"), for which it requested a metered use of 516,714 gpd for 61.1 acres of Parcel 3's 657.2 acres, at a rate of 8,457 gad. The metered use was for sugar cane. Parcel 3 was planted in sugar cane by HC&S, and was not planned to continue in sugar cane but to be partially planted in coffee. (SWUPA 2356, p. 2, table 1, p. 3, table 2, caption to photo attachment.)
2. New use SWUPA 2297N for the same Parcel 3, for which it requested 1,340,000 gpd for 200 acres: a) 100 acres for livestock feed and forage at a rate of 7,700 gad (770,000 gpd); b) 30 acres of coffee, wind breaks, and ground cover at a rate of 10,000 gad (300,000 gpd); and c) 70 acres for reforestation of native and endemic trees and shrubs at a rate of 3,857 gad (270,000 gpd). (SWUPA 3472N, p. 2, table 1, p. 3, table 2.)

e. On February 6, 2012, Waikapu Properties filed new use SWUPA 3471N for TMK (2) 3-6-004-006 ("Parcel 6"), for which it requested 109,048 gpd on 52.98 acres for herbs at a drip irrigation rate of 2,058 gad. (SWUPA 3471N, p. 2, table 1, p. 3, table 2.)

1. Parcel 6 is elbow-shaped, with the long arm running along the west (mauka) side of MTP, above Waihe'e Ditch, and the short arm running along the south side of MTP, below the Waihe'e Ditch. Parcel 6 comprises parts of three fields:
 - a. The portion mauka of MTP is within field 733.
 - b. The "elbow," above the Waihe'e Ditch, is a portion of field 735.
 - c. The portion below the Waihe'e Ditch is within field 737.

(Exh. 3471-Waikapu-1; Waikapu Properties, LLC’s Notice With Regard to SWUPA 2206, 2356, 2297N, and 3472N, September 19, 2016, Exhibit A (map).) (Hui/MTF and OHA: FOF C-69 to C-73.)

f. On February 6, 2012, Waikapu Properties filed another new use SWUPA 3472N for TMK (2) 3-6-006-036 (“Parcel 36”), for which it requested 5,544 gpd on 0.72 acres for livestock feed and forage at a sprinkler rate of 7,700 gad. (SWUPA 3472N, p. 2, table 1, p. 3, table 2.)

1. Parcel 36 is a sliver of land between fields 761 and 763, below the Waihe’e Ditch. (Waikapu Properties, LLC’s First Amendment to SWUPA 2206, Exhibit A, November 30, 2016.)
2. The September 24, 2003 deed contained a reservation of water rights. (Exh. OHA-13 at 2.) (Hui/MTF and OHA: FOF C-44.)

g. Excluding SWUPA 2205, which was transferred from HC&S to Waikapu Properties in July 2016 while the contested case hearing was being conducted, Waikapu Properties’ total request was:

1.	SWUPA 2356:	516,714 gpd
2.	SWUPA 2297N:	1,300,000 gpd
3.	SWUPA 3471N:	109,048 gpd
4.	SWUPA 3472N:	<u>5,544 gpd</u>
	Total:	1,931,306 gpd

(Atherton, WT, 2/5/16, ¶ 13.) (Waikapu Properties: FOF 30.)

h. SWUPAs 2356 and 2297N were both for Parcel 3, which was in sugar cane under HC&S. Waikapu Properties did not explain why they applied for an existing use under SWUPA 2356 for converting sugar cane to coffee but filed a new use under SWUPA 2297N for converting the same sugar fields to other agricultural uses, when all uses could have been filed under existing use SWUPA(s).²⁷

²⁷ HRS 174C-3 defines “agricultural use” as “the use of water for the growing, processing, and treating of crops, livestock, aquatic plants and animals, and ornamental flowers or similar foliage,” and defines “existing agricultural use” as “replacing, or alternating the cultivation of any agricultural crop with any other agricultural crop, which shall not be construed as a change in use.”

i. Following the transfer of SWUPA 2205 from HC&S to Waikapu Properties during the contested case hearing, Waikapu Properties submitted additional testimony on expanding its current agricultural operations onto the ‘Āao-Waikapū fields. (Second Suppl. Decl. of Michael Atherton, and First Suppl. Decls. of Grant Schule, Robert Pahia, and William Jacintho, 8/24/16.) (Waikapu Properties: FOF 44.)

j. Grant Schule is founder and owner of Kumu Farms and farms over 80 acres in Waikapū, producing over 25 fruit and vegetables along with a handful of specialty crops and markets directly to customers on Maui, ships inter-island to O‘ahu, and exports SunRise papaya to the U.S. mainland. (Schule, WT, 5/29/16, ¶¶ 2-3; Schule, Tr., 7/28/16, p. 222, l. 9 to p. 223, l. 9.)

k. Bobby Pahia of Ho‘aloha Farms is the largest producer of dryland kalo in the state and currently farms 61 acres, primarily in dryland kalo, and allows other farmers to farm, who grow bananas, sweet potato, and various vegetable crops. (Pahia, WT, 5/29/16, ¶ 3; Pahia, Tr., 7/28/16, p. 228, ll. 11-19; First Amendment to SWUPA 2206, Exhibit A, November 30, 2016.)

l. William Jacintho is owner of Na‘alae Beef Company and Beef and Blooms and leases about 100 acres of pasture in Waikapū on which he raises about 50 head of Angus, Brangus, and Wagyu cattle, as part of his ranching business throughout Maui. Na‘alae Beef Company carries about 60 head conventionally and has been raising some Wagyu cattle for the past 10 years. Beef and Blooms has about 80 head of certified organic cattle. (Jacintho, WT, 5/29/16, ¶¶ 2-3; Jacintho, Tr. 7/28/16, p. 193, ll. 3-23.)

m. Counsel for Waikapu Properties subsequently entered into discussions with counsels for OHA and Hui/MTF to modify and clarify Waikapu Properties’ water request. Following those negotiations and in light of Waikapu Properties’ abilities to re-allocate field usage because of the return of the ‘Āao-Waikapū fields, it filed a first amendment to SWUPAs 2356/2297N, 3471N, and 3472N as follows:

1. Reduction in the request to 81,794 gpd, from Waikapū Stream, a 96 percent decrease.
2. Change in the types of crops being grown from coffee to organic produce and row crops.

3. Water requested from Waikapū Stream for Kumu Farms' 18 acres for organic row crops will continue only until such time as substitute fields are certified organic, at which time the water allocation for those 18 acres will be reduced to that necessary for drinking water for cattle at 250 gad.
4. Water requested for feed and forage for cattle to be replaced by drinking water only.
5. All farming operations will be relocated to areas makai of the Waihe'e Ditch such that no surface water is needed from Waikapū Stream other than 250 gad for drinking water for cattle.
6. Ho'aloa Farms will be entitled to water and harvest crops that are currently in-ground above Waihe'e Ditch and which utilize water from Waikapū Stream, and will transition to lands below Waihe'e Ditch and off of Waikapū Stream as such crops are harvested.

(Waikapu Properties, LLC's Notice With Regard to SWUPA 2206, 2356, 2297N, and 3472N, September 19, 2016; Waikapu Properties, LLC's First Amendment to SWUPA Nos. 2356, 2297N, 3471N, and 3472N, November 30, 2016.) (Waikapu Properties: FOF 46.)

n. This amendment to the SWUPAs addressed Fields 731 and 733. Field 731 is 86.5 acres currently leased to Makani Olu for cattle. Field 733 is 110.5 acres, of which Kumu Farms leases 18 acres and Beef and Blooms leases 86.5 acres. (Waikapu Properties, LLC's First Amendment to SWUPA Nos. 2356, 2297N, 3471N, and 3472N, November 30, 2016.)

o. At the same time, a first amendment to SWUPA 2205 addressed the fields formerly leased by HC&S for sugar cane and addressed Fields 735, 737 (portion), 747, 749, 751, 753, 757, 761, 763, 765, and 767. (Waikapu Properties, LLC's First Amendment to SWUPA No. 2206,²⁸ November 30, 2016.)

p. The combined amendments resulted in SWUPA 3471N's Parcel 6's 52.98 acres combined and subsumed in fields 731, 733, and 735, and SWUPA 3472N's Parcel 36's 0.72 acres apparently omitted. (First Amendment to SWUPA 2206, Exhibit A, November 30, 2016.)

²⁸ Again, an occasional reminder that HC&S had unintentionally switch SWUPA numbers for 2205 and 2206, and the correct numbers are 2205 for Waikapu Properties' 'Īao-Waikapū fields, and 2206 for HC&S's Waihe'e-Hopoi fields.

q. The resulting modifications requested 100,169 gpd from Waikapū Stream and 3,315,130 gpd from the Waihe‘e Ditch, for a total of 3,415,299 gpd. (Waikapu Properties, LLC’s Notice With Regard to SWUPA 2206, 2356, 2297N, and 3472N, September 19, 2016, Exhibit B; Waikapu Properties, LLC’s First Amendment to SWUPA 2206, Exhibit A, November 30, 2016.) (Waikapu Properties: FOF 47, 55.)

r. The combined modified water request was as follows:

<u>Field</u>	<u>Acres</u>	<u>User</u>	<u>Use</u>	<u>GAD</u>	<u>Total gpd</u>	<u>Source</u>
731	86.5	Makani Olu	Cattle	250	21,625	Waikapū Stream
733	18	Kumu Farms ^{Row}	Crop	2058	37,044	Waikapū Stream
733	92.5	Beef & Blooms	Cattle	250	23,125	Waikapū Stream
735	73.5	Beef & Blooms	Cattle	250	18,375	Waikapū Stream
737*	77.3	Beef & Blooms	Cattle	250	19,325	Waihe‘e Ditch
737*	66.5	Kumu Farms	Row Crop	3000	199,500	Waihe‘e Ditch
747	91.8	Kumu Farms	Row Crop	3000	275,400	Waihe‘e Ditch
749	119	Kumu Farms	Row Crop	3000	357,000	Waihe‘e Ditch
751	154.5	Ho‘aloha Farms	Taro/Row Crop	5400	834,300	Waihe‘e Ditch
753	155.3	Ho‘aloha Farms	Taro/Row Crop	5400	838,620	Waihe‘e Ditch
757	73.4	Ho‘aloha Farms	Taro/Row Crop	5400	396,360	Waihe‘e Ditch
761	40.5	Kumu Farms	Row Crop	3000	121,500	Waihe‘e Ditch
763	51.1	Beef & Blooms	Cattle	250	12,775	Waihe‘e Ditch
765	63.5	Beef & Blooms	Cattle	250	15,875	Waihe‘e Ditch
7671	81.5	Beef & Blooms	Cattle	250	20,375	Waihe‘e Ditch
7672	41.5	Ho‘aloha Farms	Taro/Row Crop	5400	224,100	Waihe‘e Ditch
Totals:	1,286.4				3,415,299	

(100,169 Waikapū Stream
3,315,130 Waihe‘e Ditch)

*portion of field 737;
¹above highway;
²below highway

(First Amendment to SWUPA 2206, Exhibit A, November 30, 2016.) (Waikapu Properties: FOF 55.)

s. Waikapu Properties also stated that metered use over 140 acres over the past four years was 540,000 gpd, or an average of about 3,860 gad, and extrapolating 3,860 gad over 760.5 acres of crops resulted in 2,935,530 gpd. The amount they are asking for, 3,315,130 gpd, is a little higher because there is less rain on the lower ‘Īao-Waikapū fields to which they would be relocating their crop plantings. (First Amendment to SWUPA 2206, Exhibit A, November 30, 2016; Atherton, Tr., 9/20/16, p. 41, l. 4 to p. 42, l. 7.)

t. However, their current use was overestimated. Over the past four years, the largest delivery to Waikapu Properties from WWC was 15.81 million gallons, or 527,000

gpd, in April 2016, and in May 2016, water delivery was down to 11.43 million gallons, or 368,710 gpd. Over 140 acres, these averaged 3,764 gad and 2,634 gad, respectively. (Exh. OHA-49.) (Hui/MTF and OHA: FOF C-102-105.)

u. This request should be modified in the following areas:

1. Drinking water for cattle: 25 gad instead of 250 gad.

a. William Jacintho, owner of Na‘alae Beef Company and Beef and Blooms, leases about 100 acres currently, on which he raises about 50 head of Angus, Brangus, and Wagyu cattle, which is pretty much what the land can support. (Jacintho, WT, 5/29/16, ¶¶ 2-3; Jacintho, Tr. 7/28/16, p. 192, l. 19 to p. 194, l. 3.)

b. “One rule of thumb is cattle drink about a gallon of water per hundred pounds of weight that they have per day. So an average cow, say weighing about 1,000 pounds, mature animal, will drink about at least ten gallons a day. That’s on normal weather. If it’s hotter, they’ll drink, can be even double.” (Jacintho, Tr., 7/28/16, p. 205, ll. 1-7.)

c. “Well, I haven’t made my request yet, but I would like to ask for, you know, probably 15 gallons per head per day.” (Atherton, Tr., 7/29/16, p. 28, ll. 9-25.)

d. Makani Olu grazes about 70 head of cattle on its 86.5 acres. (Atherton, Tr., 7/29/16, p. 62, l. 8 to p. 63, l. 14.)

e. Hui/MTF and OHA concludes that 25 gad, 10 percent of the 250 gad claimed by Waikapu Properties, is still more than double what Beef and Blooms and Makani Olu would need at their current grazing densities, and that “(b)ased on the evidence in the record, 25 gad should be more than sufficient to provide drinking water for cattle grazed on WP’s land above Waihe‘e Ditch.” (Hui/MTF and OHA: FOF C-92, COL 191.)

2. Field 737 - 10.8 acres instead of 77.3 acres for Beef & Blooms. Field 737 is a total of 77.3 acres. 66.5 acres is currently farmed by Kumu Farms and will continue to be farmed by Kumu Farms. (First Amendment to SWUPA 2206, Exhibit B, November 30, 2016.)

3. Field 731:1,750 gpd:

- a. Makani Olu grazes about 70 head of cattle on its 86.5 acres. (Atherton, Tr., 7/29/16, p. 62, l. 8 to p. 63, l. 14.)
 - b. At 25 gallons/head, the daily drinking water is 1,750 gpd.
4. Field 747 should be reduced from 91.8 acres to 71.8 acres. 20 acres were transferred to the County prior to 2013. (Exh. OHA-6, ¶ 1(b).)
 5. Irrigation requirements for row crop: 2,500 gad instead of 3,000 gad. Waikapu Properties states that the irrigation requirements for Kumu Farms’ row crops of 3,000 gad is based on 45% of HDOA allocations for vegetables. Waikapu Properties’ prior request was for 2,058 gad, based on actual use. (First Amendment to SWUPA 2206, Exhibit A, November 30, 2016; Atherton, WT, 8/23/16, ¶ 7.)
 6. Irrigation requirements for taro/row crop: 2,500 gad instead of 5,400 gad.
 - a. Irrigation requirements of 5,400 gad were stated to be based on 45% of HDOA allocations, but its prior request claimed 5,400 gad for taro and 6,700 gad for taro/row crops, based on HDOA. (Pahia, WT, 8/23/16, ¶ 6.)
 - b. 45% of 5,400 would be 2,430, and 45% of 6,700 gad would be 3,015 gad.
 - c. Although no explanation was given, according to HDOA, dryland taro would require less water than row crops. If 3,000 gad is 45% of HDOA allocations for row crops, then HDOA allocation would be about 6,700 gad for row crops. But again, there is no explanation why a mixture of taro and row crops would be the same requirement as for row crops, when taro is allocated less by HDOA.

v. Waikapu Properties’ request should therefore be as follows, after Kumu Farms relocates to below the Waihe’e Ditch, whose water is included in the total for Waihe’e Ditch:

<u>Field</u>	<u>Acres</u>	<u>User</u>	<u>Use</u>	<u>GAD</u>	<u>Total gpd</u>	<u>Source</u>
731	86.5	Makani Olu*	Cattle	25	1,750	Waikapū Stream
733	110.5	Beef & Blooms	Cattle	25	2,763	Waikapū Stream
735	73.5	Beef & Blooms**	Cattle	25	1,838	Waikapū Stream
737***	10.8	Beef & Blooms**	Cattle	25	270	Waihe’e Ditch
763	51.1	Beef & Blooms**	Cattle	25	1,278	Waihe’e Ditch

765	63.5	Beef & Blooms**	Cattle	25	1,588	Waihe'e Ditch
7671	81.5	Beef & Blooms**	Cattle	25	2,038	Waihe'e Ditch
737***	66.5	Kumu Farms	Row Crop	2500	166,250	Waihe'e Ditch
747	71.8	Kumu Farms	Row Crop	2500	179,500	Waihe'e Ditch
749	119	Kumu Farms	Row Crop	2500	297,500	Waihe'e Ditch
751	154.5	Ho'aloaha Farms	Taro/Row Crop	2500	386,250	Waihe'e Ditch
753	155.3	Ho'aloaha Farms	Taro/Row Crop	2500	388,250	Waihe'e Ditch
757	73.4	Ho'aloaha Farms	Taro/Row Crop	2500	183,500	Waihe'e Ditch
761	40.5	Kumu Farms	Row Crop	2500	101,250	Waihe'e Ditch
<u>767²</u>	<u>41.5</u>	<u>Ho'aloaha Farms</u>	<u>Taro/Row Crop</u>	<u>2500</u>	<u>103,750</u>	<u>Waihe'e Ditch</u>
Totals:	1,199.9 acres				1,817,775 gpd	

(270.5 acres: Waikapū Stream)
(929.4 acres: Waihe'e Ditch)

(6,351 gpd: Waikapū Stream)
(1,811,424 gpd: Waihe'e Ditch)

¹ above highway;
² below highway

*70 head on 86.5 acres;
**1 head/2 acres;

w. Alternate sources:

1. Waikapū Properties is developing five (5) wells as part of its long-term plans to develop a portion of its lands as housing for Maui residents:
 - a. Three wells have been identified as suitable for potable use, have undergone testing to determine water quality, and two have been permitted. Two have sustainable pumping capacities of 1.4 mgd and 10 mgd, respectively, and the third well will require further testing, and, based on an increase in chlorides, may be less than 700 gpm.
 - b. The fourth and fifth wells have shown low salinity levels, and testing has been conducted to determine the viability of those wells for domestic use, and if not, for possible non-potable use. The non-potable wells would be used for landscaping and open space—parks—on his projects.
 - c. Availability of ground water for agricultural purposes in the future will depend greatly on whether all or some of the wells will be transferred to the County of Maui or remain a private water system, and development of the infrastructure

to transmit and deliver the water from the wells to the intended recipients.

(Atherton, WT, 5/31/16, ¶¶ 12-15; Atherton, Tr., 7/29/16, p. 18, ll. 12-19, p. 139, ll. 4-11; Exhs. OHA-7, FEIS, at V-108-109 & App. I; OHA-44; OHA-45.) (Waikapu Properties: FOF 97-105.) (Hui/MTF and OHA: FOF C-126.)

2. If and when Waikapu Properties' housing plans are developed, it is anticipated to generate approximately 650,000 gpd of R-1 quality recycled water. (Exh. OHA-7, FEIS at V-113 and App. K.) (Hui/MTF and OHA: FOF C-126.)

x. Appurtenant rights:

1. Waikapū Properties had claimed appurtenant rights for Parcels 3, 6, and 36, and HC&S had not claimed rights for the 'Īao-Waikapū Fields. (SWUPA 2205, p. 1; SWUPA 2356, p. 1; SWUPA 2297N, p. 1; SWUPA 3471N, p. 1; SWUPA 3472N, p. 1.)

2. In the provisional approval process, the Commission had:

a. approved 15 of 16 LCAs for Parcel 3;

b. approved none of 8 LCAs and 5 grants for Parcel 6; and

c. approved three of three LCAs for Parcel 36.

(Provisional Order, Attachment C, Revised Exh. 7, pp. 42-45.)

3. During the contested case hearing and in negotiations with Hui/MTF and OHA, Waikapu Properties stated that it would not be pursuing appurtenant rights in this contested case hearing except to the extent of seeking drinking water for cattle and reserved the right to re-submit at a later date. (Atherton, Tr., 9/20/16, p. 43, ll. 1-8.) (Hui/MTF and OHA: FOF C-50.)

4. Appurtenant rights were requested for portions of Parcel 3's 657.2 acres:

a. LCAs 2361:2, 3528:1, 3528:2, and 2394. The first three had been provisionally approved, but LCA 2394 had not been listed. (Provisional Order, Attachment C, Revised Exh. 7, pp. 42-43.)

- b. LCA 2361: ‘āpana 1 was described as “containing 16-1/2 acres;” and ‘āpana 2 as “containing 4 chains, 49 fathoms, 43 square feet,” with foreign testimony referring to “kalo land” and native testimony referencing 14 patches and a pō‘alima. (Exh. 2356-Waikapu-3 at Exhibit 1.) (Waikapu Properties: FOF 34.)
 - c. LCA 3528:1 was 3.9 acres, and testimony noting it was bounded by Waikapū Stream and contained lo‘i and taro paukū. (Exh. 2356-Waikapu-3 at Exhibit 13.) (Waikapu Properties: FOF 35.)
 - d. LCA 3528:2 was 1.56 acres and was bounded on both sides by a kahawai and ‘auwai and contained taro paukū with a pō‘alima bounding both sections. (Exh. 2356-Waikapu-3 at Exhibit 13.) (Waikapu Properties: FOF 36.)
 - e. LCA 2394: ‘āpana 1 was 1.36 acres, bounded on one side by “auwai,” and was a section of lo‘i; ‘āpana 2 was 0.35 acres, bounded by “Waihee, by creek,” and contained “4 lois.” (Exh. 2356-Waikapu-3 at Exhibit 8.) (Waikapu Properties: FOF 37.)
5. Waikapu Properties requests recognition of appurtenant rights at 150,000 gpd for:
- a. 0.25 acres of LCA 2361:2, or 37,500 gpd;
 - b. 3.9 acres of LCA 3528:1, or 585,000 gpd;
 - c. 1.56 acres of LCA 3528:2, or 234,000 gpd; and
 - d. 1.71 acres of LCA 2394:1-2, or 256,500 gpd.
6. The total appurtenant rights request is for 1,113,000 gpd for 7.42 acres.

428. SWUPAs 2336/2337N—Colin Kailiponi & Alfred Santiago

a. On April 30, 2009, Colin Kailiponi, landowner, and Alfred Santiago, lessee, filed existing and new use SWUPAs for TMKs No. (2) 3-6-005:019 (“Parcel 19”) and No. (2) 3-6-005:024 (“Parcel 24”). (SWUPA 2336; SWUPA 2337N.)

b. Parcel 19 is 3.4 acres, and Parcel 24 is 0.2 acres, for which they requested an estimated 288,000 gpd in existing use for 0.5 acres of lo‘i kalo and 0.2 acres of diversified

agriculture, and an estimated 579,000 gpd in new use for 1 acre of lo‘i kalo and 1 acre of diversified agriculture. (SWUPA 2336, p. 2, table 1, p. 4, table 3; SWUPA 2337N, p. 2, table 1, p. 3, table 2.)

c. The land has been in the Kailiponi ‘ohana since the time of the Māhele. (SWUPA 2336, Attachment 1, p. 2.)

d. They claimed appurtenant rights and were provisionally approved by the Commission. (SWUPA 2336, p. 1; SWUPA 2337N, p. 1; Provisional Order, Exhibits, p. 92, Exh. 7.)

e. Kailiponi and Santiago did not submit written testimony and did not participate in the contested case hearing.

429. SWUPAs 2260/2261N—Ho‘okahi Alves (Miyashiro Trust)

a. On April 23, 2009, the Jinsei Miyashiro Trust filed existing and new use SWUPAs for TMK No. (2) 3-6-006:027 (“Parcel 27”) which Ho‘okahi Alves and his ‘ohana purchased in October 2014, where they now live. (Alves, WT, 1/29/16, ¶ 1.) (Hui/MTF and OHA: FOF B-805.)

b. Parcel 27 is 0.712 acre, for which Alves request appurtenant rights of 213,600 gpd and a permit for 150,600 gpd, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo and Maui County single-family home standard of 600 gpd. (*Id.*, ¶¶ 5, 13, 15-18.) (Hui/MTF and OHA: FOF B-806, B-810, B-811, B-812.)

c. Under SWUPA 2260, the Trust had requested 2,857 gpd for 0.1 acre of diversified agriculture for its ‘ohana, neighbors, and community members. A modified bucket method was used on October 23, 2008, using a 2-gallon bucket, calculating the flow over a 24-hour period as 40,000 gallons per day. Irrigating for half a day once a week, the estimated existing use was 2,857 gpd. (SWUPA 2260, Addendum, p. 2.)

d. Under SWUPA 2261N, the Trust had requested 75,000 gpd for 0.25 acre of lo‘i kalo, using Reppun’s high estimate of 300,000 gad. (SWUPA 2261N, p. 1, p. 3, table 3; Addendum, p. 2.)

e. Alves is currently requesting 150, 600 gpd for 0.5 acre of lo‘i kalo and a garden. (*Id.*, ¶¶ 5, 17.) (Hui/MTF and OHA: FOF B-806, B-811, B-812.)

f. Parcel 27 is comprised of portions of LCA 10481:5, confirmed by RP 3131, LCA 5280:1-3, confirmed by RP 6699, and Government Grant 1678:2:

1. LCA 10481:5 is described as paukūkalō.
2. LCA 5280:1-3 are described as containing lo‘i, including a pō‘alima within.
3. The pō‘alima in LCA 5280:1-3 is part of Government Grant 1678:2.

The Commission had granted provisional recognition for the LCAs. (*Id.*, ¶¶ 6, 11-12; Exh. 2260-Alves-1, -2, 4; Provisional Order, Attachment C, Revised Exh. 7, p. 42.) (Hui/MTF and OHA: FOF B-809.)

g. Based on these documents, Alves claimed appurtenant rights for Parcel 27’s entire acreage of 0.712 acre. (*Id.*, ¶ 14.)

h. Alves does not translate his documents on Government Grant 1678:2, but it appears to consist of multiple pieces, of which the pō‘alima is only a small part. Furthermore, the pō‘alima appears to be only a small part—less than 1/25th—of Parcel 27’s 0.712 acre. (Exh. 2260-Alves-3, -4.) Therefore, it would be reasonable to ascribe appurtenant rights to almost all of the 0.712 acres, or to 0.710 acre.

430. SWUPAs 2217/2218N—John Minamina Brown Trust/Crystal Smythe, Trustee

a. On April 23, 2009, the John Minamina Brown Trust, through its sole trustee Crystal Smythe (formerly Crystal Alboro), filed existing and new use SWUPAs for TMKs No. (2) 3-6-006:025 (“Parcel 25”) and No. (2) 3-6-006:029 (“Parcel 29”). (Smythe, WT, 2/5/16, ¶ 1; Smythe, Tr., 7/19/16, p. 6, ll. 2-6.) (Hui/MTF and OHA: FOF B-813.)

b. Parcel 25 is 0.62 acre and Parcel 29 is 0.63 acre, for a combined total of 1.25 acres, for which Smythe requests recognition of appurtenant rights of 375,000 gpd, based on Reppun’s high estimate of 300,000 gad. (*Id.*, ¶¶ 13-15.) (Hui/MTF and OHA: FOF B-820.)

c. Smythe also had requested: 90,300 gpd for an existing 0.3 acre of lo‘i kalo and 0.1 acre domestic garden, plus 255,000 gpd for an additional 0.85 acre of lo‘i kalo, 0.43 acre on Parcel 25 and 0.42 acre on Parcel 29. The total request was 345,300 gpd. (SWUPA 2217, p. 2, table 1, p. 4, table 3; SWUPA 2218N, p. 1, p.3, table 2.)

d. In her written testimony, Smythe had requested 300,600 gpd for 1 acre of lo‘i kalo and 600 gpd for a 0.1 acre of papayas. At the hearing, she confirmed that she was requesting 0.85 acre in addition to her existing 0.3 acre of lo‘i kalo, for a total of 1.15 acres, and

that she was requesting 600 gpd, not 300 gpd, for her garden. (*Id.*, ¶¶ 5, 13, 20-21; Smythe, Tr., 7/19/16, p. 11, l. 22 to p. 12, l. 12.) (Hui/MTF and OHA: FOF B-813, B-822.)

e. Parcel 25 is comprised of a portion of LCA 2577:1, confirmed by RP 4948, and Parcel 29 is the entirety of LCA 3277, confirmed by RP 3119:

1. LCA 2577:1 contained 11 lo‘i as well as a pō‘alima.
2. LCA 3277 is described as containing lo‘i kalo.

The Commission had granted provisional approval. (*Id.*, ¶¶ 6, 11-12; Exh. 2217-Brown-1, -2, -3; Provisional Order, Attachment C, Revised Exh. 7, p. 42.) (Hui/MTF and OHA: FOF, B-819.)

431. SWUPA 2366N—George & Yoneko Higa

a. On April 23, 2009, George and Yoneko Higa filed a new use SWUPA for TMKs No. (2) 3-6-006:003 (“Parcel 3”), No. (2) 3-6-006:004 (“Parcel 4”), No. (2) 3-6-006:005 (“Parcel 5”), and No. (2) 3-6-006:016 (“Parcel 16”). (Higa, WT, 2/3/16, ¶ 1.) (Hui/MTF and OHA: FOF, B-838.)

b. Parcel 3 is 1.093 acres, Parcel 4 is 0.222 acres, Parcel 5 is 0.16 acre, and Parcel 16 is 0.16 acres. (*Id.*, ¶¶ 10-13; Exh. 2366N-Higa-1.) (Hui/MTF and OHA: FOF, B-844, B-846, B-848, B-850.)

c. The Higa ‘ohana request appurtenant rights for all acres on the four parcels for 416,100 gpd, based on Reppun’s high estimate of 300,000 gad, and a permit for 3,000 gpd for one acre of garden crops. (*Id.*, ¶¶ 4, 19.) (Hui/MTF and OHA: FOF, B-838, B-851.)

d. The Higa ‘ohana are not using stream water because their access to Waikapū Stream has been severely limited by upstream users and alterations to the traditional ‘auwai. Before the ‘auwai mauka of her land was destroyed, Yoneko Higa’s family had always used ‘auwai water for gardening, and as recently as 1989, for kalo. (*Id.*, ¶¶ 19, 24.) (Hui/MTF and OHA: FOF, B-851.)

e. Parcel 3’s 1.093 acres are comprised of:

1. the entirety of LCA 3397:1 & 2, confirmed by RP 4122, consisting of 0.84 acre, with ‘āpana 1 described as a “paukukalo” and ‘āpana 2 as a “pahale.”
2. at least half of LCA 3523:1, confirmed by RP 3141, consisting of 0.229 acre, with ‘āpana 1 described as “a section of lois.”

3. the entirety of LCA 2361:1, confirmed by RP 498, consisting of 0.024 acre, for which water rights were reserved in 1959.

(*Id.*, ¶¶ 2, 6-8; Exh. 2366-Higa-1; SWUPA 2366, Addendum, p. 2.) (Hui/MTF and OHA: FOF, B-840, B-841, B-842, B-843.)

f. Higa claims appurtenant rights to 0.843 acre of Parcel 3, after subtracting 0.25 acre for the pāhale but not the 0.024 acre derived from LCA 2361:1, whose water rights were reserved in 1959, from Parcel 3's 1.093 acres. (*Id.*, ¶¶ 9-10.)

g. Parcel 4's 0.222 acre is comprised of about 90 percent of LCA 3224:3, confirmed by RP 4115, described as a "section of lois." (*Id.*, ¶ 11; Exh. 2366-Higa-5.) (Hui/MTF and OHA: FOF B-845.)

h. Parcel 5's 0.16 acre is comprised of a portion of a government grant, confirmed by RP 1713. The grant does not provide the land use at the time of the grant, but Higa believes that Parcel 5's location between the lo'i kalo lands of LCAs 3523:1 and 3224:3 makes it likely that the grant was also cultivated in lo'i kalo. (*Id.*, ¶ 12, Exh. 2366-Higa-1, -3, -5.) (Hui/MTF and OHA: FOF B-847.)

i. Parcel 16's 0.16 acre is comprised of three government grants, confirmed by RP's 1710:2 (0.06 acre) and 1520/170 (0.10 acre). The grants do not provide the land use at the time of the grant, but Higa believes that they were also cultivated in lo'i kalo, because they are adjacent to the lo'i kalo lands of LCA 3397:1. (*Id.*, ¶ 13, Exh. 2366-Higa-1, -2.) (Hui/MTF and OHA: FOF B-847.)

j. Grant 1710:2 seems to be carved out of a corner of LCA 3397:1 & 2, and Grant 1520/170 is on the adjacent corner. But their sizes, 0.06 acre and 0.10 acre, respectively, could just as well have been for pāhale, especially since LCA 3397:2 was a pāhale. (Exhibit 2366-Higa-1.)

k. The Commission had granted provisional approval for LCAs 3397:1& 2, 3523:1, and 3224:3. (Provisional Order, Attachment C. Revised Exh. 7, pp. 43-44.) (Hui/MTF and OHA: FOF B-842.)

432. SWUPA 2368—Teruo Kamasaki

a. On April 23, 2009, Teruo and Evelyn Kamasaki filed an existing use SWUPA for TMK No. (2) 3-6-007:010 ("Parcel 10"). The Kamasakis mistakenly filed out a "new use" form, but the SWUPA was filed before the April 30, 2009, deadline for existing use

applications. The Kamasakis' daughter, Cynthia McCarthy, testified because her dad passed away since the filing of the SWUPA. (McCarthy, WT, 2/1/16, ¶ 1; McCarthy, Tr., 7/13/16, p. 102, ll. 2-14, p. 105, l. 18 to p. 106, l. 1.) (Hui/MTF and OHA: FOF B-824.)

b. Parcel 10 is 0.71 acre, for which McCarthy requests recognition of appurtenant rights of 213,000 gpd, based on Reppun's high estimate of 300,000 gad, and a permit for 2,010 gpd for 0.67 acre of her yard and garden, based on Maui County's standard for domestic cultivation of 3,000 gad, in which her father used to grow fruits and vegetables until July 2004, when the pipe that used to bring water from the 'auwai to their land was pulled out and destroyed. (*Id.*, ¶¶ 3, 9-12; SWUPA 2368, p. 3, table 2, Attachment, p. 2.) (Hui/MTF and OHA: FOF B-827, B-831, B-832.)

c. In July 2004, during construction to widen and level the plantation road, Wailuku Agribusiness destroyed the culvert and the concrete flume on both sides of the road, destroying the Kamasakis' pipe system in the process. WWC has replaced the Kamasakis' one-inch pipe under the road and installed a four- or six-inch culvert, but the Kamasakis' pipe continues to be vandalized and broken. McCarthy would like to see the pipe reinstalled and would use the water to restart the non-commercial garden. (*Id.*, ¶ 14; Kamasaki, WT, 9/14/07, ¶ 7 (MA06-01); Kamasaki, WT, 11/16/07, ¶¶ 4-5 (MA06-01); Exh. A-58 (MA06-01); Suzuki, Tr., 12/14/07, p. 87, ll. 14-23, p. 155, ll. 9-21 (MA06-01).) (Hui/MTF and OHA: FOF B-832, B-836, B-837.)

d. Parcel 10 is comprised of a portion of LCA 432, confirmed by RP 102. McCarthy states that the LCA describes the existence of numerous lo'i, but in the Commission's Provisional Order, LCA 432 is described as follows: "NT ref. wet & dry patches, 2 mud houses, 1 grass house. NR ref. stream border, numerous taro patches." McCarthy's exhibit does not translate from the Hawaiian, but the native testimony includes "maloo kahi mau loi" and "2 halelepo 1 hale pili." (*Id.*, ¶¶ 7-8; Exh. 2368-Kamasaki-1, -2; Provisional Order, Attachment C, Revised Exh. 7, p. 44.)

e. One-half of Parcel 10's 0.71 acre, or 0.355 acre, is entitled to appurtenant rights. The existence of dry patches and three houses, without further specification and without information on the size of LCA 432, leads to a 50:50 split between lo'i kalo and other uses for LCA 432 at the time of the Māhele, *supra*, FOF 168.

433. SWUPA 2155—Clayton Suzuki

a. On April 20, 2009, Clayton Suzuki and his wife, Linda Kadosaki, filed an existing use SWUPA for TMKs No. (2) 3-6-006:009 (“Parcel 9”), No. (2) 3-6-006: 013 (“Parcel 13”) and No. (2) 3-6-006:022 (“Parcel 22”). (SWUPA 2155.)

b. Parcel 9 is 0.12 acre, Parcel 13 is 4.253 acres, and Parcel 22 is 0.06 acre. Suzuki owns a ten percent undivided interest in Parcel 22.

c. Suzuki’s existing use request was for 17,379 gpd, estimated between May 2007 and December 2007, and metered from January-April 2008, after a meter was installed in December 2007. Irrigation was over 4.34 acres: bitter melon on Parcel 9’s 0.12 acre; pasture on 0.02 acre of Parcel 22’s 0.06 acre; and dryland taro, bitter melon and fruit trees on 1.2 acres, landscaping on 1.0 acre, and pasture on 2.0 acres (total of 4.2 acres) of Parcel 13’s 4.253 acres, with the remaining 0.053 acres with a house and swimming pool. (SWUPA 2155, p. 2, table 1, p. 4, table 3; Suzuki, Tr., 7/18/16, p. 148, ll. 15-24.) (Hui/MTF and OHA: FOF B-879.)

d. The Suzukis moved to the property in 2005, and in 2007-2008, the acreage was not fully planted. Over the past five years, the average use was 21,371 gpd, which is the requested use for the application. The Suzukis have a county water meter for household use. (Suzuki, Tr., 7/18/16, p. 140, ll. 2-4, 9-11; Suzuki, Opening Brief, 2/4/16, p. 7.)

e. The Suzukis purchased the property from Wailuku Agriculture in 2003 with reservations of water rights. (Suzuki, Tr., 7/18/16, p. 140, ll. 1-2.) (Hui/MTF and OHA: FOF B-878.)

f. The Commission granted provisional approval for 11 of 12 LCAs: one for Parcel 9, nine of ten for Parcel 13, and one for Parcel 22, which is shared with Parcel 13. (Exh. 2155-Suzuki, Exh. 1; Provisional Order, Attachment C, Revised Exh. 7, pp. 41-42).

g. Suzuki suggested that his appurtenant rights could be quantified by reference to historical lo‘i size, using a figure of 40 by 40 feet, or 1,600 square feet, and counting the number of lo‘i in the records for the LCAs, arriving at 183 lo‘i. However, he did not calculate what the acreage would be. (Suzuki, Opening Brief, Direct Testimony, 2/2/16, pp. 3-6, 9; 2155-Suzuki, Exhibit 2.)

h. After subtracting for government grants and the LCA that had no documentation of water use at the time of the Māhele, Suzuki claimed appurtenant rights for 3.889 acres, from the following LCAs:

1. Parcel 9:0.12 acre: all of LCA 3526:1, described as “pauku loi.”
2. Parcel 22:0.06 acre: half of LCA 3107:6, described as “3 loi.”
3. Parcel 13:
 - i. 0.06 acre: half of LCA 3107:6, described as “3 loi.”
 - ii. 0.120 acre: all of LCA 3224:2, described as “taro pauku.”
 - iii. 0.038 acre: 4.61% of LCA 3224:3, described as “taro pauku.”
 - iv. 0.430 acre: all of LCA 3224:4, described as “1 loi.”
 - v. 0.320 acre: all of LCA 3224:5, described as “house lot.”
 - vi. 2.460 acres: all of LCA 3337:1-3, described as “taro pauku,” “taro loi,” and “taro pauku,” respectively.
 - vii. 0.071 acre: 23.67% of LCA 3523:1, described as “taro pauku.”
 - viii. 0.150 acre: all of LCA 3523:3, described as “3 taro lois.”
 - ix. 0.060 acre: all of LCA 5324:4, described as “2 loi.”

(2155-Suzuki, Exhibit 2; Exhibit 2155-Suzuki.)

i. Subtracting 0.320 acre for the house lot described on LCA 3224:5, the total acreage with lo‘i kalo is 3.569 acres (3.889 acres – 0.320 acre).

434. SWUPA 2156—Nadao Makimoto

a. On April 20, 2009, Nadao Makimoto filed an existing use SWUPA for TMK No. (2) 3-6-006:021 (“Parcel 21”). Clayton Suzuki testified for Makimoto at the hearing. (SWUPA 2156; Suzuki, Tr., 7/18/16, p. 150, l. 16 to p. 151, l. 9.) (Hui/MTF and OHA: FOF B-881.)

b. Parcel 21 is 0.585 acres, which Makimoto purchased from Sunichi Arakawa in 1964. (Suzuki, Tr., 7/18/16, p. 150, ll. 20-25.)

c. Makimoto requested a permit for 10,400 gpd for the 0.585 acres—0.30 acre of vegetable truck crops, 0.10 acre of fruit trees, and 0.185 acre of landscaping. (SWUPA 2156, p. 2, table 1, p. 4, table 3; Suzuki, Tr. 7/18/16, p. 151, ll. 1-7.) (Hui/MTF and OHA: FOF B-881.)

d. Makimoto's existing use of 10,400 gpd was measured by a meter installed in August 2008, and from September 2008 to February 2009, the average daily use was 10,400 gpd, which he used to estimate his existing use from May 2007 to April 2008. (SWUPA 2156, p. 2, table 1.)

e. Makimoto also claimed appurtenant rights for Parcel 21's 0.585 acres, which contains the entirety of LCA 491:4's 0.115 acre and LCA 3522's 0.470 acres. The Commission had granted provisional approval. (Exh. 2156-Makimoto, pp. 1-2; Provisional Order, Attachment C, Revised Exh. 7, p. 42.)

f. LCA 491:4 was described as containing 8 lo'i, kula wauke, and 3 sweet potato patches. (Exh. 2156-Makimoto, at page labeled as "Page 674.")

g. LCA 3522 was described as containing 7 parcels:

1. parcel 1 with taro paukū and a kula.
2. parcel 2 with 4 taro lo'i.
3. parcel 3 with 4 taro lo'i.
4. parcel 4 with 5 taro lo'i.
5. parcel 5 with 9 taro lo'i.
6. parcel 6 with 1 taro lo'i.
7. parcel 7 with potato mala.

(Exh. 2156-Makimoto, at page labeled as "Page 680.")

h. While Makimoto did not provide calculations on the amount of appurtenant rights he requested, he based his request on the number of lo'i in the LCAs which comprise Parcel 21: multiplying each by 1,600 square feet (a 40 ft. x 40 ft. lo'i), then by a water duty of 150,000 gad (the duty the Commission had adopted in the Nā Wai 'Ehā contested case—CCH-MA06-01 D&O). (Makimoto, WT, 2/2/16, pp. 8-9.)

i. Using Kame'eleihiwa's guiding principle #3, *supra*, FOF 168, fifty percent of LCA 491:4's 0.115 acre would be attributable to lo'i kalo, or 0.058 acre, as well as fifty percent of LCA 3522's 0.470 acre, or 0.235 acre, for a total of 0.293 acre of Parcel 21's 0.585 acre.

ii. Waikapū Stream

435. SWUPA 2163—David Niehaus

a. On April 6, 2009, David Niehaus filed an existing use SWUPA for TMK No. (2) 3-5-002:007, a 163-acre property for which he requested 48,000 gpd for 0.275 acre of taro and reforestation of 8 acres of native trees, later referred to in his Opening Brief as “approximately 1 acre of taro and 8 acres of other food crops (such as sweet potato) and native Hawaiian plants.” (SWUPA 2163, p. 2, table 1, p. 4, table 3, p. 5, table 4; Niehaus, Opening Brief, 2/5/16, p. 1.)

b. Niehaus claimed appurtenant rights but did not provide documents during the provisional approval process, with the Commission noting that Wailuku Agribusiness had reserved all water and water rights. Niehaus purchased his property from Wailuku Agribusiness on February 21, 2002, with a reservation of all water rights, but Niehaus claimed that Wailuku Agribusiness never transferred to WWC any rights of the property that Wailuku Agribusiness purported to reserve. (Exh. 2163-Niehaus-1; Provisional Order, Attachment C, Revised Exh. 7, pp. 38-39.)

c. On July 31, 2015, Niehaus submitted documents in support of his appurtenant rights claim. (Exh. 2163-Niehaus-2.)

d. While Niehaus filed an Opening Brief, he did not submit written testimony and did not participate in the contested case hearing.

iii. North Waikapū ‘Auwai

436. SWUPA 2276—Ione Shimizu

a. On April 23, 2009, Ione Shimizu filed an existing use SWUPA for TMK No. (2) 3-5-012:031 (“Parcel 31”), for which she requested a permit for an estimated 11,052 gpd: 9,600 gpd for 0.032 acre of lo‘i kalo and 1,452 gpd for 0.484 acre for a non-commercial garden, both of which she estimated using Reppun’s high estimate of 300,000 gad and Maui County diversified agriculture standard of 3,000 gad. (Shimizu, WT, 2/3/16, ¶¶ 11, 13; SWUPA 2276, Attachment A, p.1, p. 2; table 1; p. 4, table 3.) (Hui/MTF and OHA: FOF B-686.)

b. Parcel 31 is 0.53 acre, with 0.484 acre in a domestic garden and 0.032 acre in lo‘i kalo. (*Id.*, ¶¶ 9, 12-13.) (Hui/MTF and OHA: FOF B-690.)

c. Shimizu had not claimed appurtenant rights in her SWUPA nor did she participate in the provisional approval process. However, in her written testimony of 2/3/16,

Shimizu claimed appurtenant rights, based on documents that showed that Parcel 31 is comprised of a portion of LCA 205, confirmed by RP 7660, which is described as “kalo patches of this land” and “coffee ground.” (SWUPA 2276, p. 1; Provisional Order, Attachment C, Revised Table 7, p. 40; *Id.*, ¶ 6; Exh. 22760-Shimizu-1.) (Hui/MTF and OHA: FOF B-687, B-688, B-689.)

d. Shimizu states that it is unclear where the “kalo patches” and coffee ground” were located but believes that the kalo patches were on her portion of LCA 205, because Parcel 31 contains remnants of an extensive lo‘i complex with stone terracing (at least ten distinct lo‘i in various sizes) and an ‘auwai running through the south side of the parcel. (*Id.*, ¶¶ 6-8; Exh. 22760-Shimizu-1.) (Hui/MTF and OHA: FOF B-687, B-688.)

e. Shimizu therefore believes that Parcel 31’s entire 0.53 acre has appurtenant rights. (*Id.*, ¶ 9.)

f. However, the drawn map for LCA 205 depicts a clear demarcation between “Coffee Ground” and the rest of the LCA, with approximately one-eighth (1/8) as coffee grounds. (Exh. 2276-Shimizu-1-p. 3.)

g. Therefore, about seven-eighths (7/8), or 0.46 acre of Parcel 31’s 0.53 acre, were in kalo patches at the time of the Māhele.

437. SWUPA 2268—Katherine Riyu

a. On April 23, 2009, Katherine Ryu filed existing use SWUPA 2268 for TMK No. (2) 3-5-012:028 (“Parcel 28”). Pamela Dickson and her son, Dustin Vegas, who care for Riyu’s garden and cultivate lo‘i kalo on part of the land, testified on Riyu’s behalf. (Dickson, WT, 1/28/16, ¶ 1. (Hui/MTF and OHA: FOF B-692.)

b. The deed to Parcel 28 contains a reservation of appurtenant rights when Wailuku Sugar Company sold the parcel to Katherine Riyu’s husband, but no information on the date of sale was introduced into evidence. (*Id.*, ¶¶ 1-2; SWUPA 2268, Supplement, p. 2.) (Hui/MTF and OHA: FOF B-696.)

c. The Commission had granted provisional approval of appurtenant rights, based on LCA 434. (Provisional Order, Attachment C, Revised Exh. 7, p. 40.)

d. Parcel 28 is 0.61 acre and part of LCA 434:1, confirmed by RP 495, which was described as containing 41 lo‘i, and with the map accompanying the LCA showing it surrounded by a lo‘i pō‘alima and lo‘i pa‘ahao. (*Id.*, ¶¶ 10-11, 14.)

e. Riyu requests recognition of appurtenant rights for 183,000 gpd, based on Reppun’s high estimate of 300,000 gad for lo’i kalo applied to 0.61 acre. (*Id.*, ¶ 14.) (Hui/MTF and OHA: FOF B-693.)

f. Vegas and Dickson irrigate a garden and lawn and 11 lo’i kalo on about half, or 0.305 acre. They believe Maui County’s single-family home’s 600 gpd is sufficient for the garden, and request 91,500 gpd for the lo’i (0.305 acre x 300,000 gad) for a total permit request of 92,100 gpd. (*Id.*, ¶¶ 5, 15-17.) (Hui/MTF and OHA: FOF B-693, B-697, B-698.)

g. In the original SWUPA, Riyu had requested 1,230 gpd on 0.41 acre of Parcel 28’s 0.61 acres, using Maui County’s diversified agriculture standard of 3,000 gad. (SWUPA 2268, p. 2, table 1; p. 4, table 3; Supplement, p. 1.)

h. Dickson and Vega have replaced 0.305 acre with lo’i kalo nearly two years ago. (Dickson, Tr., 7/18/16, p. 10, l. 18 to p. 12, l. 2.)

i. No new use SWUPA has been filed.

438. SWUPA 2338—Judith Yamanoue and Melvin Riyu

a. On April 30, 2009, Melvin Riyu and Judith Yamanoue filed an existing use SWUPA for TMKs No. (2) 3-5-012:027 (“Parcel 27”) and No. (2) 3-5-012:041 (“Parcel 41”), on which Pamela Dickson and her son, Dustin Vega live. Dickson testified on Yamanoue’s behalf. (Dickson, WT, 1/28/16, ¶ 1; Dickson, Tr., 7/18/16, p. 6, ll. 6-8.) (Hui/MTF and OHA: FOF B-699.)

b. Parcel 27 is 0.71 acre and Parcel 41 is 0.29 acre, for a total of 1.0 acre. (*Id.*, ¶ 15.) (Hui/MTF and OHA: FOF B-705.)

c. Riyu and Yamanoue did not claim appurtenant rights in their SWUPAs and did not participate in the provisional process. However, Dickson’s January 18, 2016 written testimony and supporting documents claimed appurtenant rights for both parcels, which were comprised of portions of LCA 434:1, confirmed by RP 495; LCA 2199, confirmed by RP 3129; Government Grant 1673:3 to John Richardson; and a pō’alima. LCA 434:1 was described as containing 41 lo’i kalo; LCA 2199 was described as kalo land with one pō’alima; Government Grant 1673:3 was described as containing three taro patches. (SWUPA 2338, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 41; *Id.*, ¶¶ 5, 12-14; Exh. 2338 Riyu-1-p.3; -2-p.4; -3-p.3.) (Hui/MTF and OHA: FOF B-704.)

d. The overlay of parcels 27 and 41 over the two LCAs and the Grant show them to apparently be entirely in LCA 434:1, Grant 1673:3, and the pō'alima. (Exhs. 2338-Riyu-4, p. 1, -5, p. 1.)

e. Dickson and Vega requested appurtenant rights to both parcels for a total of 1.0 acre, or 300,000 gpd, using Reppun's high estimate of 300,000 gad for lo'i kalo. (*Id.*, ¶¶ 17-18.) (Hui/MTF and OHA: FOF B-705.)

f. The existing use SWUPA stated that the existing use in 2008 was 1,920 gpd for a garden on 0.64 acre of Parcel 27's 0.71 acres, using Maui County diversified agriculture standard of 3,000 gad. (SWUPA 2338, p. 2, table 1; p. 4, table 3; Supplement, p. 2.)

- g. Dickson's and Vegas's permit request now consists of the following:
1. irrigation of a non-commercial garden and lawn, for which they request 600 gpd, based on Maui County's single-home standard of 600 gpd.
 2. cultivation of 11 lo'i kalo on 0.5 acre, for which they request 150,000 gpd (0.5 acre x Reppun's high estimate of 300,000 gad).

(*Id.*, ¶¶ 19-21.)

h. Dickson stated that the lo'i kalo has been in place for two or three years, replacing 0.5 acre of the original 0.64 acre garden. (Dickson, Tr., 7/18/16, p. 7, l. 21 to p. 9, l. 15.)

- i. A new use permit has not been filed.

439. SWUPA 2277—Warren Soong

a. On April 23, 2009, Warren Soong filed an existing use SWUPA for TMK No. (2) 3-5-012:026, which was subsequently subdivided into two parcels: 1) TMK No. (2) 3-5-012:047 ("Parcel 47"), which Soong still owns and on which he lives; and 2) TMK No. (2) 3-5-012:026 ("Parcel 26"), which was sold to the Pellegrino 'ohana. Parcel 26 is being addressed with the Pellegrinos's applications, SWUPAs 2332 and 2333N. (Soong, WT, 1/30/16, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-708.)

b. Parcel 47 is 0.85 acre, for which Soong requests recognition of appurtenant rights of 255,000 gpd, based on Reppun's high estimate of 300,000 gad for lo'i kalo, and a permit for 600 gpd for his garden and lawn, based on the Maui County single-family home standard of 600 gpd. (*Id.*, ¶¶ 4, 12-14.) (Hui/MTF and OHA: FOF B-711, B-713.)

c. Parcel 47 is comprised of a portion of LCA 2199, confirmed by RP 3129, and described as kalo land with a pō‘alima within it. (*Id.*, ¶¶ 5, 10; Exh. 2277-Soong-1, -2.) (Hui/MTF and OHA: FOF B-710.)

d. The Commission had granted provisional approval of appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 40.) (Hui/MTF and OHA: FOF B-710.)

440. SWUPA 2311—Theodore & Zelig Harders

a. On April 23, 2009, the Harders filed an existing use SWUPA for TMK No. (2) 3-5-012:039 (“Parcel 39”), on which the Harders’ ‘ohana has lived on for generations. (Harders (SWUPA 2311), WT, 1/26/16, ¶ 1.) (Hui/MTF and OHA: FOF B-763.)

b. Parcel 39 is 0.403 acres and consists of portions of three kuleana awards:

1. LCA 3296, confirmed by RP 3147, described by Harder as ‘āpana 1 being a section of kalo land. But LCA 3296 consisted of two ‘āpana, with ‘āpana 1 described as “a section of kalo,” and ‘āpana 2 described as “Potato ground.” (*Id.*, ¶ 14; Exh. 2240-T&Z-2-p. 3.)
2. LCA 6041:3, confirmed by RP 2813, described as containing two lo‘i kalo.
3. LCA 460:1, confirmed by RP 2165, referred to by Harders as being described as “numerous taro patches,” but actually described as “numerous kalo patches and a kula.”

(*Id.*, ¶¶ 5, 9, 11-14; Exh. 2311-Harders-1-p. 6; -2; -3-p. 6; -4-p. 1.) (Hui/MTF and OHA: FOF B-767, B-768.)

c. The great majority of Parcel 39, about 80 percent, is comprised of LCA 3296, with a small portion, about 10 percent, from LCA 6041:3, and an even smaller portion from LCA 460:1, with the latter comprising less than 5-10 percent of Parcel 39, or about 0.02 to 0.04 acres. (Exh. 2311-Harders-4-p. 1.)

d. LCA 460:1 was 7.41 acres, of which Parcel 28 of SWUPAs 2240/3467N now comprises 3.71 acres, and Parcel 1 of SWUPA 2230 now comprises 1.978 acres, for a total of 5.69 acres, or about 77 percent of LCA 460:1. (Harders (SWUPA 2240/3467N), WT, 1/26/16, ¶¶ 5, 11, 17; Exh. 2240-T&Z-1, -6; Dodd (Federcell), WT, 2/3/16, ¶¶ 5, 12; Exh. 2230-Federcell-2.)

e. Ancient lo‘i are still prevalent on the 77 percent of LCA 460:1 that now comprise Parcels 28’s and 1’s, and they are adjacent to Waikapū Stream and a traditional ‘auwai.

(Harders (SWUPA 2240/3467N), 1/26/16, ¶ 13; Dodd (Federcell), WT, 2/3/16, ¶ 11; Exh. 2240-Harders-6 & 2240-T&Z-7; Exh. 2230-Federcell-4.)

f. The Harders had concluded that all of the three LCAs had been in lo‘i kalo and requested 120,900 gpd in appurtenant rights for Parcel 39, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo applied to Parcel 39’s entire 0.403 acres. (Harders (SWUPA 2311), WT, 1/26/16, ¶ 4.) (Hui/MTF and OHA: FOF B-764.)

g. However, LCA 3296 was lo‘i kalo and potato ground, so only half had appurtenant rights. (Exh. 2311-Harders-4-p. 1.) About 80 percent of Parcel 39’s 0.403 acre is comprised of LCA 3296, or 0.32 acre, of which half, or 0.16 acre, would have appurtenant rights.

h. Moreover, a small part of LCA 460:1 was in kula, described as “numerous kalo patches and a kula.” Observable ancient lo‘i are present on at least 77 percent of what was LCA 460:1, so a reasonable estimate is that 80 percent was in lo‘i kalo at the time of the Māhele. LCA 460:1 comprises only 0.02 to 0.04 (average of 0.03 acre) acre of Parcel 39’s 0.403 acres, and 80 percent, or 0.02 acre would have been in lo‘i kalo.

i. Thus, of Parcel 39’s 0.403 acre, 0.233 acre (0.402 acre – (0.16 + 0.01 acre)) would have appurtenant rights. The Commission had granted provisional recognition of appurtenant rights. (Provisional Order, Attachment C., Revised Exh. 7, p. 40.)

j. The Harders also requested a permit for 600 gpd for their garden and lawn, based on Maui County’s single-family home standard of 600 gpd. (*Id.*, ¶¶ 4, 18.) (Hui/MTF and OHA: FOF B-769.)

441. SWUPAs 2240/3467N—Theodore & Zelig Harders Family Limited Partnership

a. On April 23, 2009, Theodore & Zelig Harders Family Limited Partnership (“T&Z Harders”) filed an existing use SWUPAs for TMK No. (2) 3-5-004:028 (“Parcel 28”), and nearly three years later, on February 6, 2012, a new use SWUPA for the same parcel. (Harders (SWUPAs 2240 & 3467N), WT, 1/26/16, ¶ 1.) (Hui/MTF and OHA: FOF B-748.)

b. Parcel 28 is 11.247 acres and is comprised of:

1. Approximately one-half of LCA 460.1, confirmed by RP 2165.
2. The entirety of LCA 8808:1, 2, & 4, confirmed by RP 2164;
3. Approximately one-third of LCA 3296, confirmed by RP 3147.
4. Approximately one-half of LCA 6041:3, confirmed by RP 2813.

5. Part of Government Grant 3042 to Adam Pupuhi.

(*Id.*, ¶¶ 5, 11; Exh. 2240-T&Z-6 (map).) (Hui/MTF and OHA: FOF B-753.)

c. The Commission granted provisional recognition of appurtenant rights, with the comment that rights had been assigned to Wailuku Sugar, but Nicholas Harders stated that this property has been in their ‘ohana for generations, and of their five properties, three have deed restrictions from 1967, but two, including Parcel 28, do not. The Harders ‘ohana has submitted five SWUPAs. They have lived on some of these parcels for generations and were able to buy the other parcels, which have reservation of water rights, assigned by Edmund Rogers to Wailuku Sugar in 1967. The parcels under SWUPAs 2240 and 2311 are the ones without reservations. (Provisional Order, Attachment C, Revised Exh. 7, pp. 39-40; Harders, Tr., 7/18/16, p. 59, l. 10 to p. 60, l. 21; *Id.*, ¶ 2; SWUPA 2238, Attachment, p. 1.)

d. For LCA 8808, ‘āpana 1 and 2 were each described as a section of lo‘i, and ‘āpana 4 was described as 4 kula. But the land consisted of four pieces, with ‘āpana 3 described as 6 lo‘i. (*Id.*, ¶ 16; Exh. 2240-T&Z-4-p.5.) Therefore, about three fourths of LCA 8808 was in kalo lo‘i.

e. For LCA 3296, Harders state that ‘āpana 1 is described as a piece of kalo land, but LCA 3296 consisted of two ‘āpana, with ‘āpana 1 described as “a section of kalo,” and ‘āpana 2 described as “Potato ground.” (*Id.*, ¶ 14; Exh. 2240-T&Z-2-p. 3.) Therefore, about half of LCA 3296 was in kalo lo‘i.

f. LCA 6041:3 was described as having two lo‘i kalo. (*Id.*, ¶ 15; Exh. 2240-T&Z-3-p. 6.) Therefore, all of LCA 6041:3 was in kalo lo‘i.

g. For LCA 460:1, confirmed by RP 2165, referred to by Harders as being described as “numerous taro patches,” was actually described as “numerous kalo patches and a kula.” LCA 460:1 was 7.41 acres, of which Parcel 28 now comprises 3.71 acres, and Parcel 1 of SWUPA 2230 now comprises 1.978 acres, for a total of 5.69 acres, or about 77 percent of LCA 460:1. Ancient lo‘i are still prevalent on the 77 percent of LCA 460:1 that now comprise Parcels 28 and 1, and they are adjacent to Waikapū Stream and a traditional ‘auwai. (Harders (SWUPA 2240/3467N), WT, 1/26/16, ¶¶ 5, 11, 13, 17; Exh. 2240-T&Z-1, -6; Dodd (Federcell), WT, 2/3/16, ¶¶ 5, 11-12; Exh. 2230-Federcell-2, -4; Harders (SWUPAs 2240 & 3467N), WT, 1/26/16, ¶ 14; Exh. 2240-Harders-6 and 2240-T&Z-7; Exh. 2311-Harders-4-p. 1.) Therefore, about 80 percent of LCA 460:1 was in lo‘i kalo.

h. For Government Grant 3042, Harders states that it does not indicate what was cultivated on this portion of Parcel 28, but visible lo‘i kalo terracing across the land indicates this portion was historically cultivated in kalo. However, the map of Parcel 28 overlaid on the LCAs and Government Grant show that Grant 3042 covered a vast area and that the portion now included in Parcel is an extremely small part. (Exh. 2240-Harders-6-p. 1.) Therefore, an insignificant amount of Government Grant 3042 can be attributed to lo‘i kalo.

i. Thus, for Parcel 28’s 11.247 acres, approximately 7.57 acres have appurtenant rights:

1. LCA 460:1:80 percent of the 3.71 acres now in Parcel 28, or 2.97 acres.
2. LCA 8808:1, 2, & 4:75 percent of the entirety, or 5.5 acres, which falls within Parcel 28, or 4.13 acres. (Exhs. 2240-T&Z-4 and 2240-Harders-6.) (Hui/MTF and OHA: FOF B-758.)
3. The remaining LCAs and Government Grant total 2.04 acres (11.247 acres - 9.21 acres). The Government Grant is about 60 percent, or 1.22 acre; LCA 3296 about 30 percent, or 0.61 acre; and LCA 6041:3 about 10 percent, or 0.20 acres. (Exh. 2240-Harders-6-p.1.) (Hui/MTF and OHA: FOF B-759.)
 - a. Government Grant: insignificant appurtenant rights.
 - b. LCA 3296:0.31 acres (50 percent of 0.61 acres).
 - c. LCA 6041:30.16 acres (80 percent of 0.20 acres).

j. In contrast to the 7.57 acres of Parcel 28 that has appurtenant rights, T&Z Harders requested recognition of appurtenant rights of 3,374,100 gpd, based on Parcel 28’s entire 11.247 acres and Reppun’s high estimate of 300,000 gad for lo‘i kalo. (*Id.*, ¶¶ 4, 19-20.) (Hui/MTF and OHA: FOF B-749.)

k. T&Z Harders also requests a permit for current and future uses of 1,507,500 gpd:

1. 7,500 gpd for 3 acres of a large non-commercial garden, part of which had previously been a plant nursery, estimated by applying Waiāhole’s diversified agriculture irrigation rate of 2,500 gad. The 3-acre non-commercial garden replaces part of the plant nursery and is estimated to use less—7,500 gpd—than the original estimated existing use of 20,680 gpd.

2. 1,500,000 gpd for 5 acres of lo‘i kalo, using Reppun’s high estimate of 300,000 gad. One acre had been the original request of the February 6, 2012 new use SWUPA, and the request is now expanded to add 4 acres.

(*Id.*, ¶¶ 4, 21-22; SWUPA 2240, p. 2, table 1; p. 4, table 3; SWUPA 3467N, p. 2, table 1; p. 4, table 3.) (Hui/MTF and OHA: FOF B-749, B761, B-762.)

442. SWUPAs 2332/2333N—Hōkūao & Alana Pellegrino

a. On April 30, 2009, Victor and Walette Pellegrino filed existing and new use SWUPAs for TMKs No. (2) 3-5-012:020 (“Parcel 20”) and No. (2) 3-5-012:023 (“Parcel 23”). The Pellegrino ‘ohana own and live on Parcel 20, and their son and his wife, Hōkūao and Alana Pellegrino, own and live on Parcel 23. Subsequently, Victor and Walette purchased TMK No. (2) 3-5-012:026 (“Parcel 26”) from Warren Soong, part of Soong’s original application under SWUPA 2277. Hōkūao Pellegrino testified on behalf of all. (Pellegrino, WT, 2/1/16, ¶¶ 1-4.) (Hui/MTF and OHA: FOF B-714, B-715.)

b. Parcel 20 is 0.175 acre; Parcel 23 is 2.134 acre; and Parcel 26 is 0.671 acre. (*Id.*, ¶ 20.)

c. The deed to Parcel 20 contains a reservation of appurtenant rights. Edmund Rogers assigned the water rights to Wailuku Sugar Company in 1967. (*Id.*, ¶ 9 n.1; SWUPA 2239 (T & Z Harders), Attachment, p. 1.) (Hui/MTF and OHA: FOF B-719.)

d. Parcel 20 is comprised of LCA 8808:3, confirmed by RP 2164, and described as containing 6 lo‘i. (*Id.*, ¶¶ 10-11.)

e. Parcel 23 is comprised of LCA 3340:1, confirmed by RP 3115, and LCA 3110:1, confirmed by RP 3152. LCA 3340:1 is described as “kuleana taro patches.” LCA 3110:1 is described as a section of lo‘i that contains a pō‘alima and also described as 40 taro patches and a pō‘alima. Additionally, Parcel 23 has remnants of an extensive lo‘i complex with stone terracing, at least 12 lo‘i ranging in size from 300 square feet to 6,000 square feet, and adjacent to Waikapū Stream. (*Id.*, ¶¶ 13-15.) (Hui/MTF and OHA: FOF B-721, B-722.)

f. Parcel 26 is comprised of a portion of LCA 2199, confirmed by RP 3129, described as kalo land with a pō‘alima. Like Parcel 23, Parcel 26 has remnants of an extensive lo‘i system, with a number of intact lo‘i throughout the parcel. (*Id.*, ¶ 16; Exhs. 2332-Pellegrino-4; 2277-Soong-2.) (Hui/MTF and OHA: FOF B-722, B-723.)

g. The Commission provisionally approved appurtenant rights for the LCAs associated with all three parcels, but noted the reservation on Parcel 20. (Provisional Order, Attachment C, Revised Exh. 7, p. 40.) (Hui/MTF and OHA: FOF B-724.)

h. The Pellegrinos request appurtenant rights of 640,200 gpd for Parcel 23 and 201,300 gpd for Parcel 26, for a total of 841,500 gpd, based on Reppun's high estimate of 300,000 gad for lo'i kalo. (*Id.*, ¶¶ 8, 19-20.) (Hui/MTF and OHA: FOF B-725.)

i. If the deed to Parcel 20 survives the reservation of appurtenant rights, they request an additional 52,500 gpd in appurtenant rights. (*Id.*, ¶¶ 8, 20.)

j. They also request permits for existing uses of 62,400 gpd on Parcels 20 and 23, and new uses of 187,800 gpd on Parcel 26 as follows:

1. Parcel 20:600 pgd for a 0.09-acre home garden, using Maui County's single-family home standard of 600 gpd.
2. Parcel 23:1,800 gpd for 0.6 acre of diversified agriculture, using 3,000 gad; and 60,000 gpd for 0.2 acre of lo'i kalo, using Reppun's high estimate of 300,000 gad.
3. Parcel 26:186,300 gpd for 0.621 acre of lo'i kalo, using Reppun's high estimate of 300,000 gad, and 1,500 gpd for a 0.5-acre garden, for a total request of 187,800 gpd. However, Parcel 26 is 0.671 acre, so the garden would be 0.05 acre, not 0.5 acre, or 150 gpd, for a revised total of 186,450 gpd in proposed new uses.

(*Id.*, ¶¶ 21-23.) (Hui/MTF and OHA: FOF B-726, B-727, B-728.)

443. SWUPA 2239—Theodore & Zelig Harders

a. On April 23, 2009, the Harders filed an existing use SWUPA for TMK No. (2) 3-5-0012:016 ("Parcel 16"). (Harders, WT, 1/26/16, ¶ 1.) (Hui/MTF and OHA: FOF B-742.)

b. Parcel 16 is 0.32 acre and has a reservation of water rights, which Edmund Rogers assigned to Wailuku Sugar in 1967. (SWUPA 2239, p. 4, table 3; Attachment, p. 1.) (Hui/MTF and OHA: FOF B-746.)

c. The Commission had granted provisional approval but noted the reservation by Edmund Rogers. (Provisional Order, Attachment C, Revised Exh. 7, p. 40.)

d. If the deed survives the reservation, the Harders request recognition of appurtenant rights for 96,420 gpd, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo, applied to 0.3214 acre. (*Id.*, ¶¶ 14-15.) (Hui/MTF and OHA: FOF B-743.)

e. The Harders also request a permit for 600 gpd for their garden and lawn. (*Id.*, ¶¶ 16-17.) (Hui/MTF and OHA: FOF B-743.)

444. SWUPA 2237—Karl & Lee Ann Harders

a. On April 23, 2009, Karl and Lee Ann Harders filed an existing use SWUPA for TMK No. (2) 3-5-012:013 (“Parcel 13”). (SWUPA 2237.)

b. Parcel 13 is 0.24 acre and has a reservation of water rights, which Edmund Rogers assigned to Wailuku Sugar in 1967. (SWUPA 2237, p. 4, table 3; Attachment, p.1.)

c. The Commission had granted provisional approval but noted the reservation by Edmund Rogers. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

d. They request a permit for 600 gpd for watering their yard and garden of approximately 0.08 acre. (SWUPA 2237, p. 4, table 3; Attachment, p.2.)

445. SWUPA 2235—Russell Gushi

a. On April 23, 2009, Russell Gushi filed an existing use SWUPA for TMK No. (2) 3-5-012:015 (“Parcel 15”), which he purchased in 1992. (Gushi, WT, 12/22/15, ¶ 1.) (Hui/MTF and OHA: FOF B-770.)

b. Parcel 15 is 0.319 acre, for which he requests appurtenant rights of 95,700 gpd, and a permit for 600 gpd for his garden and fruit trees. (*Id.*, ¶¶ 4, 12.) (Hui/MTF and OHA: FOF B-771.)

c. The deed has a reservation of appurtenant rights when Edmund Rogers sold the property to the prior owner (presumed to be in 1967, when Rogers reserved water rights for properties he had sold, See SWUPA 2237—Karl & Lee Ann Harders, SWUPA 2239—Theodore & Zelig Harders, SWUPA 2238—Theodore & Zelig Harders Family Limited Partnership). (*Id.*, ¶ 2.) (Hui/MTF and OHA: FOF B-772.)

d. The Commission had granted provisional approval but noted the reservation by Edmund Rogers. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

446. SWUPA 2271—Waldemar & Darlene Rogers

a. On April 23, 2009, Waldemar and Darlene Rogers filed an existing use SWUPA for TMK No. (2) 3-5-012:012 (“Parcel 12”). (Rogers, WT, 1/28/16, ¶ 1.) (Hui/MTF and OHA: FOF B-800.)

b. Parcel 12 is 0.29 acre, for which the Rogers request recognition of appurtenant rights for 87,000 gpd, based on Reppun’s high estimate of 300,000 gad, and a permit for 600 gpd for 0.145 acre of their lawn and garden, based on Maui County’s single-family home standard of 600 gpd. (*Id.*, ¶¶ 4, 14, 18-19, 21; SWUPA 2271, p. 2, table 1, p. 4, table 3.) (Hui/MTF and OHA: FOF B-800, B-802.)

c. Waldemar Rogers inherited Parcel 12 from his father, Edmund Rogers, around 1970, and the deed contains a reservation of appurtenant rights. (*Id.*, ¶¶ 1-2.) (Hui/MTF and OHA: FOF B-801.)

d. The Commission had granted provisional recognition of appurtenant rights but had noted that the rights had been assigned to Wailuku Sugar. (Provisional Order, Attachment C, Revised Exh. 7, p. 40.)

447. SWUPAs 2213/2214N—Alan Birnie²⁹

a. On April 23, 2009, Alan Birnie filed existing and new use SWUPAs for TMK No. (2) 3-5-012:010 (“Parcel 10”). (Birnie, WT, 1/27/16, ¶ 1.) (Hui/MTF and OHA: FOF B-774.)

b. Parcel 10 is 0.23 acres, for which Birnie requests appurtenant rights of 69,000 gpd, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo, and a permit for 1,950 gpd: a new use for 0.0045 acre of lo‘i kalo and an existing use for 0.202 acre of his garden, multiplied by Maui County’s standard for diversified agriculture of 3,000 gad. (*Id.*, ¶¶ 5, 15, 17-20; SWUPA 2213, Attachment, p. 1; SWUPA 2214N, Attachment, p. 1.) (Hui/MTF and OHA: FOF B-779.)

c. Edmund Rogers assigned the water rights to Wailuku Sugar in 1967. (SWUPA 2213, Attachment, p. 2; SWUPA 2214, Attachment, p. 2.)

²⁹ The hearing transcript incorrectly labels Birnie’s testimony as that of Lester Nakama, Tr., 9/19/16, p. 63, l. 3 to p. 71, l. 8.

d. The Commission granted provisional approval of appurtenant rights but noted the reservation to Wailuku Sugar. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

448. SWUPA 2211—Dorothy Bell

a. On April 23, 2009, Dorothy Bell filed an existing use SWUPA for TMK No. (2) 3-5-012:011 (“Parcel 11”), a 0.26-acre property, for which she requested an estimated 1,440 gpd, using the bucket method, for 0.17 acre of her yard and garden. (SWUPA 2211, p. 2, table 1, p. 4, table 3, Attachment, p. 2.)

b. Edmund Rogers assigned the water rights to her property to Wailuku Sugar in 1967. (SWUPA 2211, Attachment, p. 2.)

c. Bell did not claim appurtenant rights in her SWUPA but participated in the provisional approval process and was granted provisional approval for two LCAs with the notation that Edmund Rogers had assigned the water rights to Wailuku Sugar. (SWUPA 2211, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

d. Bell did not participate in the contested case hearing.

449. SWUPA 2212—Douglas Bell

a. On April 23, 2009, Douglas Bell filed an existing use SWUPA for TMK No. (2) 3-5-012:008 (“Parcel 8”). (Bell, WT, 1/26/16, ¶ 1.) (Hui/MTF and OHA: FOF B-780.)

b. Parcel 8 is 0.34 acre, for which Bell requests recognition of appurtenant rights of 102,000 gpd, based on Reppun’s high estimate of 300,000 gad, and a permit for 2,160 gpd for 0.25 acre of a garden and lawn, using the “bucket method” (180 gallons x 12 hours). (*Id.*, ¶¶ 4, 10-15.) (Hui/MTF and OHA: FOF B-780, B-785, B-786.)

c. Bell did not claim appurtenant rights in his SWUPA, stating that Edmund Rogers had assigned the water rights to Wailuku Sugar in 1967, but participated in the provisional approval process and was granted provisional recognition with the notation that rights had been reserved to Wailuku Sugar. (*Id.*, ¶¶ 1-2; SWUPA 2212, Attachment, p. 2; Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

d. However, during oral testimony, Bell stated that when he bought the property from Edmund Rogers in 1972, he wasn’t aware of any reservation and thought it belonged to Edmund Rogers. He also provided a copy of his deed and stated that there wasn’t anything in it about reservation of water. Upon review of the deed, the Hearings Officer stated

for the record that there was no description of any reservation in it. (See Tr., 7/18/16, p. 51, l. 2 to p. 52, l. 10, p. 82, ll. 7-10.) (Hui/MTF and OHA: FOF B-783.)

e. Parcel 8 is comprised of a portion of LCA 3108:1, confirmed by RP 2314, with the description that the land was “aina kalo” with 2 mo‘okalo.” This is the same LCA as claimed under SWUPA 2315—Leinaala Kihm, who stated that her deed had a reservation. (*Id.*, ¶ 9; Exh. 2212-Bell-1, -2; Letter dated July 14, 2016, SWUPA 2315—Leinaala Kihm.) (Hui/MTF and OHA: FOF B-784.)

450. SWUPA 2238—Theodore & Zelig Harders Family Limited Partnership

a. On April 23, 2009, the Theodore & Zelig Harders Family Limited Partnership filed an existing use SWUPA for TMKs No. (2) 3-5-012:006 (“Parcel 6”) and No. (2) 3-5-012:007 (“Parcel 7”). (Harders, WT, 1/26/16, ¶ 1.) (Hui/MTF and OHA: FOF B-737.)

b. The Harders ‘ohana has submitted five SWUPAs. They have lived on some of these parcels for generations and were able to buy the other parcels, which have reservation of water rights, assigned by Edmund Rogers to Wailuku Sugar in 1967. The parcels under SWUPAs 2240 and 2311 are the ones without reservations. (Harders, Tr., 7/18/16, p. 59, l. 10 to p. 60, l. 21; *Id.*, ¶ 2; SWUPA 2238, Attachment, p. 1.)

c. Parcel 6 is 0.32 acre, and Parcel 7 is 0.36 acre, for a total of 0.68 acre. (SWUPA 2238, p. 2, table 1.)

d. The Commission granted provisional approval but noted the deeds’ reservations to Wailuku Sugar. (Provisional Order, Attachment C, Revised Exh. 7, pp. 39-40.) (Hui/MTF and OHA: FOF B-740.)

e. If appurtenant rights survive the deeds’ reservations, the Harders Family request 204,000 gpd in appurtenant rights, based on Reppun’s high estimate of 300,000 gad for lo‘i kalo. (*Id.*, ¶¶ 5, 17-19.) (Hui/MTF and OHA: FOF B-738.)

f. They also request a permit for 1,800 gpd for three homes and surrounding lawn and garden, using the Maui County single-family home standard of 600 gpd. In the 2009 SWUPA, the request was for 1,200 gpd for two homes—one on half of each of the two parcels. (*Id.*, ¶¶ 5, 20-21; SWUPA 2238, p. 4, table 3; Attachment, pp. 1-2.) (Hui/MTF and OHA: FOF B-738.)

451. SWUPA 2259—Jerri Young (Miyamoto)

a. On April 23, 2009, Elsie Miyamoto filed an existing use SWUPA for TMK No. (2) 3-5-012:009 (“Parcel 9”). She has since passed away, and her daughter and current landowner, Jerri Jane K. Young, submitted testimony and requested that her name replace her mother’s on the permit application. (Young (Miyamoto)), WT, 9/13/16, ¶ 1.) (Hui/MTF and OHA: FOF B-787.)

b. Parcel 9 is 0.19 acres, for which Young requests appurtenant rights of 57,000 gpd and a permit for 600 gpd for her lawn and garden. (*Id.*, ¶¶ 15, 20.) (Hui/MTF and OHA: FOF B-788.)

c. Parcel 9 was purchased by Elsie Miyamoto around 1967 from Edmund Rogers, and the deed has a reservation of appurtenant rights. The Commission had granted provisional approval, with the notation that rights had been reserved to Wailuku Sugar. (*Id.*, ¶ 2; Provisional Order, Attachment C, Revised Exh. 7, p. 40 .) (Hui/MTF and OHA: FOF B-789.)

d. Since Miyamoto passed away, her neighbor Nicholas Harders has cared for her garden and lawn, using the same amount of water for the same uses and believes the single-family home standard of 600 gpd will suffice for her 0.15 acre yard. (*Id.*, ¶ 15.) (Hui/MTF and OHA: FOF B-790. SWUPA 2259, p. 2, table 1, p. 4, table 3)

452. SWUPA 2224—James Dodd

a. On April 23, 2009, James Dodd filed an existing use SWUPA for TMK No. (2) 3-5-012:005 (“Parcel 5”), where he has lived since he purchased it in 1977. (Dodd, WT, 2/3/16, ¶ 1.) (Hui/MTF and OHA: FOF B-791.)

b. Parcel 5 is 0.32 acre, for which Dodd requests recognition of appurtenant rights for 96,000 gpd and a permit for 4,113 gpd in existing uses. (*Id.*, ¶¶ 5, 12.) (Hui/MTF and OHA: FOF B-791.)

c. The deed to Parcel 5 contains a reservation of water rights to Wailuku Sugar in 1967. (*Id.*, ¶ 2; Dodd, Tr., 7/28/16, p. 6, ll. 6-14; p. 8, ll. 9-16.) (Hui/MTF and OHA: FOF B-792.)

d. The Commission had granted provisional approval but also noted the reservation to Wailuku Sugar. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

e. Dodd irrigates 0.26 acre of fruit trees, garden, and lawn, and measured the irrigation rate by a modified “bucket method,” filling each of two quart jars in 7 seconds. He

then extrapolated the 7 seconds into a 24-hour day, resulting in a rate of 6,170 gpd, which he reduced by one-third to 4,113 gpd. He did a similar measurement for his neighbor, Patricia Federcell, with the same results. (*Id.*, ¶ 17; Dodd (Federcell), WT, 2/3/16, ¶ 16.)

f. Dodd reduced the measured rate of 6,170 gpd to 4,113 gpd, because: “My irrigation application varies depending of (sic) the season. During the wet winter months, I may not irrigate at all. But during the hot summer months, I sometimes irrigate continuously, over a 24-hour period. Based on many years of water use over a twelve-month period I irrigate Mrs. Federcell’s (as well as his own) garden using the hoses about 2/3 of the time. So, I estimate the average water use at 2/3 of 6,170 gallons per day, or 4,133 gallons per day.” (Dodd (Federcell), WT, 2/3/16, ¶ 16.)

g. However, 2/3s of 6,170 gpd, or 4,133 gpd, still reflects 24-hour irrigation over eight months, while his testimony was that only “during the hot summer months, I sometimes irrigate continuously, over a 24-hour period.” (Dodd (Federcell), WT, 2/3/16, ¶ 16.)

h. 4,133 gpd over 0.26 acre equals a rate of 15,896 gad. This is far in excess of Maui County’s “average typical residential customer” use of 400 to 600 gpd for combined indoor and outdoor use, irrigation of 1,500 to 2,000 gpd for “lush tropical landscape treatment” in arid areas, and Maui County’s domestic cultivation standard of 3,000 gad, *supra*, FOF 308.

453. SWUPA 2230—Patricia Federcell

a. On April 23, 2009, Patricia Federcell filed existing use SWUPA for TMK No. (2) 3-5-012:001 (“Parcel 1”). Federcell’s neighbor James Dodd, cares for her garden and she gave him permission to testify on her behalf. (Dodd (Federcell), WT, 2/3/16, ¶ 1.) (Hui/MTF and OHA: FOF B-794.)

b. Parcel 1 is 1.198 acres, for which Federcell and Dodd request appurtenant rights of 593,400 gpd, and a permit for 4,113 gpd for a 0.25-acre home garden. (*Id.*, ¶¶ 4, 12; SWUPA 2230, p. 2, table 1, p. 4, table 3.) (Hui/MTF and OHA: FOF B-795, B-797.)

c. In her existing use application, Federcell stated that although she had purchased her property, her deed did not indicate that the appurtenant rights were reserved. (SWUPA 2230, Attachment, pp. 1-2.)

d. However, in granting provisional recognition, the Commission had noted that there was a reservation to Wailuku Sugar, and Federcell’s Parcel 1 is adjacent to Dodd’s

Parcel 5 and both are derived from LCA 460.1. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

e. Parcel 1 is comprised of a portion of LCA 460:1, confirmed by RP 2165. (*Id.*, ¶ 4; Exh. 2230-Federcell-2.) (Hui/MTF and OHA: FOF B-796.)

f. LCA 460:1 was 7.41 acres and described as “numerous kalo patches and a kula.” Parcel 1’s 1.978 acres and Parcel 28’s (SWUPA 2240) 3.71 acres total 5.69 acres, or about 77 percent of LCA 460:1. Ancient lo‘i are still prevalent on the 77 percent of LCA 460:1 that now comprise Parcels 1 and 28, and they are adjacent to Waikapū Stream and a traditional ‘auwai. (Harders (SWUPA 2240/3467N), WT, 1/26/16, ¶¶ 5, 11, 13, 17; Exh. 2240-T&Z-1, -6; Dodd (Federcell), WT, 2/3/16, ¶¶ 5, 11-12; Exh. 2230-Federcell-2, -4; Harders (SWUPAs 2240 & 3467N), WT, 1/26/16, ¶ 14; Exh. 2240-Harders-6 and 2240-T&Z-7; Exh. 2311-Harders-4-p. 1.) Therefore, about 80 percent of LCA 460:1 was in lo‘i kalo.

g. On his own property, Dodd irrigates 0.26 acre of fruit trees, garden, and lawn, and measured the irrigation rate by a modified “bucket method,” filling each of two quart jars in 7 seconds. He then extrapolated the 7 seconds into a 24-hour day, resulting in a rate of 6,170 gpd, which he reduced by one-third to 4,113 gpd. He did a similar measurement for his neighbor, Patricia Federcell, with the same results. (*Id.*, ¶ 17; Dodd (Federcell), WT, 2/3/16, ¶ 16.)

h. Dodd reduced the measured rate of 6,170 gpd to 4,113 gpd, because: “My irrigation application varies depending of (sic) the season. During the wet winter months, I may not irrigate at all. But during the hot summer months, I sometimes irrigate continuously, over a 24-hour period. Based on many years of water use over a twelve-month period I irrigate Mrs. Federcell’s (as well as his own) garden using the hoses about 2/3 of the time. So, I estimate the average water use at 2/3 of 6,170 gallons per day, or 4,133 gallons per day.” (Dodd (Federcell), WT, 2/3/16, ¶ 16.)

i. However, 2/3s of 6,170 gpd, or 4,133 gpd, still reflects 24-hour irrigation over eight months, while his testimony was that only “during the hot summer months, I sometimes irrigate continuously, over a 24-hour period.” (Dodd (Federcell), WT, 2/3/16, ¶ 16.)

j. 4,133 gpd over 0.25 acre equals a rate of 16,532 gad. This is far in excess of Maui County’s “average typical residential customer” use of 400 to 600 gpd for combined

indoor and outdoor use, irrigation of 1,500 to 2,000 gpd for “lush tropical landscape treatment” in arid areas, and Maui County’s domestic cultivation standard of 3,000 gad, *supra*, FOF 308.

454. SWUPA 2315—Leinaala Kihm

a. On April 30, 2009, Leinaala Kihm filed an existing use SWUPA for TMK No. (2) 3-5-012:003 (“Parcel 3”), requesting an estimated 2,200 gpd of domestic use for her lawn and garden. (SWUPA 2315, p. 2, table 1.)

b. Parcel 3 is 14,000 square feet (0.32 acre). (Exhibit 2315-Kihm (map.)

c. In her SWUPA, Kihm did not claim appurtenant rights and later stated that her deed had a reservation, but participated in the provisional approval process and was granted provisional approval for LCA 3108.1, with the notation “two moos of kalo” for Apana 1. Water rights assigned to Wailuku sugar.” (SWUPA 2315, p. 1; Letter dated July 14, 2016; Provisional Order, Attachment C, Revised Exh. 7, p. 40.)

d. Kihm did not participate in the contested case hearing.

455. SWUPA 2354—Fong Construction Co.

a. On April 30, 2009, Fong Construction Company Inc. filed an existing use SWUPA for an unspecified TMK. (SWUPA 2354; Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

b. Estimated existing use was 3,507 gpd, with a request for 4,000 gpd, on 2 acres for dust control. (SWUPA 2354, p. 2, table 1, p. 3, table 3, p.4, table 4.)

c. No appurtenant rights were claimed. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

d. No further information was provided nor did Fong Construction Co. participate in the contested case hearing.

456. SWUPA 2180—Hawaiian Cement

a. On April 24, 2009, Hawaiian Cement filed an existing use SWUPA for TMK No. 3-8-007:101 for dust control on 15 of its 56 acres, with an estimated use of 9,959 gpd, using gravel instead of grass to reduce the amount of water needed. (SWUPA 2180, p. 2, table 1, p. 4, table 3, Letter of Memorandum, 4/8/09.)

b. No appurtenant rights were claimed nor did it participate in the provisional approval process. (SWUPA 2180; Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

c. No further documents were provided, nor did Hawaiian Cement participate in the contested case hearing.

457. SWUPA 2352—U.S. Fish & Wildlife Service

a. The U.S. Fish & Wildlife Service (“USFWS”) filed an existing use SWUPA for TMK No. (2) 3-2-005:002, dated April 30, 2009 but marked as received by the Commission on 12:59 p.m. on May 1, 2009. (SWUPA 2352.)

b. The TMK is for Keālia Pond National Wildlife Refuge, into which Waikapū Stream flows at its terminus. There is no actual diversion by USFWS. (SWUPA 2352, Attachment 1.)

c. The Refuge receives water from two other sources, Pōhākea and Pale‘a‘ahu Streams, and occasionally pumps groundwater to augment pond levels. It is difficult to state what quantity of water is required from Waikapū Stream itself, and USFWS stated that it was willing to work with the State to develop a more exact estimate of the quantity of water necessary. (SWUPA 2352, Attachment 1.)

d. Although USFWS claimed appurtenant rights in its SWUPA, it did not provide any documents nor participate in the provisional approval process.

e. USFWS also provided no further information nor participate in the contested case hearing. (Provisional Order, Attachment C, Revised Exh. 7, p. 39.)

e. Multiple Sources

i. Waihe‘e Ditch

458. Waihe‘e Ditch:

a. Water that reaches the Hopoi Chute, which drops water down into the Spreckels Ditch near its terminus at Waiale Reservoir, comes from Waihe‘e River and Wailuku River via the ‘Īao-Maniania Ditch. Water used to also come from North Waiehu Stream via the North Waiehu Ditch, which has since been abandoned, *supra*, FOF 136.

b. After the Hopoi Chute, water comes from Wailuku River via the ‘Īao-Waikapū Ditch, from an intake on Waikapū Stream, and water remaining in the South Waikapu Ditch. These waters are used for the ‘Īao-Waikapū fields and a few other users, including MTP and now including the other Waikapu Properties. (SWUPA 2205, Narrative, pp. 2-3; *see* FOF 116-121, 135, *supra*.)

459. The ‘Īao-Maniania Ditch, which drops water from Wailuku River into the Waihe‘e Ditch, is now the first place that the Waihe‘e Ditch carries other than Waihe‘e River water.

460. SWUPA 2142—Hale Mua Properties

a. On April 29, 2009, Hale Mua Properties filed a new use SWUPA for TMK No. (2) 3-3-002:031, a 238-acre property, for which it requested 800,000 gpd for 238 acres of an affordable and market housing project and 1,000,000 gpd for the Maui Department of Water Supply public water system for domestic uses. Hale Mua Properties proposed to build a surface water treatment plant to produce potable water. (SWUPA 2142, p. 2, table 1, p. 4, table 3.)

b. Hale Mua Properties did not claim appurtenant rights nor participate in the provisional approval process. (SWUPA 2142, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 3.)

c. Hale Mua Properties did not submit written testimony nor participate in the contested case hearing.

461. SWUPA 2351N—Wahi Ho‘omalū LP

a. On April 30, 2009, Wahi Ho‘omalū filed a new use SWUPA for TMKs (2) 3-3-002-001 (“Parcel 1”), consisting of 834.016 acres, and (2) 3-3-002-026 (“Parcel 26”), consisting of 0.886 acres, updated on July 7, 2010 by letter and amendment, requesting 984,516 gpd for:

1. Parcel 1: 240,000 gpd to produce 144,000 gpd of potable drinking water for 80 potential connections on 40 lots, 739,200 gpd for 168 acres planted in macadamia nuts, at a rate of 4,400 gad.
2. Parcel 26: 5,316 gpd for flood irrigation on 0.886 acres of wetland taro at 6,000 gad.

(SWUPA 2351N, p. 2, table 1, p. 3, table 2, Addendum; Russell, WT, 2/4/16, ¶¶ 3,5.) (Wahi Ho‘omalū: FOF 1-2.)

b. Wahi Ho‘omalū acquired the land from Wailuku Agribusiness Co., Inc. in 2003. The deed for parcel 26 stated that the water rights had been conveyed to HC&S by Bill of Sale dated December, 24, 1924. (Exhs. 2351-Wahi-13, -14, Schedule B Exceptions.) (Wahi Ho‘omalū: FOF 9.)

1. The land was part of Wailuku Sugar Co. sugar cane fields planted in the early 1900's until about 1982, when the land was planted in macadamia nuts, and active cultivation stopped in 1999. The macadamia trees in fields 36 and 37 in the northeast portion of the land are still growing and the irrigation system is still in place although in disrepair. Field 36 was watered from Waihe'e Ditch via reservoir 37, and field 37 was watered from Wailuku River via the 'Īao-Maniania Ditch and reservoir 45. (SWUPA 2351N, Addendum, pp. 1, 3.)

c. Parcels 1 and 26 include about 19 LCAs along South Waiehu Stream and several LCAs along Wailuku River. Irrigation water would be supplied from the Waihe'e Ditch via reservoir 37 and from Wailuku River via the 'Īao-Maniania Ditch and reservoir 45. (SWUPA 2351N, Addendum, p.3.)

d. In the provisional approval process, Wahi Ho'omalū claimed appurtenant rights for seventeen (17) LCAs in Parcel 1 and one (1) LCA in Parcel 26. The Provisional Order recognized twelve (12) LCAs, denied 1 LCA without prejudice, and made no determination of the remaining 5 LCAs, including the LCA in Parcel 26. (Provisional Order, Attachment C, Revised Exh. 7, pp. 33-34.) (Wahi Ho'omalū: FOF 4-5.)

e. On February 5, 2015, Wahi Ho'omalū's Opening Brief included a declaration requesting it be granted quantification of its appurtenant rights on 17 LCAs, the 12 that were provisionally approved and the 5 that had not yet been determined, and requested that its water permit be amended to include water to grow kalo on all of its LCAs with appurtenant rights. (Wahi Ho'omalū Opening Brief, Declaration of Russell, ¶ 5.) (Wahi Ho'omalū: FOF 6.)

f. On July 28, 2016, Wahi Ho'omalū further amended its request for appurtenant rights and its water use permit request:

1. Withdrew its request for 240,000 gpd to produce domestic water for future development.
2. Left unchanged its request for 739,200 gpd for 168 acres planted in macadamia nuts.
3. Reduced its request for wetland kalo to six of the LCAs that it claimed had appurtenant rights and in the amount for growing kalo in the quantification of appurtenant rights.

(Russell, WT, 7/28/16, ¶ 22; Russell, Tr., 7/19/16, p. 161, l. 12 to p. 162, l. 14; Russell, Tr., 9/19/16, pp. 46-50.) (Wahi Ho‘omaluku: FOF 6.) (Hui/MTF and OHA: FOF C-159-C-260.)

g. Of the original 18 LCAs Wahi Ho‘omaluku had claimed had appurtenant rights, it did not pursue the LCA that had been denied and withdrew its request for 2 of the 5 that had not yet been determined because it was not able to quiet their titles. Of the remaining 15, LCA 3456 in Parcel 26 is also a portion of the same land awarded in LCA 2468:1. In the event appurtenant rights to Parcel 26’s LCA 3456 has been extinguished, Wahi Ho‘omaluku would pursue that portion of LCA 2468:1 that remains in Parcel 1. (Russell, Tr., 7/19/16, p. 124, l. 25 to p. 125, l. 2, p. 125, l. 17 to p. 128, l. 6.) (Wahi Ho‘omaluku: FOF 8.) (Hui/MTF and OHA: FOF C-241-C-243.)

h. Finally, during testimony at the September 19, 2016 hearings, Wahi Ho‘omaluku reduced its request for a water-use permit for wetland kalo to 2.64 acres on six of the LCAs that it was claiming for appurtenant rights, or 396,000 gpd (2.64 acre x 150,000 gad). If appurtenant rights to LCA 3456 for Parcel 26 has been extinguished, substituting 0.21 acre of LCA 2468:1 would reduce the water-use permit request to 2.42 acres, or 363,000 gpd (2.42 acres x 150,000 gad). (Russell, Tr., 9/19/16, p. 46, l. 14 to p. 50, l. 18.) (Wahi Ho‘omaluku: FOF 46.)

i. Wahi Ho‘omaluku’s final claim for appurtenant rights was based on the following LCAs:

1. LCA 2461:2: 0.45 acres described as six patches or reference to lois, for which it claimed appurtenant rights on all 0.45 acres. (Exhs. 2351-Wahi-1A, 2, 18, 29.) (Wahi Ho‘omaluku: FOF 20.)
2. LCA 2468:2:2.94 acres described as 7 patches or reference to lois, for which it claimed appurtenant rights on all 2.94 acres. (Exhs. 2351-Wahi-1A, 3, 20, 30.) (Wahi Ho‘omaluku: FOF 21.)
 - a. However, 2.94 acres includes both ‘āpana 1 and 2, which are 2.49 acres and 0.45 acres, respectively. (Exhs. 2351-Wahi-1A, 3.) (Hui/MTF and OHA: FOF C-248c.)
 - b. Therefore, LCA 2468:2 is 0.45 acres, all of which should be claimed for appurtenant rights.
3. LCA 2554:1:0.50 acres described as areas of kalo, for which it claimed appurtenant rights for all 0.50 acres (Exhs. 2351-Wahi-1A, 4, 21, 31.) (Wahi Ho‘omaluku: FOF 22.)

4. LCA 2554:2:1.38 acres described as taro and kalo, for which it claimed appurtenant rights for all 1.38 acres. (Exhs. 2351-Wahi-1A, 4, 22, 31.) (Wahi Ho‘omalū: FOF 23.)
5. LCA 3259:4.83 acres described as 1 taro section and 2 pō‘alimas or large kalo plots, for which it claimed appurtenant rights for all 4.83 acres. (Exhs. 2351-Wahi-1A, 5, 19, 32.) (Wahi Ho‘omalū: FOF 24.)
6. LCA 3275D:2.06 acres described as kalo and kula in ‘āpana 1, 1 lo‘i each in ‘āpana 2 and 3, 3 lo‘i in ‘āpana 4, 46 lo‘i in ‘āpana 5, and 6 lo‘i in ‘āpana 6. ‘āpana 2-6 are also described collectively as Chief’s Taro Plantation.
 - a. Wahi Ho‘omalū claimed appurtenant rights for half, or 1.03 acres, because of the presence of kula along with kalo.
 - b. However, ‘āpana 1 was 2.03 acres, and the Chief’s Taro Plantation was 0.03 acres. Therefore, half of 2.03 acres, or 1.015 acres, should be claimed for appurtenant rights, and all of the Chief’s Taro Plantation, or 0.03 acres, should be claimed for appurtenant rights, for a total of 1.045 acres.

(Exhs. 2351-Wahi-1A, 6, 23, 33.) (Wahi Ho‘omalū: FOF 25.)

7. LCA 3275E:2: 1.12 acres described as lo‘i sections or kalo, for which it claimed appurtenant rights for all 1.12 acres. (Exhs. 2351-Wahi-1A, 7, 24, 34.) (Wahi Ho‘omalū: FOF 26.)
8. LCA 3275E:3: 6.62 acres described as 22 taro patches or 22 lo‘i and a Chief’s Taro Plantation, for which it claimed appurtenant rights for all 6.62 acres. (Exhs. 2351-Wahi-1A, 7, 24, 34.) (Wahi Ho‘omalū: FOF 27.)
9. LCA 3275E:6: 3.39 acres described as taro paukū or lo‘i sections and kalo, for which it claimed appurtenant rights for all 3.39 acres. (Exhs. 2351-Wahi-1A, 7, 24, 25.) (Wahi Ho‘omalū: FOF 28.)
10. LCA 3275W:0.49 acres, described as a house site.
 - a. Wahi Ho‘omalū claimed appurtenant rights for 0.24 acres after subtracting 0.25 acres for the house site.
 - b. However, no description other than a house site was provided, and the parcel was bordered on three sides by kula and on the fourth, by a pali (cliff).

- c. Therefore, no appurtenant rights are attached to LCA 3275W.

(Exhs. 2351-Wahi-1A, 8, 26.) (Wahi Ho‘omalū: FOF 29.)

11. LCA 3451:1.53 acres, described as kalo and kula, for which it claimed appurtenant rights for half, or 0.765 acres, because of the presence of kula as well as kalo. (Exhs. 2351-Wahi-1A, 9, 35.) (Wahi Ho‘omalū: FOF 30.)
12. LCA 11222:1.58 acres described as kalo and kula, for which it claimed appurtenant rights for half, or 0.79 acres, because of the presence of kula as well as kalo. (Exhs. 2351-Wahi-1A, 10, 36.) (Wahi Ho‘omalū: FOF 31.)
13. LCA 1806:2:0.46 acres described as 3 taro patches or kalo land of 3 lo‘i and which Wahi Ho‘omalū also states contained a house site, for which it therefore claimed appurtenant rights for 0.21 acres after subtracting 0.25 acres for the house site.
 - a. However, there is no reference to a house site on ‘āpana 2.
 - b. Therefore, appurtenant rights should accrue to all 0.46 acres.

(Exhs. 2351-Wahi-1A, 16, 27.) (Wahi Ho‘omalū: FOF 32.)

14. LCA 3456: 0.886 acres described as 3 sections, taro pauku, 25 taro patches, 3 taro patches or kalo land and 3 lo‘i, for which it claims appurtenant rights for all 0.886 acres if the deed for Parcel 26 survives the water reservation made in 1924. (Exhs. 2351-Wahi-1A, 12, 37, 38.) (Wahi Ho‘omalū: FOF 33-34.)
15. LCA 2468:12.49 acres described as taro land and pasture or kalo and kula lands. (Exhs. 2351-Wahi-1A, 3, 15, 20, 30.) (Wahi Ho‘omalū: FOF 34.)
 - a. Wahi Ho‘omalū states that this is the same parcel of land as LCA 3456 awarded under a different grant and owned as part of parcel 1. The portion of LCA 2468:1 that is not in neighboring TMKs is 0.43 acres, of which it claims appurtenant rights for half, or 0.215 acres, because of the presence of kula as well as kalo.

(Exhs. 2351-Wahi-1A, 3, 15, 20, 30.) (Wahi Ho‘omalū: FOF 34.)

- j. In sum, Wahi Ho‘omalua requests:
1. 739,200 gpd for 168 acres planted in macadamia nuts, at a rate of 4,400 gad.
 2. 396,000 gpd (2.64 acre x 150,000 gad) for lo‘i kalo, or in the alternative, 363,000 gpd (2.42 acres x 150,000 gad), as follows:

LCA	Acreage	Appt. Rts Acreage		Permit Request (gpd)
		Claimed	Revised	
2461:2	0.45	0.45	0.45	0
2468:2	2.94	2.94	0.45	0
2554:1	0.50	0.50	0.50	0
2554:2	1.38	1.38	1.38	75,000 (0.5 acre)
3259	4.83	4.83	4.83	75,000 (0.5 acre)
3275D	2.06	1.03	1.045	0
3275E	1.12	1.12	1.12	0
3275E:3	6.62	6.62	6.62	0
3275E:6	3.39	3.39	3.39	0
3275W	0.49	0.24	0.00	0
3451	1.53	0.765	0.765	75,000 (0.5 acre)
11222	1.58	0.79	0.79	75,000 (0.5 acre)
1806:2	0.46	0.21	0.46	31,500 (0.21 acre)
3456	0.886	0.886	0.886	64,500 (0.43 acre)
2468:1* (part)	0.43	0.215	0.215	31,300 (0.21 acre)
TOTALS	28.236/ 27.78*	25.366/ 24.695*	22.901/ 22.23	396,000/ 363,000*

* Alternative to LCA 3456

a. Pi‘ihana Field 49 Kuleana Pipe

462. The Pi‘ihana-Field 49 Kuleana Pipe carries water from the Waihe‘e Ditch to the following kuleanas:

463. SWUPA 2192—Charles Dando Sr.

a. On April 20, 2009, Charles Dando Sr. filed separate existing use SWUPAs for TMKs No. (2) 3-5-030:116 (“Parcel 116”), situated in Waikapu, and (2) 3-4-033:014 (“Parcel 14”), situated in Wailuku, for home landscape irrigation. (SWUPA 2191, p. 4, table 3; SWUPA 2192, p. 4, table 3.) (Hui/MTF and OHA: FOF B-869.)

b. SWUPA 2192 is for Parcel 14’s 0.543 acre, for which he is requesting 1,705 gpd for 0.5 acre. (SWUPA 2192, p. 2, table 1, p. 4, table 3; Dando, WT, 7/25/16, ¶¶ 1-4). (Hui/MTF and OHA: FOF B-869.)

c. When it was pointed out that 1,705 gpd over 0.5 acre was 3,410 gad and that on his other property he was using 1,749 gpd on 0.1 acre, Dando replied that when he averaged the meter readings over a year in 2007 to 2008, he “was establishing the yard and everything, so it should be way down from that.” (Dando, Tr., 7/29/16, p.96, l. 19 to p. 97, l. 16.) (Hui/MTF and OHA: FOF B-869.)

d. Dando did not participate in the provisional approval process and does not request recognition of appurtenant rights. (Provisional Order, Attachment C, Revised Exh. 7, p. 2.)

464. SWUPAs 2273/2274N—Alfred Santiago

a. Alfred Santiago and El Ranchitos DeMello filed SWUPAs on April 23, 2009 for TMK Nos. (2) 3-4-024:22 (“Parcel 22”) and (2)3-4-024:027 (“Parcel 27”), which together total 1.626 acres. Santiago uses 0.8 acres of Parcel 22 and 0.7 acres of Parcel 27 (1.5 acres out of a total of 1.626 acres) for diversified agriculture, including tapioca, dry land kalo, banana, sweet potato, and similar crops. (Santiago, WT, February 2, 2016, ¶¶ 1, 5, 17-18.) (Hui/MTF and OHA: FOF B-115, B-120, B-121.)

b. Existing uses were not measured, and Santiago estimates use at 10,000 gpd based on his over 30-year experience and expertise in farming these lands. This amounts to 6,667 gad (10,000 gallons divided by 1.5 acres). (*Id.*, ¶¶ 17-18.) (Hui/MTF and OHA: FOF B-121.)

c. Santiago would like to re-establish lo‘i kalo on the 1.5 acres and based on his experience, he agrees with Reppun’s water and estimates he will need 450,000 gpd (1.5 acres x 300,000 gad). (*Id.*, ¶¶ 21, 27.) (Hui/MTF and OHA: FOF B-122.)

d. The two parcels have been in the DeMello ‘ohana for generations, but the ‘ohana has agreed that permits should be issued in Santiago’s name, as he has cultivated the lo‘i on these kuleana for decades. (*Id.*, ¶ 1.) (Hui/MTF and OHA: FOF B-115.)

e. Parcels 22 and 27 are comprised of portions of two LCAs—LCA 3257:2, confirmed by RP 4329, and LCA 3333, confirmed by RP 5152—as well as a portion of a pō‘alima. (*Id.*, ¶ 7; Exh. 2273-Santiago-4.) (Hui/MTF and OHA: FOF B-119.)

f. LCAs 3257:2 and 3333 are described as containing lo‘i and nothing else. And the close proximity of these kuleana to the river and ‘auwai support that these lands were cultivated exclusively in lo‘i kalo at the time of the Māhele. The Commission granted

provisional approval. (*Id.*, ¶¶ 8-10; Exh. 2273-Santiago-5, p. 4; Exh. 2273-Santiago-6, p. 4; Provisional Order, Attachment C, Revised Exh. 7, p. 3.) (Hui/MTF and OHA: FOF B-119.)

g. Using Reppun’s high estimate, Santiago requests appurtenant rights for 1.626 acres, or 487,800 gpd (1.626 acres x 300,000 gad). (*Id.*, ¶ 12.) (Hui/MTF and OHA: FOF B-120.)

h. Again, using Reppun’s high estimate, he requests a total 450,000 gpd for the 1.5 acres he plans to convert into lo‘i kalo. (*Id.*, ¶¶ 21, 27.) (Hui/MTF and OHA: FOF B-122.)

465. SWUPA 2043—El Ranchitos DeMello (Santiago)

This SWUPA was filed for the same two properties as for SWUPAs 2273/2274N—Alfred Santiago (immediately *supra*), but Alfred Santiago is pursuing the applications after consultation with the property owner, El Ranchitos DeMello, because Santiago has been cultivating this land for decades. (Santiago, WT, 2/2/16, ¶ 1.)

466. SWUPA 2287—Michelle Haller

a. On April 24, 2009, Steve Haller filed an existing use SWUPA for TMK No. (2) 3-4-031:001 (“Parcel 1”), a 46.97-acre property for which he requested 19,519 gpd of metered use on 31 acres: 25 acres of vegetables and 6 acres of ornamental and nursery plants. Michelle Haller testified at the hearing, as her husband had recently passed away. (SWUPA 2287, p. 2, table 1, p. 4, table 3; Haller, WT, 3/18/16, ¶ 4; Michelle Haller³⁰, Tr., 9/19/16, p. 12, ll. 9-21.)

b. About 70 percent of the land is producing, and they have farmers or their descendants that have been there since they purchased the property in 2004 from Wailuku Water Company, which has been providing the water. (Haller, Tr., 9/19/16, p. 12, ll. 21-24, p.19, ll. 2-12.)

c. Michelle Haller says that currently, about 31 acres would be vegetable farming, with about seven acres in trees.

d. In his written testimony of March 18, 2016, Steve Haller had submitted documents on “32 Land Commission Awards and 15 Poalima on 46.97 acres,” but he had not submitted any documents during the provisional approval process and had been denied without

³⁰ Michelle Haller is misidentified in the transcript as “Michelle Baillie.” Tr., 9/19/16 at 3 (Index of Witnesses), 12.

prejudice. Michelle Haller stated that they haven't had legal counsel, so her son did the research. (*Id.*, ¶ 4; Provisional Order, Attachment C, Revised Exh. 7, p.2; Haller, Tr., 9/19/16, p, 17, l. 23 to p. 18, l. 11.) (Hui/MTF and OHA: FOF B-865.)

e. The “32 Land Commission Awards” included counting ‘āpana within each LCA separately, and the number of LCAs were 18. No documentation was provided for LCA 2405:05 and the 15 pō‘alima, and documentation was provided for 17 LCAs. (Exh. 2287-Haller-1.)

f. The following are the documentation of the 17 LCAs:

1. LCA 3221, confirmed by RP 4814, was 2.84 acres and described as 25 lo‘i and kalo lands.
2. LCA 7742:2, 3, and 7, confirmed by RP 7433, was 7.58 acres:
 - i. ‘āpana 1 was described as kalo land, taro mo‘o, and 1 lo‘i;
 - ii. ‘āpana 2 was described as 3 lo‘i, one dry, or as 2 taro lo‘i;
 - iii. ‘āpana 7 had boundary descriptions but no description of contents.

467. SWUPA 2223—Winifred & Gordon Cockett

a. The Cockett ‘ohana filed an existing use SWUPA on April 23, 2009, for TMK No. (2) 3-4-031:008 (“Parcel 8”), which has been in their family for over 60 years, requesting recognition of appurtenant rights in the amount of 195,000 gpd for 0.65 acres, using Reppun high estimate of 300,000 gad, and an existing use permit of 942 gpd, based on irrigating 0.314 acre of non-commercial gardening and applying the 2002 State of Hawai‘i Water System Standard for Maui County domestic cultivation of 3,000 gad. (Cockett, WT, August 28, 2016, ¶¶ 1, 3; SWUPA 2223, Att. A, p. 2.) (Hui/MTF and OHA: FOF B-108, B-109, B-113, B-114.)

b. Parcel 8 is a portion of LCA 3382, confirmed by RPs 3793 and 5288, with 24 lo‘i by foreign testimony and existing physical features that the land was cultivated entirely in lo‘i kalo. The Commission granted provisional approval. (Cockett, WT, August 28, 2016, ¶¶ 7, 9; SWUPA 2223, Att. E, p. 13; Provisional Order, Attachment C, Revised Exh. 7, p. 2.) (Hui/MTF and OHA: FOF B-112.)

c. Their existing use was not measured but instead estimated using 3,000 gad, resulting in 942 gpd. An “average typical residential customer” in Maui County uses 400 to 600 gpd of combined indoor and outdoor use, and as high as 1,500 to 2,000 gpd for irrigation of

“lush tropical landscape treatment” in arid areas. Maui County has accommodated agricultural development lots with 600 to 1,200 gpd, but limits further allocations so as not to provide excessive amounts of water to developments not engaged in bona fide agriculture. (FOF 308.)

b. Wailuku Town Kuleana Ditch

468. The Wailuku Town Kuleana Ditch is next on Waihe‘e Ditch:

469. SWUPA 2181—Kaanapali Kai

a. On April 30, 2009, Kaanapali Kai filed an existing use SWUPA for TMK No. (2) 3-4-014:060 (“Parcel 60”), a 6.088-acre property, for 4,595 gpd of metered use on 5.0 acres of household landscaping. Kaanapali Kai is a corporation owned by the Yokouchi family, and it is used as a residence for members of the family. Sheryl-Lynn Suzuki, president of Kaanapali Kai, says her father purchased the property in 1992, but she also said she purchased it from Wailuku Agribusiness in 2002. (Suzuki, WT, 8/26/16, ¶¶ 1-3; SWUPA 2181, p. 2, table 1, p. 4, table 3; Suzuki, Tr., 9/20/16, p. 32, ll. 18-21.)

b. There is a main house, a four-car garage, a cottage, and a tennis court in disrepair. Suzuki’s niece was living in the house, but no one lives there now. (Suzuki, Tr., 9/20/16, p. 32, l. 24 to p. 33, l. 1, p. 37 ll. 7-10.)

c. The dwellings and a small pool receive County water. (Suzuki, Tr., 9/20/16, p. 36, ll. 8-11.) (Hui/MTF and OHA: FOF C-272.)

d. Kaanapali Kai did not claim appurtenant rights nor participate in the provisional approval process. (SWUPA 2181, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 2.)

470. SWUPAs 2209/2210N—Vernon Bal

a. On April 23, 2009, Vernon Bal filed existing and new use SWUPAs for TMK No. (2) 3-4-007:042, a 0.33-acre property for which he requested 600 gpd of existing use for 0.28 acres of a yard and garden, and 1,800 gpd of new use for 0.006 acre for lo‘i kalo, applying Reppun’s high estimate of 300,000 gad. (SWUPA 2209, p. 2, table 1, p. 4, table 3; SWUPA 2210N, p. 2, table 1, p. 3, table 2.)

b. Bal claimed appurtenant rights and was granted provisional recognition by the Commission. (SWUPA 2209, p. 1; SWUPA 2210N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 2.)

c. Bal did not submit written testimony nor participate in the contested case hearing.

471. SWUPAs 2241/2242N—Mary Ann Velez (Higa)

a. On April 23, 2009, existing and new use SWUPAS were filed for TMKs No. (2) 3-4-004:016 (“Parcel 16”) and No. (2) 3-4-004:017 (“Parcel 17”) by Darrell Higa, who has since passed away. Mary Ann Velez’s mother, Perolina Domogma, is the majority owner of both parcels and Velez, who was Higa’s partner, has been managing the properties since Higa passed away. (Velez, WT, 2/3/16, ¶¶ 2-3.) (Hui/MTF and OHA: FOF B-138.)

b. Parcel 16 is 0.445 acre and Parcel 17 is 0.468 acre, a total of 0.913 acres, for which Velez requests existing use of an estimated 1,200 gpd for 0.22 acre on Parcel 16 and 0.17 acre on Parcel 17 for domestic agriculture and a new use of 138,000 gpd to return 0.46 acre to lo‘i kalo, based on Reppun’s high estimate of 300,000 gad. (*Id.*, ¶¶ 14-16; SWUPA 2241, p. 2, table 1, p. 4, table 3; SWUPA 2242N, p. 2, table 1, p. 3, table 2.)

c. Darrell Higa had claimed appurtenant rights and been granted provisional approval for both parcels. (SWUPA 2241, p. 1; SWUPA 2242N, p. 1; Provisional Order, Attachment C, Revised Exh. 7, pp. 2-3.)

d. Parcel 16 was directly fed by an ancient ‘auwai and lies within LCA 3339:2, confirmed by RP 6251, described as kalo land and 24 lo‘i. (*Id.*, ¶ 8; Exh. 2241-Velez-4.)

e. Velez states that Parcel 17 lies within LCA 2532:3, described as “taro mo‘o,” while provisional recognition stated that Parcel 17 lies within ‘āpana 4, which was a houselot. (*Id.*, ¶ 9; Exh. 2241-Velez-5-p. 6; Provisional Order, Exhibits, p. 56, Exh. 7.)

f. Velez states that what was surveyed as ‘āpana 4 in the LCA was actually described as ‘āpana 3 in the testimony and that “taro mo‘o” means “narrow strip of land in taro,” corresponding to the layout of her land in LCA 2532 compared to the layout of ‘āpana 4. Furthermore, a portion of the LCA states “Apana 5 Pahale,” which means “Parcel 5. Houselot.” Velez also states that it was not uncommon where a pō‘alima is between two ‘āpana and the pō‘alima is awarded to someone else, thus breaking one ‘āpana into two and causing a re-numbering of the parcels in the LCA. (*Id.*, ¶ 9; Exh. 2241-Velez-5-p. 2.)

472. SWUPA 2247/2248N—Jordanela Ciotti (Ince/Kinzer)

a. Jordanela Ciotti purchased TMK No. (2) 3-4-004:019 (“Parcel 19”) from the original applicants, who filed for existing and new use SWUPAs on April 23, 2009. (Ciotti, WT, 12/9/15, ¶ 1; SWUPA 2247, at 1; SWUPA 2248, at 1.) (Hui/MTF and OHA: FOF B-131.)

b. Ciotti requests recognition of appurtenant rights in the amount of 135,300 gpd and a permit for 18,805 gpd, of which 1,088 gpd was the existing use on April 30, 2008, using Reppun’s high estimate for lo‘i kalo of 300,000 gad and 2002 State of Hawai‘i Water System Standard for Maui County domestic cultivation of 3,000 gad. (*Id.*, ¶¶ 3, 11-13, 25.) (Hui/MTF and OHA: FOF B-132, B-135.)

c. Ciotti currently irrigates 0.1125 acre of her yard and non-commercial garden and an 18- by 6-foot lo‘i kalo of approximately 0.0025 acres, for which she estimates a total use of 1,088 gpd, 338 gpd for her yard and commercial garden (0.1125 acre x 3,000 gad) and 750 gpd for her lo‘i (0.0025 acre x 300,000 gad). (*Id.*, ¶¶ 11, 13-14.) (Hui/MTF and OHA: FOF B-135.)

d. She requests an additional 17,717 gpd: 16,530 gpd (300,000 gad x 0.0551 acre) to restore a 60- x 40-foot lo‘i on approximately 0.0551 acre and 1,187 gpd (0.3957 acre x 3,000 gad) to irrigate grass and non-commercial crops throughout the remainder of her property, or 0.3957 acre. (*Id.*, ¶¶ 16-19.) (Hui/MTF and OHA: FOF B-136.)

e. However, the 0.3957 acre for which she requests additional water must include the 0.1125 acre she is already irrigating, because Parcel 19 is only 0.451 acres, and 0.0025 acre is her existing 18- by 6-foot lo‘i kalo and she proposes to restore 0.0551 acre (60- by 40-foot lo‘i kalo), which together total 0.0576 acre, leaving a remainder of 0.3934 acre.

f. So Ciotti’s request for additional water to irrigate grass and non-commercial crops should have been applied to 0.2809 acres, not to 0.3957 acres.

g. Parcel 19 is 0.451 acres, and includes LCA 3209:4, confirmed by RP 7893, consisting of approximately 0.23 acres. The records state that there were five lo‘i kalo, without reference to any other use. The Commission provisionally approved appurtenant rights. (*Id.*, ¶¶ 5-6; Exh. 2247-Ciotti-1, at 1; Exh. 2247-Ciotti-2, at 1; Provisional Order, Attachment C, Revised Exh. 7, p. 3.) (Hui/MTF and OHA: FOF B-133 to B-134.)

h. Ciotti requests recognition of 135,300 gpd in appurtenant rights, based on Reppun's highest estimate for her 0.451 acres (0.451 acre x 300,000 gad). (*Id.*, ¶ 8.) (Hui/MTF and OHA: FOF B-132.)

i. However, only 0.23 acres are derived from LCA 3209:4, so even using Reppun's highest estimate, her request for appurtenant rights should have been 69,000 gpd (0.23 acres x 300,000 gad).

473. SWUPAs 2245/2246N—Greg Ibara

a. Greg Ibara filed existing and new use SWUPAs on April 23, 2009, for TMK No. (2) 3-4-004:020 ("Parcel 20"), which he purchased in 1998. (Ibara, WT, 12/9/15, ¶ 1.) (Hui/MTF and OHA: FOF B-125.)

b. Parcel 20 is 1.171 acres, for which he requests recognition of appurtenant rights in the amount of 351,300 gpd (1.171 acres x 300,000 gad), using Reppun's high estimate of 300,000 gad. (*Id.*, ¶¶ 7-8.) (Hui/MTF and OHA: FOF B-128.)

c. Again using Reppun's high estimate of 300,000 gad, he estimates his existing use to irrigate 0.007 acre of lo'i kalo at 2,100 gpd (0.007 acre x 300,000 gad), and requests an additional 6,000 gpd to restore additional lo'i on 0.02 acres (0.02 acres x 300,000 gad). (*Id.*, ¶¶ 9-12.) (Hui/MTF and OHA: FOF B-128 to B-129.)

d. Parcel 20 is comprised of portions of two LCAs: LCA 2621, confirmed by RP 3214, and LCA 3233:2, confirmed by RP 7559. Records describe these kuleana as mo'o kalo, without referencing any other land use. Physical features, including land slope and proximity to an 'auwai intake and pō'alima, further supports that these lands were cultivated in lo'i. The Commission provisionally approved appurtenant rights for these LCAs. (*Id.*, ¶¶ 5-6; Exhs. 2245-Ibara-2, -3; Provisional Order, Attachment C, Revised Exh. 7, p. 3.) (Hui/MTF and OHA: FOF B-126 to B-127.)

c. Waihe'e Ditch after Intake on Waikapū Stream

474. After the intake on Waikapū Stream, the remaining SWUPAs are:

475. SWUPA 2203—Maui Tropical Plantation

a. On April 24, 2009, Maui Tropical Plantation ("MTP") filed an existing use SWUPA for TMK No. (2) 3-6-005:007 ("Parcel 7"), a 59.054-acre parcel for which it requested an average metered use of 124,532 gpd by trickle drip or sprinklers:

1. 82,332 gpd for 40 acres of rotating row crops at an average of 2,058 gad;
2. 36,000 gpd for 15 acres of landscaping at an average of 2,400 gad; and
3. 6,200 gpd for 4 acres of ornamental and nursery plants at an average of 1,550 gad.

(SWUPA 2203, p. 2, table 1, p. 3, table 2, p. 4, table 3.) (Waikapu Properties/MTP: FOF 9-11.)

b. A comparison of metered uses versus Hawai'i Department of Agriculture "HDOA") Water Use Guidelines is as follows:

	<u>MTP</u>	<u>HDOA</u>
agricultural crop irrigation	2,058 gad	4,400-6,700 gad
Landscape irrigation	2,400 gad	4,000-6,000 gad
Ornamental/Nursery irrigation	1,550 gad	3,700-6,000 gad

(MTP Opening Brief, p. 8, Exh. D.) (Waikapu Properties/MTP: FOF 12.)

c. In 2006, MTP was acquired through various entities by Michael Atherton, the managing general partner of several related entities, including but not limited to Waikapu Properties, MTP, and Waiale 905 Partners, LLC. (Atherton, WT, 2/5/16, ¶ 5.) (Waikapu Properties/MTP: FOF 28.)

1. The deed to MTP contained a reservation of water rights recorded on March 24, 1983. (Exh. OHA-16, Exhibit A at 16, ¶ 6.) (Hui/MTF and OHA: FOF C-53.)

d. Waikapu Properties and its related entities also have SWUPAs 2205, 2356, 2297N, and 3472N, *supra*, FOF 429, which receive waters from Waikapū Stream through the South Waikapū Ditch. SWUPA 2205 is for the 'Īao-Waikapū fields formerly cultivated for sugar cane by HC&S, which has been returned to Waikapu Properties, *supra*, FOF 25.

e. MTP was built by C. Brewer & Company more than 30 years ago, which Atherton has transformed into an eco-tourism site, emphasizing agriculture, farm to table values, and other tourism education activities. It currently employs over 50 local residents on property and is also home to a variety of local businesses, including Maui Tropical Plantation, Mill House Restaurant (using farm-fresh ingredients from MTP lands), Maui Chef's Table, Mill House Café

(featuring 100% Maui coffees), Moku Pua Soap Factory, Ron L. Jewelers, Flyin' Hawaiian Ziplines, Maui Ziplines, and Kumu Farms. (*Id.*, ¶ 6; MTP Opening Brief, p. 8.) (Waikapu Properties/MTP: FOF 20.f.)

f. Although MTP's SWUPA did not claim appurtenant rights, it had filed for provisional approval of appurtenant rights for 11 LCAs and 8 land grants and had been provisionally approved for 9 LCAs and one land grant. (SWUPA 2203, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 4.)

g. On September 20, 2016, Mr. Atherton testified that his entities were no longer asserting claims for appurtenant rights, except as necessary to secure drinking water for cattle grazing above the Waihe'e Ditch, which would be pursued under the other SWUPAs and reserved the right to re-submit a permit application for appurtenant rights for other parcels at a later date. (Atherton, Tr., 9/20/16, p. 43, ll. 1-8.) (Waikapu Properties/MTP: FOF 33.)

476. SWUPA 2186—MMK Maui

a. On April 22, 2009, MMK Maui, LP ("MMK") filed an existing use SWUPA for TMK Nos. (2) 3-6-004-010, -011, -012, and -014 for 1,292,704 gpd (1.29 mgd) of metered use on two golf courses, the King Kamehameha and Kahili Courses. (SWUPA 2186, p. 2, table 1, p. 3, table 2.) (MMK: FOF 1, 4-5.)

b. The golf courses encompass approximately 350 acres, on which water delivered by WWC is used to irrigate 302 acres of Bermuda grass and 3 acres of miscellaneous landscape. (Carroll, WT, 2/5/16, ¶ 17; SWUPA 2186, p. 3, table 2.) (MMK, FOF 3.)

c. MMK states that, based on water meter readings from June 2006 through December 2015, as well as further considerations regarding the weekly, monthly, and yearly variability of water usage over a 9.5-year period and the actual need to adequately and efficiently water the golf courses, it currently requests 1.25 mgd.³¹ (Dooge, Tr., 7/22/16, p. 19, ll. 11-19; Bechert, Tr., 7/22/16, p. 49, ll. 3-11.) (MMK: FOF 6.)

d. The average for the period, June 2006 through December 2015, was 1.037 mgd, ranging from a low of 0.129 mgd in March 2014 to a high of 2.485 mgd in April 2007.

1. Per calendar year, water use ranged from 1.4 mgd in 2007 to 0.66 mgd in 2014.

³¹ The amount stated in MMK's application of 1.29 mgd over 305 acres (302 acres of Bermuda grass and 3 acres of miscellaneous landscape) equals 4,230 gad while the currently requested amount of 1.25 mgd over 305 acres equals 4,098 gad.

2. Typically, water needs decreased during the winter months and increased during the summer months. For example, in January and February 2011, the courses used 21.9 and 18.7 mgd, respectively, whereas from June to September 2011, the courses used 41.1 (June), 38.4 (July), 39.9 (August), and 41.4 (September) million gallons, respectively.
3. MMK states that the water usage in 2014 and 2015 decreased to 0.66 mgd and 0.70 mgd, respectively, without any significant changes to water-saving measures or mitigation efforts, and that the reason was unusual weather patterns that caused more frequent and consistent rain throughout the majority of months during years 2014 and 2015. Conversely, huge rainfall followed by several weeks of no rain may result in the same quantity of rainfall, but there is still a need to irrigate within a week after the rainfall, so the need for irrigation is still greater where the rainfall is less frequent and not as consistent, even though total rainfall is the same.

(Bechert, WT, 2/5/16, ¶¶ 25-27, 30; Bechert, Tr., 7/22/16, p. 53, ll. 7-20, p. 61, l. 23 to p. 62, l. 19, p. 62, l. 25 to p. 63, l. 4; Exh. 2186-MMK-4.) (MMK: FOF 27-33.)

e. MMK believes that the average of 1.037 mgd over the last 9.5 years is more indicative of the average usage it may see over the next ten years, but an amount based on average use does not necessarily meet the needs of the golf courses for drier months, and that in regions where the annual rainfall is highly variable, the estimate should be based on one of the drier years rather than an average over the years.

1. 2007 was one of the highest yearly average usage at 1.34 mgd.
2. Between 2006 and 2015, the driest month in each year averaged 1.53 mgd.

(Bechert, WT, 2/5/16, ¶ 31; Exh. 2186-MMK-4.) (MMK: FOF 33-34.)

f. Therefore, MMK's revised request of 1.25 mgd is approximately the mid-point between the historical 9.5-year usage of 1.037 mgd and the driest month average over the same period of 1.53 mgd. 1.25 mgd closely compares to the 1.20 mgd 12-month moving average from April 2008 to March 2009, the period immediately preceding the filing of the SWUPA on April 22, 2009; and the 1.29 mgd 12-month moving average from May 2007 to April 2008 that

was used to calculate the existing use as of April 30, 2008. (Exhs. OHA-49, 2186-MMK-4.) (MMK: FOF 37-38.)

g. MMK also noted that even if it requested more water than what it actually needed, due to the nature of golf course irrigation in which too little water is harmful and too much water is not desired due to suboptimal and soggy/wet golfing conditions, it would not benefit from using more water than what it needed. Proper irrigation requires an adequate amount of water at the time water is needed on a daily/weekly/monthly basis. Without the necessary and adequate amount of irrigation water, the golf courses will not be able to adequately maintain the turf grass. (Beckert, WT, 2/5/16, ¶¶ 32, 34; Carroll, Tr., 7/22/16, p. 70, ll. 7-14; Beckert, Tr., 7/22/16, p. 50, l. 16 to p. 51, l. 1; Exh. 2186-MMK-3, p. 435.) (MMK: FOF 39.)

h. The golf courses have a water-delivery agreement with WWC for a maximum of 4 mgd and paid approximately \$4 million for the perpetual delivery of up to 2.7 mgd.

1. Water from the Waihe'e Ditch is pumped into Kahili Course Reservoir 4, then pumped into a distribution system consisting of hundreds of individually controlled sprinkler heads to irrigate the Kahili Course and, through a transfer pump, pumped from Reservoir 4 into King Kamehameha Course Reservoir 18, where the water is pumped through a distribution system again consisting of hundreds of individually controlled sprinkler heads to irrigate the King Kamehameha Course.
2. Daily water needs is communicated to WWC, who controls and releases on a weekly or so basis the amount of pumped water from the Waihe'e Ditch based on the immediate needs of the golf courses. WWC takes meter readings weekly or so and regulates the pumps that allow water into the reservoirs at the golf courses.

(Carroll, WT, 2/5/16, ¶ 6-7; Dooge, WT, 2/5/16, ¶12, Beckert, WT, 2/5/16, ¶¶ 16, 23; Beckert, Tr., 7/22/16, p. 48, l. 14 to p. 49, l. 2; Exh. 2186-MMK-2.) (MMK: FOF 11-12, 18, 25.)

- i. Steps taken to mitigate water use include:
 1. The two reservoirs are rubber-lined to minimize water leakage and designed to capture, hold, and store water (including rainwater).

2. Both courses utilize Bermuda turf grass, commonly known as a drought-resistant species of grass.
3. Staff manually monitor and adjust the duration of water usage on a daily basis, as a fully automatic irrigation system that does not require periodic programming and maintenance does not exist.
4. More than 5,000 sprinkler heads are used on the golf courses, in which the duration and volume of water released can be individually controlled for efficient use of water. A central control system gives staff full control and monitoring of the sprinkler heads remotely, for daily/hourly access and control of watering.
5. Soil moisture levels are assessed daily by visual assessment of the turf and soil, including the use of soil probes to measure moisture conditions.
6. Irrigation is done mainly in the evenings and early mornings, which are cooler and less dry periods.

(Bechert, WT, 2/5/16, ¶¶ 18-22, 24; Bechert, Tr., 7/22/16, p. 45, l. 11 to p. 46, l. 5, p. 46, ll. 6-16, p. 47, ll. 5-13, p. 48, ll. 1-13, p. 50, ll. 16-23; Exh. 2186-MMK-3, pp. 383, 407, 432-434.) (MMK: FOF 20-24, 26.)

j. Alternatives:

1. In January 2016, Scott Carroll of MMK met with Jeffrey Pearson, the Deputy Director of CWRM, to inquire whether it would be a reasonable alternative for MMK to drill its own well and was informed that the possibility was not promising. A&B and Atherton were also looking to drill wells and dedicate them to the County. The 3 mgd sustainable yield of the Waikapū Aquifer would be consumed entirely by these wells. Moreover, Pearson believed that MMK could not use potable water for golf courses. (Carroll, WT, 2/5/16, ¶ 12; Carroll, Tr., 7/22/16, p. 67, ll. 6-12.) (MMK: FOF 45.)
2. Also, in January 2016, Carroll met with Mike Atherton, owner of MTP, which is located near the golf course, to inquire whether water might be available for MMK from Atherton's wells. Atherton was not sure how much water was going to be available, how much he would need for his own purposes, when the water would be available for use, or what the quality of the water would be and that he was conducting tests to clarify those issues (see 2205, 2356/2357N/3471N, & 3472N—Waikapu Properties). Carroll concluded that well water was not a reasonable alternative

today but may come available in the distant future. (Carroll, WT, 2/5/6, ¶¶ 10-11; Carroll, Tr., 7/22/16, p. 67, l. 6 to p. 68, l. 1, p. 73, l. 7 to p. 74, l. 2.) (MMK: FOF 43-44.)

3. In January 2016, Carroll also contacted Derek Takahashi, Recycled Water Coordinator and Project Manager, Wastewater Reclamation Division of the County of Maui, regarding the possibility of reclaimed water. Mr. Takahashi stated that the closest wastewater reclamation facility is located in Kahului near Kanahā Beach Park and that the County does not have any recycled water distribution systems for Central Maui where the golf courses are located. There is also no distribution system from the more distant Kīhei Wastewater Facility to Central Maui. (Carroll, WT, 2/5/6, ¶ 13; Carroll, Tr., 7/22/16, p. 68, l. 17 to p. 69, l. 15, p. 71, ll. 16-24, p. 79, l. 20 to p. 80, l. 7; Exh. 2186-MMK-11.) (MMK: FOF 46.)

- k. MMK did not claim appurtenant rights. (SWUPA 2186, p. 1; Provisional Order, Attachment C, Revised Exh. 7, p. 5.)

477. SWUPA 2151—Pohakulepo Recycling LLC

- a. On April 24, 2009, Pohakulepo Recycling, LLC filed an existing use SWUPA for TMK No. (2) 3-6-04:007 for the metered use of 8,555 gpd for dust control on 14.8 acres and rock crushing operations on 0.1 acre. (SWUPA 2151, p. 2, table 1, p. 4, table 3.)

- b. The water is necessary to meet Hawai‘i Department of Health and Land Use Commission permits and Maui County permits to control fugitive dust emissions. (Jacintho, WT, 7/22/16, ¶ 5.)

- c. The quarry serves the entire West Maui communities as well as several central Maui communities and has eight employees with a combined annual salary of over \$900,000. (*Id.*, ¶ 7.)

- d. Reclaimed water has been considered but because no pipeline exists from the County of Maui, it is deemed unfeasible. The cost of putting in a transmission pipe would be several million dollars, would require an Environmental Impact Statement and numerous grants of easements. There is also no county water meter nor service line to the property. (*Id.*, ¶ 8.)

- e. Pohakulepo Recycling, LLC did not claim appurtenant rights nor participate in the provisional approval process. (SWUPA 2151; Provisional Order, Attachment C, Revised Exh. 7, p. 5.)

478. SWUPA 2272—Nobriga’s Ranch

- a. On April 27, 2009, Nobriga’s Ranch filed an existing use SWUPA for TMK No. (2) 3-6-001:018. (SWUPA 2272.)
- b. Metered use on 100 acres of the 257.784 property averaged 25,776 gpd for pasture grass. (SWUPA 2272, p. 2, table 1, p. 4, table 3.)
- c. Nobriga’s Ranch neither claimed appurtenant rights nor participated in the provisional recognition process. (SWUPA 2272, p. 1; Provisional Order, Attachment C, Revised Exh. 7. p. 5.)
- d. Nobriga’s Ranch also provided no further information and did not participate in the contested case hearing.

ii. Spreckels Ditch

479. On the Spreckels Ditch, after the intakes from South Waiehu Stream and Wailuku River and the Hopoi Ditch from the Waihe’e Ditch, the only remaining SWUPA is Mahi Pono at the terminus of what used to be the Waiale Reservoir.

480. SWUPA 2206-Mahi Pono

- a. On April 22, 2009, HC&S filed existing use SWUPA 2205 for 10.58 mgd for 1,491 acres of its leased ‘Īao-Waikapū fields and existing use SWUPA 2206 for 36.29 mgd for 4,408 acres of its Waihe’e-Hopoi fields. (SWUPA 2206, Addendum, p. 1.) (HC&S: FOF 2.)
- b. On April 17, 2014, the Commission approved and adopted the 2014 Mediated Agreement, *supra*, FOF 16, in which the Commission had found that HC&S’s reasonable daily water use requirements for sugar cane cultivation was 5,408 gad or 6.06 mgd on 1,120 cultivated acres of the ‘Īao-Waikapū fields and 5,958 gad or 21.75 mgd on 3,650 cultivated acres of the Waihe’e-Hopoi fields. (CCH-MA06-01 D&O: COL 92-93; 2014 Mediated Agreement: FOF 44-45.)
- c. On January 6, 2016, A&B announced it would close HC&S by the end of the year and transition to diversified agriculture, *supra*, FOF 22.
- d. On February 5, 2016, HC&S filed its opening brief and direct witness statements in support of SWUPA 2205 and SWUPA 2206³² and requested 4.84 mgd for 1,120

³² Throughout the contested case proceedings, HC&S mistakenly referred to its application for the Waihe’e-Hopoi fields as SWUPA 2205 and for the ‘Īao-Waikapū fields as SWUPA 2206,

acres of the ‘Īao-Waikapū fields and 19.48 mgd for 3,650 acres of the Waihe‘e-Hopoi fields. The request for 19.48 mgd for the Waihe‘e-Hopoi fields included an allocation of 17.33 mgd for agricultural irrigation and 2.15 mgd for system losses for those portions of the West Maui Ditch System that are operated and controlled by HC&S. (Volner, WT, 2/5/16, at 1. Hew, WT, 2/5/16, at 1.) (HC&S: FOF 6.)

e. The amended request was based on HC&S’s intended transition from sugarcane cultivation to bioenergy tropical grasses, which estimated that such grasses required approximately 80% to 85% of the water requirement for biannually-harvested sugarcane, based on a preliminary assessment arising out of HC&S’s participation in a Department of Defense study of biofuel production. Using the Commission’s finding that sugarcane cultivation required 5,408 gad on the ‘Īao-Waikapū fields and 5,958 gad on the Waihe‘e-Hopoi fields, HC&S’s estimates of irrigation requirements for bioenergy tropical grasses is 4,326 gad for the 1,120 acres of the ‘Īao-Waikapū fields, or 4.84 mgd, and 80% of 5,958 gad, or 4,776 gad for the 3,650 acres of the Waihe‘e-Hopoi fields, or 17.33 mgd.³³ Because of higher than normal rainfall during 2016, HC&S was unable to conduct appropriate irrigation trials to accurately determine the actual water duty for sorghum. (Volner, WT, 2/5/16, §§ 10-12; Volner, WT, 5/31/16, § 3.)

f. On July 25, 2016, HC&S gave notice that it will not pursue the SWUPA for the ‘Īao-Waikapū fields, because it would no longer lease those lands. Waikapu Properties, LLC, the owner of those fields, will continue to pursue SWUPA 2205 in place of HC&S, *supra*, FOF 25.

g. At the time of the hearing, HC&S’s³⁴ diversified agriculture plans for some of the approximately 35,000 acres of its former sugar lands in Central Maui were premature, its plans for the 3,650 acres of the Waihe‘e-Hopoi fields are further along, because: 1) its large expanse of relatively flat and rock-free terrain has been identified as the fields most

when it should have been the other way around. On February 3, 2017, HC&S filed a Correction of SWUPA numbers requesting official notice of the inadvertent switch in SWUPA numbers.

³³ The actual number should have been 17.43 mgd (4776 gad x 3,650 acres = 17.43 mgd).

³⁴ On May 14, 2019, HC&S filed a joint motion with Mahi Pono, LLC for withdrawal and substitution of parties for SWUPA 2206 because HC&S had transferred its interest in the Waihe‘e-Hopoi Fields to Mahi Pono. In this decision, Mahi Pono will be substituted in place of HC&S when referring to SWUPA 2206 and future operations in the Waihe‘e-Hopoi fields. HC&S will be identified when referring to historical usage. It is assumed that HC&S’s projected future uses remain the same for Mahi Pono.

suitable for growing bioenergy crops, which would be mechanically planted and harvested; and 2) HC&S planned to cultivate these bioenergy crops itself rather than try to identify someone else who would do it. (Volner, WT, 5/31/16, § 5.) (HC&S: FOF 13.)

h. “Bioenergy crops” include a variety of crops that can support biogas or biofuel production, including, but not limited to, fuel for jets, marine and land vehicles, and to generate electricity. These bioenergy crops may include, but are not limited to, annual seed crops, such as soybean, safflower, sunflower and canola; perennial oil-bearing trees, such as jatropha, kukui and pongamia; and tropical grasses, such as energy canes, banagrass, sorghum, hemp and new hybridized perennial tropical grasses. (Volner, WT, 2/5/16, § 2; Volner, Tr., 7/29/16, p. 160, ll. 4-15.) (HC&S: FOF 14.)

i. The transition from sugar cane to bioenergy crops has several advantages. Because of the similarities between the two, Mahi Pono may be able to take advantage of existing infrastructure and equipment and adapt management practices (e.g., integrated pest management) to new crops. (Volner, WT, 5/31/16, § 3.) (HC&S: FOF 15.)

j. Mahi Pono plans to have a mix of bioenergy crops that will be rotated over the course of a few seasons. The primary focus for the Waihe‘e-Hopoi fields will be on tropical grasses to take advantage of the large expanse of contiguous, relatively flat fields that are conducive to the efficient planting and harvesting of these types of crops. The bioenergy crop most likely to initially replace sugar cane is sorghum, which is in the same family as sugar cane. Sorghum was selected as an initial “anchor” crop because of the experience gained by HC&S’s participation in a five-year, \$10 million Department of Defense study of biofuel production started in 2010. Sorghum was one of the crops included in the study, and HC&S participated in crop and harvest trials of different varieties of energy crops and also participated in anaerobic digestion yield-testing on a 6-acre plot, gaining preliminary experience with the requirements, including water requirements and irrigation practices, for growing some of these energy crops. (Volner, WT, 2/5/16, § 3; Volner, WT, 5/31/16, § 3.) (HC&S: FOF 16-17.)

k. HC&S states that further research and testing are necessary for growing these energy crops on a large scale and has been capturing cost data, testing farming methods at scale, and refining the economic model based on a 50-acre trial fields. In mid-2016, HC&S planted an additional 200 acres, including approximately 150 acres in sorghum and 25-30 acres of various oil seed crops, to validate bioenergy crop density, irrigation layout, per-acre yield in

different soil types, water demand, and field-scale costs. Testing on larger acreages allows Mahi Pono to better understand actual yields, input costs and the market for bioenergy crops. (Volner, WT, 2/5/16, § 3; Volner, WT, 5/31/16, § 3.) (HC&S: FOF 18-19.)

l. Sugar cane was a two-year crop, meaning that it was planted and harvested on a two-year cycle. The energy crops mature in a much shorter period of 60 to 105 days. Multiple harvests from a single planting are possible with some crops, such as sorghum, but other crops are truly annual crops, providing only one harvest per planting. (Volner, Tr., 7/29/16, p. 160, l. 20 to p. 161, l. 6.) (HC&S: FOF 20.)

m. Sorghum ratoons, and multiple harvests are possible without the need for replanting. In mid-2016, one of the sorghum trial plots was in its fourth harvest cycle and continued at productive levels over the multiple harvests. Sorghum matures in three to four months, yielding up to four harvests a year. Yields, however, appear to decrease during the shorter-day-length period from November through February, and, therefore, Mahi Pono is looking for varieties that will yield better during the fall and winter periods. (Volner, WT, 5/31/16, § 3.) (HC&S: FOF 21.)

n. In addition to sorghum trials, HC&S was working on cover crops with mixtures including tillage radishes, clovers, mung beans, rye grass, turnips, buckwheat, and sunn hemp, where appropriate. The focus is to increase soil organic matter, improve soil tilth and water-holding capacity, and increase beneficial insect populations to reduce the need for pesticide spraying. At any one time, approximately ten percent of the Waihe'e-Hopoi fields will be in cover crops. Cover crops will also be utilized as borders around the fields of bioenergy crops. After the completion of bioenergy crops cycles lasting multiple years, the entire field will be planted in cover crops to protect against erosion and to replenish the soil. Cover crops are expected to be planted in the entire field for approximately a three-month period as part of a three-year crop rotation cycle to minimize pests, control weeds, improve soil health and reduce tillage requirements. (Volner, WT, 5/31/16, § 4; Volner, Tr., 7/29/16, p. 160, ll. 14-24.) (HC&S: FOF 22.)

o. At any one time, 10 percent of the 3,650 acres are expected to be in cover crops. Bioenergy tropical grasses' water requirements are 4,776 gad, but cover crops' requirements should be less, assessed at the same rate as diversified agriculture, 2,500 gad. Therefore, for the ten percent of 3,650 acres in cover crops, the water requirement would be

912,500 gpd (365 acres x 2,500 gad). For the remaining 3,285 acres of grasses, the water requirement would be 15.69 mgd (3,285 acres x 4,776 gad). The total water requirement for all of the 3,650 acres would be 16.60 mgd. Mahi Pono's irrigation requirements are reduced from 17.43 mgd to 16.60 mgd.

p. The fields will not lie fallow in the sense that there would be nothing planted for a period of time. The Waihe'e-Hopoi fields are subject to very high winds, and without cover crops, soil erosion would be a serious problem. (Volner, Tr., 7/29/16, p. 161, l. 14 to p. 162, l. 12.) (HC&S: FOF 23.)

q. All the lands that comprise the Waihe'e-Hopoi fields are classified as Agriculture under the state land-use classification and zoned for agricultural use, and a majority of the 3,650 cultivated acres have been designated Important Agricultural Lands ("IAL") pursuant to HRS Ch. 205, Part III. (Volner, WT, 2/5/16, § 5; Volner, Tr., 7/29/16, p. 159, ll. 10-15.) (HC&S: FOF 48-49.)

r. System losses:

1. The portions of the West Maui Ditch System that are owned and controlled by Mahi Pono includes approximately 10.51 miles of open, lined and unlined ditches and pipelines and two reservoirs. (Hew, WT, 2/5/16, § 1.) (HC&S: FOF 36.)
2. Evidence presented in CCH-MA06-01 D&O, included HC&S's estimate that it loses 6-8 mgd through seepage from Waiale Reservoir, depending on the level of the reservoir, and 3 to 4 mgd from seepage throughout the rest of its ditch and reservoir system. The Commission limited system losses to 2.0 mgd "for purposes of the restoration of stream flows under an amended IIFS," and reaffirmed those losses in the 2014 Mediated Agreement without prejudice to the rights of any party and of the Commission to revisit the issue in the context of any proceeding involving a WUPA by HC&S. (CCH-MA06-01 D&O: FOF 122; 2014 Mediated Agreement: COL 16.) (HC&S: FOF 37-40.)
3. To address leakage from the unlined Waialae Reservoirs, HC&S analyzed several loss-mitigation options and determined that bypassing the reservoirs would be the most cost-effective way of mitigating losses. Thus, Mahi Pono no longer uses the Waiale reservoirs for water storage and bypasses them with a concrete-lined bypass. (Hew, Tr., 7/29/16, p. 101, ll. 12-25.) (HC&S: FOF 45.)

4. Mahi Pono cannot eliminate all of its reservoirs to reduce system losses, because the ditch and reservoir system is essential to the continued irrigation of its agricultural lands. (Hew, WT, 5/31/16, § 2.) (HC&S: FOF 47.)
5. Mahi Pono requests 2.15 mgd for system losses, based on calculations for seepage rates using the National Engineering Handbook, which is published by the Soil Conservation Service of the US. Department of Agriculture (“SCS-USDA”), plus an average daily evaporation rate of 0.40 acre-inches. The Handbook is a proxy to having to actually measure evaporation and seepage losses from each part of the system. Based on these calculations, losses ranges from 2.15 to 4.20 mgd. (Hew, WT, 25/16, §§ 1-2; Hew, Tr., 7/29/16, p. 101, ll. 1-11, p. 104, l. 6 to p. 121, l. 21.) (HC&S: FOF 41.)

s. Alternative sources:

1. Well No. 7:
 - a. Brackish water from Well No. 7 (USGS No. 16) was the primary source of irrigation for the Waihe‘e-Hopoi fields from 1927 until additional surface water became available when Brewer ceased its sugar operations in the 1980s and the Waihe‘e and Spreckels Ditch flows previously used by Brewer were allowed to flow uninterrupted into the Waiale Reservoir. (CCH-MA06-01 D&O: FOF 263, 494.) (HC&S: FOF 59.)
 - b. CCH-MA06-01 D&O had determined that Well No. 7 was a practicable alternative source of 9.5 mgd, but after the remand from the Hawai‘i Supreme Court, HC&S spent \$1,658,369 to upgrade Well No. 7 by installing a second booster pump (Pump 7D) and a 4,000-foot pipeline extending to the Waihe‘e Ditch, enabling HC&S to pump a maximum of 18.5 mgd on a sustained daily basis. The Commission concluded in the 2014 Mediated Agreement that up to 18.5 mgd was a practical alternative, without prejudice to revisiting the issue in any future proceeding involving a WUPA by HC&S. (2014 Mediated Agreement: FOF 50, COL 14.) (HC&S: FOF 60.)
 - c. Mahi Pono maintains that it would be uneconomical, at least for the short term to pump 18.5 mgd, or even 9.5 mgd, on a sustained basis, until crops can be grown on a commercial scale and producing revenues that can cover costs. As a byproduct of sugar cane cultivation, electricity

was generated by burning bagasse which operated hydropower turbines on the East Maui Ditch system, generating enough electricity to be self-sufficient and have excess power to sell to Maui Electric Company. At least for the short-term, generating electricity will be limited to its hydroelectric facilities, which depend on the East Maui Irrigation system water historically producing a maximum of 6 MWH of power. The amount of power that can be generated in the future will depend on the IIFS amendments currently before the Commission. Ideally, Mahi Pono will be able to utilize some of the biofuel stock that it grows to generate electricity for its own use, but even if that were to happen, it will be several years before biofuel stock becomes available in sufficient quantities, and Mahi Pono would have to renovate or rebuild its power plant to be able to utilize new fuel sources. (Volner, WT, 2/5/16, §§ 6-7.) (HC&S: FOF 61-64.)

- d. Mahi Pono estimates that it would cost \$178 (based on MECO's rate of \$0.22 per kwh) to pump 1 million gallons from Well No. 7 to the Waihe'e Ditch. 18.5 mgd would amount to more than \$1.2 million annually, and 9.5 mgd would cost more than \$600,000 annually. No income is derived from the crops in their research and testing phase, and until more data is collected for its economic model, Mahi Pono would not know what water costs can be borne and states that given the current stage of the energy crop industry in Hawai'i and the lack of agronomic data, Mahi Pono maintains that Well No. 7 cannot be viewed as a practicable alternative source during the period of transition from sugar to diversified agriculture. (Volner, WT, 2/5/16, §§ 6-7.) (HC&S: FOF 65-67.)
- e. The Kahului Aquifer, from which Well No. 7 draws brackish water, has a sustainable yield of only 3 mgd based on natural recharge (Water Resources Protection Plan).
 - i. Between 1927 and 1985, when HC&S pumped an average of about 21 mgd from Well No. 7, both HC&S and Brewer were cultivating sugar cane, largely by furrow irrigation, which meant there was significant irrigation recharge.
 - ii. Between 1993 and 2007, the Waihe'e-Hopoi fields received approximately 39 mgd from the Waiale Reservoir, and HC&S had reported its existing use in 2008 under SWUPA 2206 as 36.29 mgd.

However, in 2010, the Commission had determined that 21.75 mgd was the irrigation requirement on 3,650 cultivated acres of the Waihe'e-Hopoi fields. Therefore, despite the use of drip irrigation, irrigation on the Waihe'e-Hopoi was significantly greater than what was required.

- iii. After 2010, when HC&S upgraded Well No. 7 and increased pumping to approximately 18.5 mgd, surface water imports decreased as a result of the amended IIFS. To date, well data shows no significant adverse impact to the aquifer due to the increased pumping and decrease in surface water imports. However, 2014, 2015, and the first half of 2016 have been relatively wet years, which may have mitigated the impact of increased withdrawals.
- iv. Thus, data collected thus far is not sufficient to assess the long-term impact on the Kahului Aquifer of increased pumping from Well No. 7 and decreased surface water imports. According to Nance, WCEIC's expert in water resource engineering, the closure of HC&S's sugar plantation substantially reduces the amount of recharge to the aquifer and, therefore, the viability of Well No. 7 needs to be pragmatically determined as the years roll by.

(CCH-MA06-01 D&O: FOF 494-495, COL 92-93; 2014 Mediated Agreement:

FOF 44-45; SWUPA 2206, Addendum, p. 1; Hew, WT, 2/5/16, § 3; Nance, Tr., 9/20/16, p. 9, ll. 9-13, p. 16, l. 11 to p. 17, l. 8.) (HC&S: FOF 68-72.)

2. Mahi Pono's 'Īao Tunnel well:

- a. Well No. 5330-02 develops ground water which is discharged into the Spreckels Ditch between Mahi Pono's intakes on South Waiehu Stream and Wailuku River, for which Mahi Pono has WUP No. 691, an interim permit with an allocation of 0.1 mgd from 'Īao Tunnel. (CCH-MA06-01 D&O: FOF 154-155; Hew, WT, 2/5/16, § 2.) (HC&S: FOF 73.)
- b. When the interim permit was issued on October 28, 2010, 'Īao Tunnel was not separately metered, and one of the conditions of the interim permit was that HC&S measure the amount collected, and, within five years the

Commission was to make a final determination of the amount of the allocation. HC&S installed a flow meter in February 2011, has been submitting monthly ground water reports to the Commission, and in June 2015, requested by letter that the interim permit be converted to a full and final permit, which to date has not been brought before the Commission. (Hew, WT, 2/5/16, § 3.) (HC&S: FOF 74-75.)

- c. Provided that the Commission approves Mahi Pono’s request to convert the interim permit to a permanent permit with an allocation of 0.1 mgd, Mahi Pono states that it is a practicable alternative source to Nā Wai ‘Ehā surface waters. (HC&S: FOF 76.)
3. In addition to Well No. 7, there are 13 other brackish water wells that supplement surface water from the East Maui Irrigation System for Mahi Pono’s East Maui fields, which is the subject of a parallel contested case before the Commission. These wells are alternative sources to the East Maui streams. (CCH-MA13-01. *See* “Hearings Officer’s Amended Proposed Findings of Fact, Conclusions of Law, & Decision and Order,” August 2, 2017.)
 4. Mahi Pono had utilized wastewater from its Puunene Mill to irrigate certain fields, none of which were part of the Waihe‘e-Hopoi fields. Moreover, Puunene Mill has shut down with the cessation of sugar cultivation. (CCH-MA06-01 D&O: FOF 505; Volner, WT, 2/5/16, § 8.) (HC&S: FOF 80.)
 5. Ola Wai 1 and 2 proposed wells:
 - a. These wells have not been drilled, which A&B is working with the County of Maui on their possible development. If they are drilled, they will be connected to MDWS’s system for domestic and municipal uses and not for agricultural irrigation. (Volner, 5/31,16, § 11.) (HC&S: FOF 84.)
 6. Recycled wastewater and desalination:
 - a. These two possible alternatives have been addressed in Section I.G.2—Possible Alternatives Shared by Applicants and specifically by Mahi Pono. (HC&S: FOF 77-79, 80.)
- t. Mahi Pono states that offstream water use will vary from day to day throughout the year, so there will be times when IIFS requirements are met, when the needs of other surface water permittees are met, and there will still be water available for other

reasonable-beneficial offstream uses. Because Mahi Pono is the last user on the Spreckels Ditch, its use of whatever water is available in the Spreckels Ditch at its terminus would not impact any other permittee's allocation. Very few permittees take water from the Waihe'e Ditch after the Hopoi Chute drops water from the Waihe'e Ditch into the Spreckels Ditch near its terminus. Mahi Pono proposes that it and other down-ditch permittees should be able to coordinate their day-to-day water requirements such that Mahi Pono, from time to time, will be able to utilize water in the Waihe'e Ditch without negatively impacting down-ditch permittees' allocations. (HC&S's Proposed FOF, COL, and D&O, p. 21.)

u. Appurtenant rights were not claimed under either SWUPAs 2205 or 2206. (SWUPA 2205, p. 1; SWUPA 2206, p. 1.)

II. CONCLUSIONS OF LAW

A. The State Constitution, the Public Trust Doctrine, and the State Water Code

1. Constitutional Mandates

1. The legislature shall provide for a water resources agency which, as provided by law, shall set overall water conservation, quality and use policies; define beneficial and reasonable uses; protect ground and surface water resources, watersheds and natural stream environments; establish criteria for water use priorities while assuring appurtenant rights and existing correlative and riparian uses and establish procedures for regulating all uses of Hawaii's water resources. Art. XI, § 7, Hawai'i State Constitution.

2. Traditional and customary Hawaiian rights are personal rights "customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights." Haw. State Constitution, Article XII, § 7.

2. There are no Absolute Priorities under the Public Trust

3. The public trust doctrine and the Hawai'i Constitution require the Commission both to protect natural resources and to promote their use and development. "The state water resources trust thus embodies a dual mandate of 1) protection and 2) maximum reasonable and beneficial use." (*In re Water Use Permit Applications ("Waiāhole I")*, 94 Hawai'i 97, 139, 9 P.3d 409, 451 (2000).)

4. The purposes or protected uses of the water resources trust are: 1) maintenance of waters in their natural state, 2) domestic water use of the general public, in particular, protecting an adequate supply of drinking water, 3) the use of water in the exercise of Native Hawaiian and traditional and customary rights, and 4) the reservation of water enumerated by the State Water Code. (*Waiāhole I*, 94 Hawai'i at 136-37, 9 P.3d at 448-58; *In re Wai'ola o Moloka'i, Inc. ("Wai'ola")*, 103 Hawai'i 401 at 431, 83 P.3d 664 at 694 (2004).)

5. "In this jurisdiction, the water resources trust also encompasses a duty to promote the reasonable and beneficial use of water resources in order to maximize their social and economic benefits to the people of the state...(We) have indicated a preference for accommodating both instream and offstream uses where feasible..(and) reason and necessity dictate that the public trust may have to accommodate offstream diversions inconsistent with the

mandate of protection, to the unavoidable impairment of public instream uses and values.” (*Waiāhole I*, 94 Hawai‘i at 139, 141-42, 9 P.3d at 451, 453-54.)

6. “Given the diverse and not necessarily complementary range of water uses, even among public trust uses alone, (the Court) consider(s) it neither feasible nor prudent to designate absolute priorities between broad categories of uses under the water resources trust. There are no absolute priorities between uses under the water resources trust...(and) the Commission inevitably must weigh competing public and private water uses on a case-by-case basis, according to any appropriate standards provided by law.” (*Waiāhole I*, 94 Hawai‘i at 142, 9 P.3d at 454.)

7. There are two sections under the Code that might be interpreted to give absolute priority to appurtenant rights (HRS § 174C-63³⁵) and Native Hawaiian water rights (HRS § 174C-101³⁶), but the public trust is a state constitutional doctrine that “continues to inform the Code’s interpretation, define its permissible ‘outer limits,’ and justify its

³⁵ §174C-63 - Appurtenant rights. 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. A permit for water use based on an existing appurtenant right shall be issued upon application. Such permit shall be subject to sections 174C-26 and 174C-27 and 174C-58 to 174C-62.

However, section 174C-27(a) requires that the Commission certify that the use is reasonable-beneficial.

³⁶ §174C-101 - Native Hawaiian water rights.

(c) Traditional and customary rights of appurtenant tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778 shall not be abridged nor 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.

However, in laying out a three-pronged test to protect traditional and customary practices, such protection is not absolute but required to the extent feasible, which the Court has defined as “a balancing of the benefits and costs” and not whether the action is “capable of achievement.” (*Ka Pa ‘akai O Ka ‘aina v. Land Use Commission*, 94 Hawai‘i 31, at 47, 7 P.3d 1068, at 1084 (2000); (*Waiāhole I*, at 141 n. 39; 9 P.3d, at 453 n. 39.)

existence...(T)he Code does not supplant the protections of the public trust doctrine.” (*Waiāhole I*, 94 Hawai‘i at 132, 9 P.3d at 444.)

8. “(A)ny balancing between public and private purposes begins with a presumption in favor of public use, access and enjoyment...(I)t effectively prescribes a ‘higher level of scrutiny’ for private commercial uses.” (*Waiāhole I*, 94 Hawai‘i at 142, 9 P.3d at 454.)

9. The public trust creates an affirmative duty of the Commission “to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible³⁷.” (*Waiāhole I*, 94 Hawai‘i at 141, 9 P.3d at 453.)

10. The Court has distilled the following principles to assist agencies in the application of the public trust doctrine:

- a. The agency’s duty and authority is to maintain the purity and flow of our waters for future generations and to assure that the waters of our land are put to reasonable and beneficial use.
- b. The agency must determine whether the proposed use is consistent with trust purposes:
 - i. the maintenance of waters in their natural state;
 - ii. the protection of domestic water uses of the general public;
 - iii. the protection of water in the exercise of Native Hawaiian and traditional and customary rights; and
 - iv. the reservation of water enumerated by the State Water Code.
- c. The agency is to apply a presumption in favor of public use, access, enjoyment, and resource protection.
- d. The agency shall evaluate each proposal for use on a case-by-case basis, recognizing that there can be no vested rights in the use of public water.
- e. If the requested use is private or commercial, the agency should apply a high level of scrutiny.

³⁷ The Court refers to the term “feasible” as a balancing of benefits and costs and not to mean “capable of achievement.” (*Waiāhole I*, 94 Hawai‘i, at 141 n. 39; 9 P.3d, at 453 n. 39.)

- f. The agency should evaluate the proposed use under a ‘reasonable and beneficial use’ standard, which requires examination of the proposed use in relationship to other public and private uses.

(Kauai Springs, Inc. v. Planning Commission of the County of Kaua‘i, 133 Hawai‘i 141, 174, 324 P.3 951, 984 (2014) (“Kauai Springs”).)

11. Applicants have the burden to justify the proposed water use in light of the trust purposes.

- a. Permit applicants must demonstrate their actual needs and the propriety of draining water from public streams to satisfy those needs.
- b. Applicants must demonstrate the absence of a practicable alternative water source.
- c. If there is a reasonable allegation of harm to public trust purposes, then they must demonstrate that there is no harm in fact or that the requested use is nevertheless reasonable and beneficial.
- d. If the impact is found to be reasonable and beneficial, the applicant must implement reasonable measures to mitigate the cumulative impact of existing and proposed diversions on trust purposes, if the proposed use is to be approved.

(Kauai Springs, 133 Hawai‘i at 174-75, 324 P.3 at 984-85.)

3. The State Water Code Does Not Supplant the Public Trust Doctrine

12. Hui/MTF and OHA, citing the State Water Code, assert that “(a)ccording to HRS 174C-101, the right to cultivate kalo on one’s own land, regardless of whether the land has appurtenant rights...’shall not be abridged or denied by the Water Code’...There is no separate inquiry into whether the exercise of that right is reasonable - beneficial, the legislature has already made that determination.” (Bunn, Tr., July 11, 2016, p. 20, ll. 3-16.)

13. To the contrary, “(t)he state has certain powers and duties which it cannot legislatively abdicate. This court has held that the (public trust) doctrine would invalidate such measures, sanctioned by statute but violative of the public trust (*reference omitted*).” (*Waiāhole I*, 94 Hawai‘i at 130-31, 9 P.3d at 442-43.)

14. The public trust is a state constitutional doctrine which “continues to inform the Code’s interpretation, define its permissible ‘outer limits,’ and justify its existence...(T)he Code does not supplant the protections of the public trust doctrine.” (*Waiāhole I*, 94 Hawai‘i at 133, 9 P.3d at 445.)

15. “This Court has described the public trust relating to water resources as the authority and duty ‘to maintain the purity and flow of our waters for future generations and to assure that the waters of our land are put to reasonable and beneficial uses.’” [*Emphases in original.*] (*Waiāhole I*, 94 Hawai‘i at 138, 9 P.3d at 450.)

16. “‘Reasonable-beneficial use’ means the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is both reasonable and consistent with the state and county land use plans and the public interest.” (HRS § 174C-3.)

B. Burden of Proof

1. Interim Instream Flow Standards (IIFS)

17. "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.'" (*Nā Wai ‘Ehā*, 128 Hawai‘i at 258; 287 P.3d at 159, citing *In re Water Use Permit Applications* (“*Waiāhole II*”), 105 Hawai‘i 1, 11, 93 P.3d 643, 653 (2004)); and HRS §174C-71(2)(A).)

18. In setting an IIFS, the Commission "need only reasonably estimate instream and offstream demands." (*In re ‘Īao Ground Water Management Area High-Level Surface Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihe‘e River and Waiehu, ‘Īao, and Waikapu Streams Contested Case Hearing* (“*Nā Wai ‘Ehā*”), 128 Hawai‘i 228, 258, 287 P.3d 129, 159 (2012)); *Waiāhole I*, 94 Hawai‘i at 155 n. 60, 9 P.3d at 467 n. 60.)

19. "In requiring the Commission to establish instream flow standards at an early planning stage, the Code contemplates the designation of the standards based not only on scientifically proven facts, but also on future predictions, generalized assumptions, and policy judgments." (*Waiāhole I*, 94 Hawai‘i at 155, 9 P.3d at 467.)

20. “Where the Commission’s decision making evinces a ‘high 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.” (*Nā Wai ‘Ehā*, 128 Hawai‘i at 253, 287 P.3d at 154, citing *In re Wai ‘ola o Moloka ‘i, Inc.* (“*Wai ‘ola*”), 103 Hawai‘i 401, 422, 83 P.3d 664, 685 (2004).)

2. Water-Use Permit Applications (WUPAs)

21. As this contested case also incorporates water-use permit applications, “permit applicants have the burden of proof of justifying their proposed uses.” (*Waiāhole I*, 94 Hawai‘i at 160, 9 P.3d at 472.)

22. The applicant has the burden of proof for a water-use permit to “make any withdrawal, diversion, impoundment, or consumptive use of water in any designated water management area.” (HRS § 174C-48(a).)

23. To obtain a permit, the applicant shall establish that the proposed use of water:

- a. Can be accommodated with the available water source;
- b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
- c. Will not interfere with any existing legal use of water;
- d. Is consistent with the public interest;
- e. Is consistent with state and county general plans and land use designations;
- f. Is consistent with county land use plans and policies; and
- g. 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).)

C. Native Hawaiian Traditional and Customary Rights

24. Article 12, § 7 of the Hawai‘i Constitution states that: “The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua‘a tenants who are descendants of native Hawaiians

who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.”

25. HRS § 1-1 states that: “The common law of England, as ascertained by English and American decisions, is declared to be the common law of the State of Hawaii in all cases, *except as* otherwise expressly provided by the Constitution of the laws of the United States, or by the laws of the State, or fixed by Hawaiian judicial precedent or *established by Hawaiian usage.*” [*Emphasis added.*]

26. In Hawai‘i, HRS § 1-1 had codified the doctrine of custom, and the statute was derived from a law passed on November 25, 1892 (L1892, Chapter 57, § 5). Thus, in Hawai‘i, “the Hawaiian usage mentioned in HRS § 1-1 is usage which predated November 25, 1892.” (*State v. Zimring* (I), 52 Haw. 472, 475, 479 P.2d 202, 204 (1970).)

27. In developing the law on traditional and customary Native Hawaiian practices, Hawai‘i courts have interpreted the constitutional and statutory language as requiring consideration of the facts and circumstances surrounding the conduct. (*State v. Pratt* (“*Pratt II*”), 127 Hawai‘i 206, 214, 277 P.3d 300, 308 (2012).)

28. The consideration of the facts and circumstances of specific cases has shown an increased understanding of Native Hawaiian traditional and customary practices and its application to current situations. (*Kalipi v. Hawaiian Trust Company, Ltd.* (“*Kalipi*”), 66 Haw. 1, 656 P.2d 745 (1982); *Pele Defense Fund v. Paty* (“*PDF*”), 73 Haw. 578, 837 P.2d. 1247 (1993); *Public Access Shoreline Hawaii v. Hawai‘i County Planning Comm’n* (“*PASH*”), 79 Hawai‘i 425, 903 P.2d 1246 (1995); *State v. Hanapi* (“*Hanapi*”), 89 Hawai‘i 177, 970 P.2d 485 (1998); *Ka Pa‘akai O Ka ‘Aina v. Land Use Commission* (“*Ka Pa‘akai*”), 94 Hawai‘i 31, 7 P.3d 1068 (2000); *State v. Pratt* (“*Pratt I*”), 124 Hawai‘i 329, 243 P.3d 289 (App. 2010).)

For example:

1. In *Kalipi*, gathering rights were limited to “lawful occupants” of an ahupua‘a, meaning persons within the ahupua‘a in which they seek to exercise gathering rights. *Kalipi*’s claim was as an owner of land inside the ahupua‘a but who resided outside the ahupua‘a, and his claim was denied. He had provided no evidence for a claim as one who resided outside the ahupua‘a, but the Court addressed this issue in *PDF*, *infra*.
2. In *PDF*, the Court held that native Hawaiian rights may extend beyond the ahupua‘a in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in

this manner. The Court in *PDF* held that, if it can be shown that the subject area was a traditional gathering area utilized by tenants of the abutting ahupua‘a and if PDF members can show that they are such tenants and did engage in such practices in the subject area, than they may have a right to enter those lands to exercise their traditional practices.

3. *Ka Pa ‘akai*’s members averred that they, their ancestors, friends and families have crossed an 1800-1801 lava flow to gather salt for subsistence.
4. In *Pratt I*, defendant Pratt testified that a land grant sold to the Kupihea family for part of the ahupua‘a for the Kalalau Valley was his family’s land, is where he spends time in the park, and believes he is responsible for the Kalalau Valley because his ancestors are buried there.

29. The requirements for persons claiming a constitutional right to engage in traditional and customary practices are as follows:³⁸

- a. Qualifying as a Native Hawaiian refers to “those persons who are ‘descendants of native Hawaiians who inhabited the islands prior to 1778’ and who assert otherwise valid³⁹ customary and traditional rights”; and
- b. (O)nce a (person) qualifies as a native Hawaiian, he or she must then establish that his or her claimed right is constitutionally protected as a customary or traditional native Hawaiian practice.”
- c. In other words, the right has two parts: a) that it is a customary or traditional native Hawaiian practice; and b) that the practice is constitutionally protected.

(*Hanapi*, 89 Hawai‘i at 186-187, 970 P.2d at 495-496.)

30. There are four elements essential to such practices: 1) the purpose is to fulfill a responsibility related to subsistence, cultural or religious needs of the practitioner’s family; 2) the practice handed down was an established native Hawaiian custom or tradition prior

³⁸ There are three factors and the third, referring to entry on private property, is that a party claiming his or her conduct is constitutionally protected must also prove that the exercise of the right occurred on undeveloped or less than fully developed property.

³⁹ The Court has consistently recognized that “the reasonable exercise of ancient Hawaiian usage is entitled to protection under Article XII, section 7 (emphasis in original).” *PASH*, 79 Hawai‘i at 442; 903 P.2d, at 1263.

to 1892; 3) the practice is not for a commercial purpose; and 4) the manner in which the practice is conducted is consistent with tradition and custom and conducted in a respectful way. *Pratt I*, 124 Hawai‘i at 352-55, 243 P.3d at 312-15.)

31. In reaffirming that Hawaiian usage must predate November 25, 1892, the Hawai‘i Supreme Court also required that “it is established that the *application of a custom has continued in a particular area* (emphasis added).” (*PASH*, 79 Hawai‘i at 442, P. 2d at 1263 .)

32. The custom does not need to have been continuous since November 25, 1892 and can be established from expert testimony and kama‘āina witness testimony. (*PASH*, 79 Hawai‘i at 450, 903 P.2d at 1271; *Hanapi* (, 89 Hawai‘i at 187, n. 12, 970 P.2d at 495, n. 12.)

33. “In order to meet his or her burden, a practitioner must bring forward evidence that the practice handed down was an established native Hawaiian custom or tradition prior to 1892.” (*Pratt I*, 124 Hawai‘i at 313, 243 P.3d at 353.)

34. In order for the State to fulfill its constitutional duty to protect Native Hawaiian traditional and customary practices, the Commission has the duty to determine:

- a. 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;
- b. the extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed actions; and
- c. the feasible⁴⁰ action, if any, to be taken by the Commission to reasonably protect Native Hawaiian rights if they are found to exist. (*Ka Pa ‘akai*, 94 Hawai‘i at 47, P.3d at 1084.)

35. Note that here, as with the application of the public trust doctrine, *supra*, COL 5-6, 8-9, there are no absolute rights, but a balancing of costs and benefits on a case-by-case basis. There is always the “attempt to balance the protections afforded to native Hawaiians

⁴⁰ The Court has defined “feasible” as a “balancing of the benefits and costs” and not whether the action is “capable of achievement.” Note that this is the same balancing of benefits and costs that the Court has laid out under the public trust doctrine (*See Waiāhole I*, 94 Hawai‘i at 141 n. 39; 9 P.3d at 453 n. 39.)

in the State, while also considering countervailing interests.” *Pratt II*, 127 Hawai‘i at 215, 277 P.3d at 309.

D. Appurtenant Rights

36. WWC asserts that the Commission engaged in illegal rulemaking without administrative rules for appurtenant rights, and that the applications for appurtenant rights should be deferred and stayed pending adoption and publication of administrative rules. (WWC: COL 41-47.)

37. To the contrary, the Court has stated that “we have adopted the general rule that the choice between proceeding by general rule or by individual ad hoc litigation is one that lies primarily in the informed discretion of the administrative agency. One useful distinction between rulemaking and adjudication is that the former affects the rights of individuals in the abstract, while the latter operates concretely upon individuals in their individual capacity (*internal marks and references omitted*).” (*Waiāhole I*, 94 Hawai‘i at 169, 9 P.3d at 481.)

38. The process for adjudication of appurtenant rights in this case was not illegal rulemaking.

1. Applications Addressed in this Contested Case Hearing

39. On December 31, 2014, the Commission issued its Provisional Order on recognition of appurtenant rights, the first of a two-step process to recognize and quantify appurtenant rights of lands in Nā Wai ‘Ehā. The quantification would be done along with the surface WUPA process, which, along with amending the IIFS, are the subjects of this contested case hearing. (FOF 19-20.)

40. Provisional recognition was not an exclusive determination of all claimed and unclaimed appurtenant rights, because appurtenant rights were preserved in 1978 by Article XI, § 7 of the Hawai‘i Constitution and in 1987 by HRS § 174C-63 of the State Water Code. Thus, at the conclusion of this contested case hearing, claims not recognized or not addressed may still be brought before the Commission.

41. The Provisional Order also did not rule out additional information being brought before the Commission. According to the December 31, 2014 Provisional Order: “First, the Commission will provisionally rule on the issue whether particular parcels have valid claims for Appurtenant rights, subject to the rights of land owners to file or submit additional information at a later time. Second, following this provisional order (and at a later time), the

Commission will take up the question of how much water (or a duty of water) a particular parcel has a claim to use (*emphases added*).” (Provisional Order, p. 2.)

42. This contested case hearing is that “later time,” with the remaining question being what is encompassed in the phrase “additional information.”

43. “For the provisional recognition phase, it was only necessary to document certain words that indicated water might have been used on the LCA.” (Minute Order #1, p. 3, June 25, 2015.)

44. The Provisional Order was “subject to a) the right of those Applicants who requested more time to file additional material by January 31, 2015; b) the need of the Commission staff to update information that was or may be received in the future; and c) later determination by the Commission. (Provisional Order, p. 3.)

45. In this contested case hearing, participants submitted a wide range of “additional information,” including:

- a. Additional information on approved LCAs for provisionally recognized TMKs (e.g. SWUPA 2342-Higashino);
- b. Substitute LCA(s) for provisionally recognized TMKs (e.g. SWUPA 2342-Higashino);
- c. New LCA(s) for provisionally recognized TMKs (e.g., SWUPA 2313-Kana);
- d. New LCA(s) on provisionally denied TMKs (e.g., SWUPA 2342-Higashino);
- e. New TMKs by parties with another provisionally recognized TMK (e.g. SWUPA 2706N-HILT);
- f. New TMKs by parties not previously recognized for other TMKs (e.g., SWUPA 2275-Sevilla); and
- g. New appurtenant rights submission by parties who did not participate in the provisional approval process (e.g., SWUPA 2283-Pang).

46. “The purpose of the due process hearings (on provisional recognition) was to afford an opportunity for Appurtenant rights applicants, those with legal interests in the claimed parcels, and those claiming to be adversely affected legally by an Application to provide

information and evidence on the Application with regard to whether a given parcel of land had a claim to Appurtenant rights.” (Provisional Order, pp. 1-2.)

47. During the contested case hearing, many appurtenant rights applicants who had submitted additional information presented themselves at the hearing, gave oral testimony, and were available for cross examination. For those who were not available for direct testimony and cross-examination, the Hearings Officer had ruled that their appurtenant rights claims were denied without prejudice and that they could refile at a later time.⁴¹ (Tr., 7/11/16, p. 5, l. 9 to p.6, l. 13.)

48. Parties did not raise objections to—and cross-examined—witnesses who testified on appurtenant rights that went beyond additional information on approved LCAs for provisionally recognized TMKs. Only WWC raised an objection—not during the contested case hearing but in its proposed Conclusions of Law and on a different issue; i.e., that the Commission should have deferred and stayed applications for appurtenant rights, pending adoption and publication of administrative rules, an assertion that the Commission has addressed in COL 36-37, *supra*.

49. The Commission therefore concludes that due process has been satisfied, and all claims for appurtenant rights presented during the course of this contested case hearing shall be addressed.

2. TMKs Derived from Multiple LCAs

50. “(A)ppurtenant water rights are rights to the use of water utilized by parcels of land at the time of their original conversion into fee simple (emphasis added).” (*Reppun v. Board of Water Supply* (hereinafter, “*Reppun*”), 65 Haw. 531, 551, 656 P.2d 57, 71 (1982).)

51. Present-day parcels of land, or TMKs, are often comprised of fractions of multiple LCAs, which often had uses of water of varying degrees at the time of the Māhele.

52. If the letter of the law is followed, such appurtenant rightsholders: a) would have to exercise their rights on their already small TMKs according to the water rights associated with each fraction of their TMKs, making their appurtenant rights practically

⁴¹ SWUPA 4445N-SPV Trust’s written testimony was submitted for the record without objection.

unusable; or b) would ignore the letter of the law, in turn making enforcement of the law by the Commission extremely difficult or practically unenforceable.

53. For such TMKs, the Commission rules that appurtenant rights based on multiple LCAs for one TMK may be exercised on the entire TMK, subject to the following:

- a. This exception applies only to a TMK or a TMK that has other TMKs entirely within it. In the latter case, the collective waters may be used anywhere on the TMKs. If an applicant has two or more TMKs, the exception applies only to the TMK at issue and the permitted water for that TMK cannot be distributed to the other TMKs. The Commission recognizes that there are applicants with small, adjacent TMKs who intend to use water across the TMKs, and enforcement of the rule against use on one TMK from water with appurtenant rights on an adjacent TMK may be difficult if not impossible to enforce.
- b. In the case of TMKs larger than a few acres, the Commission will make a case-by-case determination as to whether the appurtenant right is limited to those portions of the TMK that are derived from the relevant LCAs.

3. Quantification of Appurtenant Rights

54. Appurtenant rights are not personal rights of the owner but are attached to the land and for a specific quantity of water:

- a. “Whenever it has appeared that a *kuleana* or perhaps other piece of land was, immediately prior to the grant of an award by the Land Commission, enjoying the use of water for the cultivation of taro or for garden purposes or for domestic purposes, the land has been held to have had appurtenant to it the right to use the quantity of water which it had been customarily using at the time named (*emphasis added*).” (*Territory v. Gay*, 31 Haw. 376, 383 (1930), *aff’d* 52 F.2d 356 (9th Cir. 1931), *cert. denied* 284 US. 677 (1931).)
- b. “(A)ppurtenant water rights are rights to the use of water utilized by parcels of land at the time of their original conversion into fee simple (*emphasis added*).” (*Reppun*, 65 Haw. at 551, 656 P.2d at 71.)

55. “(R)equiring too great a degree of precision in proof would make it all but impossible to even establish such rights...(W)hen...the same parcel of land is being utilized to cultivate traditional products by means approximating those utilized at the time of the Māhele, there is sufficient evidence to give rise to a presumption that the amount of water diverted for

such cultivation sufficiently approximates the quantity of the appurtenant water rights to which that land is entitled.” (*Reppun*, 65 Haw. at 554, 656 P.2d at 72.)

56. In order to quantify the appurtenant water rights, two expert testimonies have been offered into evidence: 1) the proportion of the kuleana that may have been in wetland taro at the time of the Māhele; and 2) the amount of water needed for growing wetland taro. (FOF 150-198.)

a. Water Use at the Time of the Māhele

57. Lilikalā Kame‘eleihiwa, an expert on the Māhele and Māhele records, provided rebuttable presumptions and guiding principles that she stated are the best available evidence for: 1) whether a kuleana award included land for growing of wetland taro, unirrigated pasture or dryland crops (kula), and/or a house lot (pahale); and 2) an estimate of the proportion of the kuleana that was in each of these three categories of land use. (FOF 150-171.) (Hui/MTF and OHA: FOFOHA: FOF B-24 - B-36.)

58. It is hard to say that there would be some quantification of water for a kula or a pahale. In the old days, generally you would wait for rain to fall from the sky. (FOF 170-171.)

59. Kame‘eleihiwa states that Māhele records sometime provide the number of lo‘i being cultivated on a kuleana or ‘āpana, but generally do not specify the size of the lo‘i. Her opinion is that without knowing the size of the lo‘i, which can vary among kuleana, the number of lo‘i is not a useful guide for estimating the acres in cultivation, but it is useful to indicate the existence and general extent of wetland kalo cultivation within a kuleana or ‘āpana. (FOF 159.) (Hui/MTF and OHA: FOFOHA: FOF B-7.) However, under her rebuttable presumptions and guiding principles, the mention of only a few or even a single lo‘i in a kuleana award could lead to the conclusion that the entire kuleana was in wetland taro at the time of the Māhele. (FOF 161, 163-165.)

60. Despite its shortcomings, particularly its tendency to overestimate the acres in lo‘i kalo at the time of the Māhele, Kame‘eleihiwa’s method will be applied in all cases in the interests of equitable determinations of appurtenant rights across all claimants.

61. One of Kame‘eleihiwa’s presumptions is that all pōalima should be presumed to be cultivated in kalo, but expressed opinions only on kuleana awards and not on konohiki awards and government grants. (FOF 151-154, 164.)

- a. When a pōalima is included within a LCA but identified as part of a konohiki award or government grant, it will be excluded from the evaluation of the kuleana award.
- b. When a pōalima is included within a LCA but not identified as part of a konohiki award or government grant, it will be included in the evaluation of the kuleana award.
- c. Konohiki awards and government grants will be excluded from the evaluation of appurtenant rights, because Kame‘eleihiwa had no opinion on their use of water at the time of the Māhele nor how to evaluate the proportion of the award or grant that might have been in lo‘i kalo. (FOF 151-155.)
- d. Moreover, without identification of lands in lo‘i kalo versus the acreage of the entire parcel, it may not be possible to reach a conclusion on the percent of the award or grant that had water rights, or the amount of award might be miniscule. For example, the Spreckels grant can be identified as consisting of 24,000 acres, but the amount of land in lo‘i kalo in ‘Īao Valley along ‘Īao and Kīnihāpai Streams, even though extensive, would comprise only a miniscule portion of the entire grant. (FOF 392 (SWUPA 2304—Division of State Parks).)

b. Current Irrigation Requirements

62. Paul Reppun, an expert on wetland taro cultivation, was of the opinion that current wetland taro requirements are between 100,000 to 300,000 gallons per acre per day (gad) of “new” water, which is water that can still serve the essential function of maintaining temperatures low enough to prevent crop failure due to rot and pests, and which has not been rendered useless for this cooling function by previous use in upstream lo‘i. In the warmer months of the year, and under a normal production system using lo‘i complexes without excess fallow land, the higher figure should be used. The lower end would apply, for example, if a farmer had only two lo‘i and kept one fallow. (FOF 178.)

63. Reasonable use is “such a quantity as is necessary for economic and efficient utilization.” (HRS § 174C-3.) The public trust resource of surface water is not intended

to maximize a farmer's yields and income, nor to substitute for good farming practices by increased irrigation flows.

64. Although Reppun maintains that his requirements of 100,000 to 300,000 gad reflect flowing water throughout the 14-15 month period from planting to harvest, in his testimony on the various stages of the crop cycle, flowing water is not required for a month after planting, for 2 to 5 months when fertilizing,⁴² plus additional time when weeding is required. (FOF 187-188, 190-191.) The maximum requirement of 300,000 gad would apply for a maximum of four months (June through October) and only for crops in the mature stage, when the crop is maturing and the leaf cover is shrinking down. (FOF 178, 181, 202.)

65. In the Commission's June 10, 2010 D&O, actual irrigation estimated at 130,000 to 150,000 gad were deemed adequate, if Reppun's upper requirements estimate of 300,000 gad was valid and that "(a)s a general average throughout Hawai'i no water is required to enter patches approximately 40-50 percent of the time, either because of cultural practices including planned resting or fallowing of patches." (CCH-MA06-01 D&O: FOF 330, COL 56.) In this contested case hearing, Reppun disputes the 40-50 percent estimate of no flows. (FOF 191.)

66. The Commission restates its estimate of lo'i kalo complex irrigation requirements as 150,000 gad, for the following reasons:

- a. From Reppun's own testimony, flowing water is not required for a month after planting, for 2 to 5 months when fertilizing, plus additional time when weeding is required (FOF 192.)
- b. Reppun's requirements at the upper end of his range—i.e., 300,000 gad—are based on maximum use of a taro complex to maximize yields and income, at the hottest time of the year, and for a maturing crop with decreased leaf cover. (FOF 180-181.)
- c. Reppun's requirements cover a large range—100,00 gad to 300,000 gad—yet the whole emphasis was on the highest estimate of 300,000 gad, with only passing reference to the lowest estimate of 100,000 gad. (FOF 178.)
- d. The reason for throughflows is to prevent crop failure due to rot and pests and to reduce the need for weeding. (FOF 178, 190.)

⁴² From a minimum of two weeks every two months for eight months, or two weeks x 4 = 8 weeks, or two months; to a maximum of two weeks every month for ten months, or two weeks x 10 = 20 weeks, or five months.

Farmers have additional methods to manage their crops, such as reducing excessive losses through leakage, growing taro less intensively and resting their fields, fallowing the lo'i and planting grass and sorghum to help kill organisms, and changing varieties of taro. (FOF 197, 210.)

- e. Increased yields of taro do not necessarily mean increased yields of good-quality taro. 100 pounds of good-quality taro may yield 90 pounds of poi, but 100 pounds of not-very-good-quality taro may yield only 60 pounds of poi. (FOF 180.)
- f. Reasonable use is the use of irrigation water "in such a quantity as is necessary for economic and efficient utilization." (HRS § 174C-3.) It is not reasonable to use public trust surface waters to maximize yields and profits, nor to substitute for good farming practices.

67. 200,000 gad is the mid-point of Reppun's irrigation requirements of 100,000 to 300,000 gad; however, minimum requirements for the 14-15 month growing season is not 100,000 gad, but essentially zero (0) for more than 3-6 months. (FOF 192.) Moreover, Reppun's irrigation requirements are predicated on maximizing yields and substitute in part for other management practices that can reduce crop failure due to rot and pests and to reduce the need for weeding. (FOF 178, 180, 190, 199, 210.)

68. The Commission concludes that 150,000 gad as the current general irrigation requirement for lo'i kalo is a reasonable use, or the quantity that is necessary for economic and efficient utilization. 150,000 gad is the average irrigation requirement over the 14-15 month period from planting to harvest.

69. In its 2010 Decision and Order, the Commission had proposed using losses instead of inflows for the permitted amounts. Losses were estimated at 15,000 gad to 40,000 gad, and flow-through requirements were estimated at 130,000 gad to 150,000 gad. (CCH-MA06-01 D&O: COL 54, 56.)

- a. The Commission's reasoning was as follows: "(w)hile the larger amounts of flow-through are reasonable for proper kalo cultivation, water use permits effectively remove these large amounts from all other uses; i.e., maintaining/restoring stream flows and other reasonable-beneficial offstream uses." (CCH-MA06-01 D&O: COL 59.)
- b. However, the Commission now concludes that inflows instead of estimated losses should be used as the permitted amounts.

1. In the USGS study, two measured inflows and outflows were as follows:
 - i. loss of 166,000 gad or 75 percent of the inflow of 221,000 gad; and
 - ii. loss of 114,000 gad or 58 percent of the inflow of 195,000 gad.

(FOF 208-210.)

2. Therefore, there is no basis to assume that losses would be about 10 percent of inflows (15,000 gad for an inflow of 150,000 gad) or even up to approximately 25 percent (40,000/150,000).
3. Moreover, there is no consistent pattern of return flows into the source ‘auwai, ditch, or stream/river after flowing through lo‘i complexes, so it is not known how much of outflows from lo‘i complexes would actually be available to other permittees.
4. Finally, how much water will actually be available will only be known after implementation of the permit system, and the priority categories established for the permits, *infra*, COL 174, will determine how much water will be allocated among permittees.

b. Irrigation at the time of the Māhele

70. “(When) the same parcel of land is being utilized to cultivate traditional products by means approximating those utilized at the time of the Māhele, there is sufficient evidence to give rise to a presumption that the amount of water diverted for such cultivation sufficiently approximates the quantity of the appurtenant water rights to which that land is entitled [*emphasis added*].” (*Reppun*, 65 Haw. at 554, 656 P.2d at 72.)

71. The amount of water attached to an appurtenant right is the amount utilized at the time of the Māhele. It does not change with changed circumstances. Thus, appurtenant rightsholders are not entitled to the amount of water required today to cultivate the same amount of lo‘i that was being cultivated at the time of the Māhele.

72. What quantity of water accompanies an appurtenant right?

- a. “It does seem a bit quaint in this age to be determining water rights on the basis of what land happened to be in taro cultivation in 1848. Surely any other system must be more sensible.

Nevertheless, this is the law in Hawaii, and we are bound to follow it.” (*McBryde v. Robinson* (“*McBryde*”), 54 Haw. 174, 189, n. 15, 504 P.2d 1330, 1340, n. 15 (1973), *aff’d on rehearing*, 55 Haw. 260, 517 P.2d 26 (1973), *appeal dismissed for want of jurisdiction and cert. denied*, 417 U.S. 962 (1974).)

- b. “(R)equiring too great a degree of precision in proof would make it all but impossible to even establish such rights.” (*Reppun*, 65 Haw. at 554, 656 P.2d at 72.)
- c. The amount of water utilized at the time of the Māhele was significantly less than what is required today, but there is no method to determine the specific quantity that reflects that difference.

73. As for irrigation at the time of the Māhele, Reppun provided two contrasting opinions:

- a. Speculating on what the irrigation requirements might have been at the time of the Māhele, he arrived at a quantity similar to what he identified as current requirements, 100,000 to 300,000 gad. (FOF 173-174.)
- b. However, Reppun also stated that “how much water taro needed at the time of the Māhele is almost an irrelevant question... We need more today than before to some degree... I think conditions for growing taro are different now than they were in ancient times... We have far more weeds than we used to have before... (s)o controlling the amount of water wasn’t as important, because when your lo‘i go dry, that’s when weeds germinate. So now we have a situation where if we let lo‘i go dry and those weeds germinate, we suffer enormously. We have had crops where we have to weed every couple of weeks... The other thing is our climate is changing... So the water in streams is declining naturally. As the flow of the streams declines, the temperature goes up a little bit. So our needs for flowing water is little bit higher than it used to be... water temperatures go up, air temperatures going to go up, soil temperatures going go up, and going to need to have more water to grow taro.” (FOF 175-177). (Hui/MTF and OHA: FOF B-56.)

74. The Commission concludes that 150,000 gallons per acre per day (gad) for lo‘i approximates the quantity of the appurtenant water rights to which that land is entitled.

d. Water for Ponds

75. While Lilikalā Kame‘eleihiwa, an expert on the Māhele and Māhele records, provided rebuttable presumptions and guiding principles for whether a kuleana award included land for growing of wetland taro, unirrigated pasture or dryland crops (kula), and/or a house lot (pahale), *supra*, FOF 150-171, she did not address water used for ponds at the time of the Māhele.

76. Ponds, as with lo‘i kalo, have some flow-through requirements as well as leakage and evaporation. Some applicants—e.g., SWUPA 2706N-HILT, SWUPA 2275-Sevilla—referenced ponds in their appurtenant rights requests, estimating use at 36,000 gad by referencing the Commission’s 1990 O‘ahu Water Management Plan. That Plan estimated water consumption for growing freshwater prawns at 14,000 gad to 36,000 gad, with some types of aquaculture using seawater or brackish water. (Hawai‘i Water Plan, O‘ahu Water Management Plan, DLNR, CWRM, p. 3-28 (March 1990).)

77. The Commission estimates water consumption for fishponds at the time of the Māhele as 14,000 gad, the low end of current estimated requirements for growing freshwater prawns.

4. Extinguishment of Appurtenant Rights

78. In *Reppun* both riparian and appurtenant rights were reserved to the grantor when title passed to the grantee. The Court ruled that riparian rights nevertheless passed with the title, because such rights had a statutory basis and were not subject to reservation by deed and were not the grantor’s to reserve. On the other hand, the Court ruled that there was nothing to prevent a transferor from preventing an appurtenant right to pass to the transferee, but appurtenant easements attach to the land and cannot exist or be utilized apart from that land. Therefore, the attempt to reserve the appurtenant right had the effect of extinguishing it. (*Reppun*, 65 Haw. at 550-52, 656 P.2d at 69-71.)

79. The Commission has the duty to adhere to *Reppun* “until the decision has been reversed or overruled by the court of last resort or altered by legislative enactment (emphasis added).” (*State v. Brantley*, 99 Hawai‘i 463, 483, 56 P.3d 1252, 1272 (2002).)

80. “Appurtenant water rights are incidents of land ownership” that constitute “an easement in favor of the property with an appurtenant right as the dominant estate.” (*Reppun*, 65 Haw. at 551, 656 P.2d at 70-71 (brackets omitted).)

81. “[T]he right to the use of water acquired as appurtenant rights may only be used in connection with that particular parcel of land to which the right is appurtenant.” (*McBryde*, 54 Haw. at 191, 504 P.2d at 1341.)

82. The Hawai‘i Supreme Court’s ruling in *McBryde* “prevents the effective severance or transfer of appurtenant water rights. This position is consistent with the general rule that appurtenant easements attach to the land to be benefitted and cannot exist or be utilized apart from the dominant estate.” (*Reppun*, 65 Haw. at 551-52, 656 P.2d at 71 (citing *Restatement of Property* § 487, cmt. b).)

83. A deed “that attempt[s] to reserve such right ha[s] the effect of extinguishing them,” because “there is nothing to prevent a transferor from effectively providing that the benefit of an easement appurtenant shall not pass to the transferee of the dominant estate.” (*Id.* at 552, 656 P.2d at 71 (quoting *Restatement of Property* § 487, cmt. b) (brackets omitted).)

84. The Court’s holding in *Reppun* that a reservation of appurtenant rights has the effect of extinguishing them is binding legal precedent that the Commission has the duty “to adhere to..., without regard to their views as to its propriety, until the decision has been reversed or overruled by the court of last resort or altered by legislative enactment.” (*State v. Brantley*, 99 Hawai‘i 463, 483, 56 P.3d 1252, 1272 (2002).)

85. Here, the reservations of appurtenant rights were established in private commercial transactions in which the parties agreed on the property rights to be transferred and the corresponding sale prices to be paid. (*See Atherton*, Tr. 7/29/16 at p. 88, l. 88 – p. 89, l. 13.)

86. Nothing in the Constitution or Code nullifies or prohibits the ability of private parties in private land transactions to “provid[e] that the benefit of an easement appurtenant shall not pass to the transferee of the dominant estate,” as the Court recognized based on basic property principles. (*Reppun*, 65 Haw. at 552, 656 P.2d at 71 (brackets omitted).)

87. While *Reppun* holds that such reservations have the effect of extinguishing appurtenant rights, certain parties argue that the *Reppun* precedent has been overridden by the 1978 constitutional amendments and/or the 1987 enactment of the Code.

88. The Hawai‘i Supreme Court issued its decision in *Reppun* in 1982, four years after the 1978 Constitutional Convention, and even cited the constitutional amendments made in article XI in its opinion, yet it did not indicate any limitation on its ruling regarding the

extinguishment of appurtenant rights resulting from the adoption of the new provisions pursuant to the 1978 Constitutional Convention. (*See Reppun*, 65 Haw. at 560 n. 22, 656 P.2d at 76 n. 22.)

89. Pursuant to *Reppun*, a reservation of water rights contained in any of the applicants' deeds had the effect of extinguishing those rights and those appurtenant rights will not be recognized in this proceeding.

E. Water Duty for Diversified Agriculture

90. “(W)ater use for diversified agriculture on land zoned for agriculture is consistent with the public interest. Such use fulfills state policies in favor of reasonable and beneficial water use, diversified agriculture, conservation of agricultural lands, and increased self-sufficiency of this state. See Haw. Const. art. XI, §§ 1 & 3; HRS § 174C-2(c).” (*Waiāhole I*, 94 Hawai‘i at 162, 9 P.3d at 474.)

91. The conversion from sugarcane to diversified agriculture irrigation is similar to the conversion that was taking place in leeward O‘ahu at the time of the Waiāhole Ditch Contested Case. Not only were IIFS to be determined but also water-use permit applications, including those for the fields that were being converted to diversified agriculture. One principal issue was determining the sufficiency of evidence to meet the water-use permit requirements for what were embryonic agricultural operations. (*Waiāhole I*, 94 Hawai‘i at 162, 9 P.3d at 474.)

92. “Although past water use is a good indication of actual water needs, it is not the only means of determining actual water needs. The Commission may issue permits based on approximate demand when there is uncertainty on actual uses in diversified agriculture. Any uncertainty in issuing permits for future actual water needs would be properly offset by the Water Commission’s condition that the applicant show actual use of the permitted amount within four years of the Decision and Order and the Water Commission’s mandate that any unused permitted water must be released into the streams.” (*Waiāhole I*, 94 Hawai‘i at 162, 9 P.3d at 473-474; *Waiāhole II*, 105 Hawai‘i at 22, 93 P.3d at 664.)

93. “(The Court in *Waiāhole II*) does not condone a blanket application of 2,500 gad to all future allotments of water for diversified agriculture. Instead, the Water Commission must continue making decisions based on the best information available.” (*Waiāhole II*, 105 Hawai‘i at 23, 93 P.3d at 665.)

94. However, in this contested case hearing on Maui, water use is quite different from the contrast between large- and small-scale farming on O‘ahu as reflected in *Waiāhole*, revealing no obvious differences between large- and small-scale farming, nor between types of crops. The least amounts in the examples of FOF 306, *supra*, are 300-400 gad for fruit trees, and the highest amounts are 4,000-18,000 gad for mixed uses, with the last amount, 18,000 gad, a clear outlier.

95. The Commission therefore does not adopt a higher amount for small farmers versus larger farmers but instead adopts the lesser amount, 2,500 gad, as the maximum irrigation requirement for both large- and small-scale agriculture of all types of crops, including nurseries, orchards, and golf courses. Applicants seeking lesser amounts will not have their permits increased to the maximum requirement of 2,500 gad, and applicants seeking larger amounts will be permitted at the maximum of 2,500 gad, except when the larger requests are justified. Standards such as HDOA’s for specific crops will not be accepted in lieu of specific justifications for amounts larger than 2,500 gad, because they have been shown to generally over-estimate irrigation requirements. (FOF 305-306.)

F. Alternative Sources

96. Permit applicants must demonstrate the absence of practicable mitigating measures, including the use of alternative water sources. (*Waiāhole I*, 94 Hawai‘i at 162, 9 P.3d at 473-74.)

1. Practicable Alternatives

97. An alternative source is practicable if it is available and capable of being utilized after taking into consideration cost, existing technology, and logistics in light of the overall water planning process. (*Waiāhole II*, 105 Hawai‘i at 19, 93 P.3d at 661.),

98. Hui/MTF and OHA contend that “(a)n applicant’s inability to afford an alternative source of water, standing alone, does not render that alternative impracticable. *Waiāhole II*, 105 Hawai‘i at 19, 93 P.3d at 661.” (Hui/MTF and OHA: COL 95.)

a. This interpretation does not reflect the ruling in *Waiāhole II*.

b. An alternative identified by the applicant which the Commission had considered for a proposed golf course was desalinating ‘Ewa Caprock water in the 900 to 1,100 ppm chlorides range to below 200 ppm. The Commission found that it would cost \$6 million in capital costs, with operating costs of \$3.00 per 1,000 gallons,

exclusive of land and easement acquisitions. The applicant had contended that the operating costs of \$3.00 per 1,000 gallons was not economically feasible, to which the Court concluded: “(I)n the instant case, (the applicant’s) ability to afford \$3.00 per 1,000 gallons, alone, would not render the alternative practicable, just as (the applicant’s) inability to afford \$3.00 per 1,000 gallons, alone, would not render the alternative impracticable (*emphases added*).”

The Court then went on to conclude that the Commission had properly concluded that this alternative was not practicably available after considering the costs of desalinating, construction, and operation, and the availability of leases and easements. (*Waiāhole II*, 105 Hawai‘i at 19, 93 P.3d at 661.) In other words, the Commission had not based its decision solely on operating costs that the applicant had claimed were not affordable but on an assessment of costs, technology, and logistics.

- c. Moreover, an alternative is not “practical” if it is capable of achievement at any cost. The Commission has the duty “to protect public trust uses whenever *feasible*,” which the Court has stated does not mean “capable of achievement” but a “*balancing of benefits and costs*.” (*Waiāhole I*, 94 Hawai‘i at 141 and n. 39; 9 P.3d at 453 and n. 39. [emphasis added]) Similarly, practicability must be determined after a balancing of benefits and costs after considering costs, technology, and logistics. So even if technology and logistics hurdles can be overcome, the Commission could still find the alternative not practicably available due to costs.

2. Not Required for Exercised Appurtenant Rights

99. Permits under appurtenant rights are exempt from the requirement that there are no practical alternatives, because appurtenant rights are constitutional rights to use surface water from a specific surface water source. (Haw. Const., Art. XI, § 7.)

3. Possible Alternative Sources Shared by Applicants

100. Many applicants who are subject to the alternative water source requirement, including applicants whose permit requests exceed the quantity of their appurtenant rights, are similarly situated in terms of both the identification and analysis of possible alternative sources. Thus, as in the case of the permit requirement that proposed uses are consistent with state and county plans and policies, *infra*, COL 149, once the identification and analysis are provided here, they are incorporated by reference in those SWUPAs. Applicants who have possible alternative sources not in common with other applicants will be addressed

individually. These include SWUPAs 2178/2179N—Maui County Department of Water Supply, SWUPAs 2356, 2297N, 3471N, and 3472N—Waikapu Properties, SWUPAs 2298/2299N—Varel and SWUPA 2206—Mahi Pono.

a. Other Public Trust Water Resources

101. “Considering whether alternative water resources are practicable innately requires prioritizing among public trust resources.” (*Waiāhole II*, 105 Hawai‘i at 20, 93 P.3d at 662.)

102. “‘Water’ or ‘waters of the State’ means any and all water on or beneath the surface of the ground, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground.” (HRS § 174C-3.)

103. In *Waiāhole III*, the Intermediate Court of Appeals ruled that:

- a. the Commission’s decision-making in granting Campbell Estate’s permit application was consistent with the analytical framework established by the Hawai‘i Supreme Court; and
- b. it was not arbitrary, capricious, or an abuse of discretion for the Commission to prioritize between trust resources and to allocate non-potable Waiāhole Ditch water for Campbell Estate’s agricultural needs instead of potable Waipahu-Waiawa Aquifer water, which could be used to satisfy the public’s future drinking water needs.

(*In Re Water Use Permit Applications* (hereinafter, “*Waiāhole III*”), 130 Hawai‘i 346, 310 P. 3d 1047 (Ct. App. 2010).)

104. In the *Waiāhole* contested case, the prioritizing was between potable and non-potable trust resources to be used for non-potable purposes. In this contested case, possible alternatives include both potable and non-potable groundwater sources, which, like the rivers and streams, are also public trust resources. Therefore, the Commission is faced with prioritizing among public trust resources not only between potable and non-potable public trust water resources for non-potable purposes, but also between non-potable public trust water resources for non-potable purposes.

105. For prioritizing between potable and non-potable water for non-potable purposes:

- a. many applicants also have limited access to MDWS’s potable water; and
- b. at least three applicants may have access to potable groundwater, which will be addressed in those SWUPAs. (FOF 328 (SWUPAs 2298/2299N—Varel), FOF 427 (SWUPAs 2356, 2297N, 3471N, 3472N—Waikapu Properties), and FOF 480 (SWUPA 2206—Mahi Pono).)

106. For prioritizing between non-potable water resources for non-potable purposes, at least one applicant has access to non-potable groundwater, and one applicant may have access, which will be addressed in those SWUPAs. (FOF 480, SWUPA 2206 – Mahi Pono), FOF 427 (SWUPAs 2356, 2297N, 3471N, 3472N—Waikapu Properties).)

i. Potable Water

107. The Commission has previously established the policy that when both potable and non-potable water is available for non-potable purposes, non-potable water should be used. Even when there is no immediate need to use the potable water source, “(t)he Water Commission was entitled to consider the future water needs of Hawai‘i and its people in fulfilling the State of Hawai‘i’s ‘obligation to protect, control and regulate the use of Hawai‘i’s water resources for the benefit of its people.’ Haw. Const. Art. XI, § 7; see Haw. Const. Art. XI, § 1.” (*Waiāhole III*, 130 Hawai‘i 346, 310 P. 3d 1047.)

108. For the many applicants who have access to municipal water but are requesting surface water for domestic uses including water for individual personal needs and for household purposes such as drinking, bathing, heating, cooking, noncommercial gardening, and sanitation, the Commission finds that the municipal water is not “practicably available” for such non-potable uses for the purpose of the SWUPA determinations.

109. For applicants who have developed their own potable groundwater wells (SWUPAs 2298/2299N—Varel and SWUPAs 2356, 2297N, 3471N, 3472N—Waikapu Properties), the Commission also finds that those waters are not “practicably available” for their non-potable uses for the purposes of the SWUPA determinations and will address their SWUPAs on that basis.

- a. If surface water is not available, there would be only one source for agricultural irrigation—the applicant’s potable water well(s).

As such, there would be no practical alternative to using their potable water wells for agricultural irrigation, with the only “alternative” being not to irrigate their agricultural lands.

- b. If these wells and agricultural activities are on lands owned by the applicant and the lands are not in a groundwater management area, then under the common law the applicant has correlative rights to use the potable well water for agricultural irrigation on the overlying lands, and the Commission has no permitting authority to regulate that use other than the use must be reasonable. (*Ko ‘olau Agricultural Co., Ltd v. Commission on Water Resource Management*, 83 Hawai‘i 484, 491, 927 P.2d 1367, 1374 (1996).)

ii. Non-potable Water

110. The Commission finds that in prioritizing among non-potable trust resources, its choice is not limited to one or the other, but instead is based on a balancing of competing interests. Operationally, this may mean the use of both non-potable resources, which can only be determined by an analysis of the specific circumstances of each case to determine the amount of each competing resource which is not “practicably available.”

b. Recycled Water

111. When costs, technology and logistics are resolved, the necessary infrastructure to make recycled wastewater available from MDWS’s Wailuku-Kahului Wastewater Reclamation Facility would take at least six years. When available only approximately 3 mgd of R-1 recycled water would be reliably available for non-MDWS use. (FOF 317.)

112. “Practical” to this point in time has been limited by single-user analyses. Thus, while the costs of upgrading the Wailuku-Kahului WWRF from R-2 to R-1 production can be reliably estimated, the costs and availability of leases and easements to transport the recycled water to specific users are both uncertain and likely to fail a cost-benefit analysis for single users who are assumed to have to bear the entire costs as well as the logistics of acquiring easements and completing the delivery pipelines. Thus, the practicability and eventual use of recycled water from the Wailuku-Kahului WWRF requires a coordinated effort between MDWS and potential users.

113. At this time, recycled water is not a practicable alternative to surface water for any of the applicants.

c. Desalination

114. Desalination is not a viable alternative for agricultural irrigation in the near future. Analyses have focused on the production of potable water, and the costs of this high-energy approach makes it unlikely that, even if and when operational, it would be a priority use for agricultural irrigation. (FOF 318-319.)

115. Based on the above, most applicants, with the exceptions noted above, do not have practicable alternative water sources for their use of surface water, as provided herein.

G. Interim Instream Flow Standards

116. “‘Instream flow standard’ means a quantity of water or depth of water which is required to be present at a specific location in a stream system at certain specified times of the year to protect fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses.” (HRS § 174C-3.)

117. “‘Interim instream flow standard’ means 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.)

118. 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); HAR § 13-169-40.)

119. “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:

- a. Maintenance of fish and wildlife habitats;
- b. Outdoor recreational activities;
- c. Maintenance of ecosystems such as estuaries, wetlands, and stream vegetation;
- d. Aesthetic values such as waterfalls and scenic waterways;
- e. Navigation;

- f. Instream hydropower generation;
- g. Maintenance of water quality;
- h. The conveyance of irrigation and domestic water supplies to downstream points of diversion; and
- i. The protection of traditional and customary Hawaiian rights. (HRS § 174C-3.)

120. “Noninstream use” means the use of stream water that is diverted or removed from its stream channel and includes the use of stream water outside of the channel for domestic, agricultural, and industrial purposes. (HRS § 174C-3.)

121. “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.” (HRS § 174C-71(2)(C).)

1. IIFS Under This Contested Case Hearing

122. Whether the IIFS established under the 2010 and 2014 amendments should remain the same or whether one or more stream flows should be increased further, or even reduced, depends on the evidence presented during the hearings of this contested case.

a. Instream Values

123. There has been a significant revival of instream values in all of Nā Wai ‘Ehā following the IIFS amendments of 2010 and 2014.

124. From the perspective of historic, pre-diversion flows:

- a. Waihe‘e River’s restoration of 10 mgd is less than its lowest flow of 14 mgd measured at the same elevation.
- b. North Waiehu Stream’s restoration of 1.6 mgd (equivalent to 1.0 mgd at its new, lower location after infiltration losses) is equivalent to its lowest flow of 1.6 mgd measured at the same elevation. South Waiehu Stream’s 2010 restoration of 0.9 mgd was less than the lowest flow of 1.5 mgd at a higher elevation, without accounting for possible infiltration losses.
- c. Wailuku River’s restoration of 10 mgd was greater than the lowest flow of 7.1 mgd measured at the same elevation.

- d. Waikapū Stream’s restoration of 2.9 mgd was less than the lowest flow of 3.3 mgd measured at the same elevation.

(FOF 17, 56, 62, 67-69, 74-75, 81-82.)

125. Waihe‘e River’s restoration of 10 mgd has resulted in springs and wetlands returning near its mouth. It also increased available habitat units from 1% to 11.1%. (FOF 291, 296 - 97.)

126. North Waiehu Stream’s 2010 restoration of 1.6 mgd⁴³ equals its lowest recorded flow of 1.6 mgd. South Waiehu Stream’s 2010 restoration of 0.9 mgd was just below the Spreckels Ditch at an elevation of 270 feet, and the lowest flow at elevation 870 feet was 1.5 mgd, with unknown infiltration losses between the two points. The additions resulted in increasing available habitat from 6.1% to 55.5%. (FOF 290-91.)

127. Any further increases in habitat from increasing the restoration flows will not result in proportionate increases. The first amounts of increased flows in dry or very dry low-flow streams quickly result in large increases in wetted habitat, and the increases in wetted habitat from further increases in flow become less dramatic. (CCH-MA06-01 D&O: FOF 589 and COL 244.)

128. Wailuku River’s 2010 restoration of 10 mgd is 2.9 mgd greater than its lowest recorded flow of 7.1 mgd and has resulted in reaches of the river with pools deep enough to swim in. (FOF 299.)

129. Waikapū Stream’s 2010 restoration of 2.9 mgd is 0.4 mgd less than its lowest recorded flow, and despite numerous users below the restoration point (See Figure 1 for the 2.9 mgd restoration just below the South Waikapū Ditch), it has resulted in flows that have increased enough to return water to Keālia Pond, despite its not flowing continuously in its lowest reaches under natural conditions. (FOF 301.)

b. Noninstream Uses

130. Significant changes have occurred in the demand for water since the 2010 and 2014 amendments.

131. HC&S/Mahi Pono has ceased sugar operations and is transitioning to diversified agricultural operations with an emphasis on bioenergy tropical grasses:

⁴³ Equivalent to 1.0 mgd now measured at a lower level and accounting for infiltration losses. (FOF 17.)

On July 25, 2016, HC&S gave notice that it will not pursue the SWUPA for the ‘Īao-Waikapū fields, because it would no longer lease those lands. Waikapu Properties, LLC, the owner of those fields, will continue to pursue SWUPA 2205 in place of HC&S.

(FOF 25 and 427.)

132. WWC’s non-kuleana, paying customers have increased their requests for water, and new customers applying for water have also significantly increased.

133. The Commission has examined the various requests for water and has set forth the following guideline of priorities amongst the uses:

- a. Native Hawaiian traditional and customary practices and domestic uses of the general public (MDWS’s public water system).
- b. Appurtenant rights that are, or will in the near future, be exercised.
- c. Existing uses.
- d. New uses.

These do not represent absolute priorities amongst types of uses but is being used by the Commission in this case to guide how water will be allocated amongst uses.

134. Domestic consumption of water by individual users is exempt from the permit requirements. (HRS §§174C-3, -48.) However, to allow the Commission to keep better track of water usage, the Commission will be issuing permits to account for domestic water uses.

i. Economic Impact

135. The likelihood of negative consequences to kuleanas exercising recognized traditional and customary Native Hawaiian rights and to MDWS is low, as both are recognized as having the highest priority for noninstream uses. (*See* COL 174.)

136. If, after the IIFS is amended, there is insufficient water for all noninstream uses, the Commission’s implementation plan would be to permit the users according to the priorities set forth in COL 174.

137. Alternatives to river/stream waters are limited:

- a. Only a few applicants have access to wells, *supra*, FOF 328 (SWUPA 2298/2299N—Varel), FOF 427 (SWUPA 2205/2356/2297N, 3471N & 3472N—Waikapu Properties) and

FOF 480 (SWUPA 2206—Mahi Pono), and the Commission's policy is that potable water is not a practical alternative to nonpotable surface water for irrigation. However, these wells are not in a designated groundwater management area, those applicants have common-law correlative water rights, and the Commission has no authority to prohibit them from using potable groundwater for irrigating their lands.

- b. Recycled water from MDWS's Kahului WWRf is potentially available, but only a maximum of about 3 mgd, and while the technology to upgrade R-2 to R-1 water exists, costs and logistics make it impractical for any one user to realize its potential, *supra*, COL 111-112.
- c. MDWS's potable water system is not available for irrigation beyond modest domestic uses because of insufficient supply and the Commission's policy that potable water is not a practical alternative for irrigation purposes, *supra*, COL 107.

138. For commercial operations that would have no alternative water source for their current and/or planned irrigation activities, they may have to forego their operations partially or totally, with lost-opportunity costs associated with those decisions and decisions on how they could use their lands productively without the amounts of water needed for agricultural operations.

139. For the primary water deliverer, WWC, the economic consequences would be a direct correlation between available water and its revenues to deliver those waters, or even a cessation of its operations altogether.

140. If WWC ceases its operations, except for Mahi Pono's direct management of parts of the Spreckels Ditch, all other users, MDWS, kuleana, and private, would not have access to water, and even Mahi Pono's access would be significantly reduced.

c. Conclusions

141. The flow that is reflective of typical flow conditions is the Q₅₀, or the flow equal to or exceeded 50% of the time. (FOF 46.) This level of flow has previously been used by the Commission in setting IIFS. This level of flow only provides for a minimum level of

assuredness of the availability of water to permit holders. In order to provide more consistency that water will be available, the Commission is adopting the Q₇₀ flow as the basis for setting the IIFS and issuance of water permits.

142. Setting the IIFS based on a Q₇₀ flow means there will be times when the offstream permittees will have no water or insufficient water, and times when the instream public trust permittees will have insufficient water and have proportionately lower deliveries. In times of drought even the IIFS will have to be decreased.

143. Finally, available water from each river or stream will vary with stream flows. Thus, there will also be times when total available water would be sufficient to meet all requirements, but the requirements from a particular source cannot be met because of a deficiency between available water and irrigation requirements.

144. To assist in meeting irrigation requirements during low-flow periods, the Commission is supportive of permittees maximizing their reservoir storage capacities when stream flows exceed Q₅₀. Permittees may be allowed to divert water in excess of their permit allocations in order to fill their reservoirs subject to a stream diversion modification approved by the Commission. Permittees may be required to remove siltation to increase the capacity of their reservoirs prior to making this option available to them.

H. Surface Water-Use Permit Applications (SWUPAs)

1. Existing Uses

145. “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. Except for appurtenant rights, failure to apply within this period creates a presumption of abandonment of use, and the user, if the user desires to revive the use, must apply for a permit under section 174C-51.” (HRS § 174C-50(c).)

146. The effective date of designation was April 30, 2008, and applications for existing use permits had to be filed within a period of one year from the effective date of designation, or no later than April 30, 2009 (*supra*, FOF 8).

2. New Uses

147. There is no deadline for new use permit applications, but to be included in this contested case hearing, new use applications had to be submitted by July 1, 2016, ten days before the start of the contested case hearing on July 11, 2016. (FOF 21; HAR §13-167-54(d).)

148. Applications for new uses must establish that the proposed use of water:
- a. Can be accommodated with the available water source;
 - b. Is a reasonable-beneficial use as defined in section 174C-3;
 - c. Will not interfere with any existing legal use of water;
 - d. Is consistent with the public interest;
 - e. Is consistent with state and county general plans and land use designations;
 - f. Is consistent with county land use plans and policies; and
 - g. 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).)

3. Shared Requirements under HRS § 174C-49

149. Because of the large number of new use SWUPAs and the redundancies that would be entailed by repeating each of the requirements listed above in COL 148, *supra*, for each SWUPA, the Commission addresses each requirement here, identifying which are shared by all and which will be addressed in each individual new use SWUPA.

- a. Can be accommodated with the available water source:

Prior to ruling on the existing and new use SWUPAs, the Commission will determine the IIFS for the Nā Wai ‘Ehā rivers and streams, with the remaining flows available for noninstream uses. The Commission has also established a priority system among the SWUPAs, *infra*, COL 174.

- b. Is a reasonable-beneficial use as defined in section 174C-3:
 - 1. “Reasonable-beneficial use” means the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is both reasonable and consistent with the state and county land use plans and the public interest. (HRS § 174C-3.)
 - 2. This requirement is redundant with others listed; i.e., in the public interest and consistent with state and county plans and policies.

3. “In such a quantity as is necessary for economic and efficient utilization” will be addressed for each SWUPA.”
For the remainder of the definition, *see infra*.

- c. Will not interfere with any existing legal use of water;

New use SWUPAs are addressed after existing use determinations have been made. However, in the priority system adopted, *infra*, COL 174, those portions of new use SWUPAs that fall under the applicant’s appurtenant rights are of equal priority as existing use SWUPAs, because appurtenant rights are preserved under the Hawai‘i Constitution, the Water Code does not supplant the public trust doctrine, and there are no absolute priorities among uses of the water resources trust, *supra*, COLs 5-6, 13-14.

- d. Is consistent with the public interest, state and county general plans and land use designations, and county land use plans and policies.

1. The public interest “also encompasses a duty to promote the reasonable and beneficial use of water resources in order to maximize their social and economic benefits to the people of the state,” *supra*, COL 5. The “public interest” is satisfied by a showing that the proposed use is reasonable and beneficial.

2. All of the lands of Nā Wai ‘Ehā are either zoned agriculture or urban in the state and county general plans and land use designations, and therefore consistent with county land use plans and policies. (HRS § 205-4:5; Maui County Code Chapters 19:04 and 19:06.)

- e. 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).)

All water-use permits issued by the Commission are subject to these rights.

4. Confounding of Existing and New use Applications

150. Only a few applicants attempted to measure their existing use, and many applicants presented what they believed were their irrigation requirements rather than their

measured or estimated actual use and used Reppun’s highest estimate of 300,000 gad for lo‘i kalo.

- a. For example, a few applicants who attempted to measure their existing use included SWUPAs 2324/2325N—La‘a & Rodrigues and SWUPAs 2322/2323N—Barrett using the 5-gallon bucket method, *supra*, FOF 351, 348, and SWUPA 2283—Pang, *supra*, FOF 346, using the number of hours running a 1800 gph pump, and SWUPA 2155—Suzuki, *supra*, FOF 433 who had a metered use. Except for metered use, measurements were usually done once and not throughout the one-year period prior to April 30, 2008. (FOF 8.)
- b. The great majority of *applicants* used Reppun’s highest estimate of 300,000 gad for lo‘i complex requirements in place of their existing use, including SWUPAs 2309/2310N—Ayers & Freitas and SWUPAs 2225/2226N—Doherty, *supra*, FOF 345, 360.

151. When existing uses cannot be verified:

- a. “The quantity being consumed shall be determined and verified by the best available means not unduly burdensome on the applicant, as determined by the commission.” (HRS § 174C-50(f).)
- b. “The commission shall also issue an interim permit for an estimated, initial allocation of water if the quantity of water consumed under the existing use is not immediately verifiable, but the existing use otherwise meets the conditions of a permit and is reasonable and beneficial.” (HRS § 174C-50(e).)
- c. Even if not “immediately verifiable,” the existing use must still be “reasonable and beneficial.” But if the amount of existing use is not immediately verifiable, how can a determination be made that it is reasonable and beneficial?

152. It is now over 13 years since April 30, 2008, and some parties have had their water cut off since then when the North Waiehu Ditch was abandoned and no alternative

source has been available, and it is unlikely that all or even the majority of applicants for existing uses can verify their uses as of April 30, 2008. (FOF 8, 136, 329-330.)

153. The Commission could adopt the policy that existing uses that cannot be verified would be treated as new uses, but concludes that it would not be in keeping with the spirit of the Water Code's directive that the determination is "not unduly burdensome on the applicant." (HRS § 174C-50(f).)

154. Permits for existing uses, as for all permitted uses, must only be for amounts necessary for economic and efficient utilization, for which the Commission has established standards for lo'i kalo, diversified agriculture, and domestic uses. Thus, existing uses, whether measured or not, cannot exceed those amounts. There are limits to the amounts that would be recognized as existing uses.

155. Therefore, the Commission adopts the policy that, when uses as of April 30, 2008 cannot be verified, it will be assumed that the use was the amount required for economic and efficient utilization for those specific uses; e.g., 150,000 gad for lo'i kalo. The amount will also be limited to the acreage claimed in the original existing use SWUPA and not to any subsequent amendments.

156. The Commission recognizes that such a policy likely will overestimate many of the existing uses for which verification is not possible, but concludes that such a policy meets the spirit of the Water Code's directive that the determination is "not unduly burdensome on the applicant." (HRS § 174C-50(f).)

157. Many of the existing use applicants also have applied for recognition of appurtenant rights, and many of those with appurtenant rights may well have their existing uses fall within those rights, therefore reducing the number of applicants who will have existing use permits in excess of what they should have been permitted.

158. Some applicants were unsure what application to file and filed a new use instead of an existing use SWUPA. For example, Kamasaki had filed a new use SWUPA but before the application deadline for existing uses. (FOF 432.)

159. Many applicants either changed their existing use requests in their SWUPA to higher amounts in their written and oral testimonies, or explicitly requested an increase over their existing uses, without filing new use SWUPAs.

For example, SWUPA 2155—Suzuki changed his request from 17,379 gpd of metered use to 21,371 gpd, his use over the past five years after his acreage was fully planted; SWUPA 2171—Molina had an existing use of 20,000 gpd, using the bucket method, which she requested to be increased to 38,250 gpd; and SWUPA 2275—Sevilla, Smith & County of Maui had requested an existing use of 4,100 gpd for two 0.1 acre gardens and 1 acre of dryland taro, using Maui County standards, which they increased to 6,101,200 gpd. (FOF 433, 390, 397.)

160. The requirements for filing of a water-use permit specify the information that must be submitted, and “(t)he commission in its discretion may allow a person to apply for several related withdrawals in the same application for a water permit.” (HRS § 174C-51.)

161. The Administrative Rules mirror HRS § 174C-51 and also states that “(e)ach permit application shall be made on forms furnished by the Commission.” (HAR § 13-171-12.)

162. Finally, for new use permit applications, they must have been made by July 1, 2016, ten days before the start of the contested case hearing on July 11, 2016, in order to be included in this contested case hearing. (FOF 21; HAR §13-167-54(d).)

163. The Commission interprets these provisions as providing it the authority to address timely existing and new use requests even though the wrong form was submitted for an existing use or no additional form for a new use was submitted. The permit applications were made on forms provided by the Commission, and the applicant can request several related withdrawals in the same application.

5. Domestic Uses

164. “Domestic use” means any use of water for individual personal needs and for household purposes such as drinking, bathing, heating, cooking, noncommercial gardening, and sanitation. (HRS §174C-3.)

165. “(N)o permit shall be required for domestic consumption of water by individual users.” (HRS §174C-48(a).)

166. “Any person making a use of water in any area of the State shall file a declaration of the person’s use with the commission...If no declaration is filed, the commission, in its discretion, may conclusively determine the extent of the uses required of declaration.” (HRS § 174C-26(a) and (d).)

167. The Water Code does not quantify the amount of water that would qualify for “domestic use,” but:

- a. 2002 State of Hawai‘i Water System Standard for Maui County domestic cultivation is 3,000 gad (see e.g. SWUPA 2231, Attachment at 2; SWUPA 2294, Addendum at 2; SWUPA 2361N, Addendum at 2).
- b. While no acreage is defined:
 - i. An “average typical residential customer” in Maui County uses 400 gpd to 600 gpd of combined indoor and outdoor use, and as high as 1,500 to 2,000 gpd for irrigation of “lush tropical landscape treatment” in arid areas, *supra*, FOF 307.
 - ii. Maui County has accommodated agricultural development lots with 600 to 1,200 gpd, but limits further allocations so as not to provide excessive amounts of water to developments not engaged in bona fide agriculture, *supra*, FOF 308.

168. Considering both the use of 400 gpd to 600 gpd for combined indoor and outdoor use by the Maui County average typical residential customer and the domestic cultivation standard of 3,000 gad, it is reasonable to: a) assume that 0.1 acre would use 300 gpd; and b) apportion 0.2 acre to the typical residential customer’s indoor and outdoor use of 600 gpd (0.2 acre x 3,000 gad = 600 gpd).

169. Domestic cultivation will be capped at 2,500 gad, consistent with the amount allowed for diversified agriculture.

170. The Commission also concludes that:

- a. domestic cultivation will be limited to approximately 1.0 acre at the rate of 2,500 gad; and
- b. such uses meet the Water Code’s definitions of “domestic use” and “domestic consumption of water by individual users” and will be exempt from the permit requirements.

6. Competing Applications

171. “If two or more applications which otherwise comply with sections 174C-49 are pending for a quantity of water that is inadequate for both or all, or which for any other reason are in conflict, the commission shall first, seek to allocate water in such a manner as to accommodate both applications, if possible; second, if mutual sharing is not possible, then the commission shall approve that application which best serves the public interest. (HRS § 174C-54.)

172. The Commission may impose restrictions on some uses not shared by other uses, for “such measures lay squarely within the Commission’s appointed function of weighing and negotiating competing interests in regulating the water resources of this state. *See, e.g.,* HRS § 174C-31 (d) (2), (k) – (m).”⁴⁴ (*Waiāhole I*, 94 Hawai‘i at 169, 9 P.3d at 481.)

7. Priority of Competing Uses

173. After sufficient water is returned to the Nā Wai ‘Ehā rivers and streams to meet the IIFS, the variable nature of flows available for offstream uses makes it necessary: 1) to allocate water in such a manner as to accommodate all approved SWUPAs when possible; and 2) when accommodating all permit holders is not possible, to impose restrictions on some uses not shared by other uses.

174. Because of the large number of competing uses in this case, for the purposes of this case the Commission therefore prioritizes competing uses as follows, in descending order:

- a. Priority 1:
Legally recognized appurtenant rights, traditional and customary Native Hawaiian rights, domestic uses of the general public, the Department of Hawaiian Homelands reservations, and Maui Department of Water Supply water uses.
- b. Priority 2:
Other existing uses.

⁴⁴ HRS § 174C-31 (d)(2) refers to “desirable uses worthy of preservation by permit, and undesirable uses for which permits may be denied”; (k) refers to “prohibit(ing) or restrict(ing) other future uses”; (l) refers to “certain uses...(which) would constitute an undesirable use for which the commission may deny a permit...”; and (m) refers to “designat(ing) certain uses...(which) shall be preferred over other uses.”

- c. Priority 3:
Diversified agriculture, including commercial lo'i kalo.
- d. Priority 4:
New uses not based on appurtenant rights.

175. These priorities are not absolute and are limited in their application to this case.

176. Appurtenant rights must be traced back to the Māhele, but traditional and customary Native Hawaiian rights trace back to a later time, November 25, 1892. (*State v. Zimring (I)*, 52 Haw. 472, 475, 479 P.2d 202, 204 (1970)).

- a. Therefore, there could be Native Hawaiians who are not the original grantees but who settled on or owned the land by November 25, 1892. Whether or not they have occupied or owned the land continuously since that date, they would have traditional and customary rights on that land. Therefore, appurtenant rights and traditional and customary rights to the same land need not have been initiated concurrently.
- b. Moreover, while the quantity of appurtenant rights is the amount exercised at the time of the Māhele, there are no such explicit constraints on the exercise of traditional and customary rights. Therefore, if the quantity of water under the appurtenant right is insufficient to cultivate lo'i kalo for which traditional and customary rights can be claimed, then the difference would still fall under traditional and customary rights.

177. If permits are approved for amounts that exceed the amounts recognized as appurtenant rights, the amounts exceeding the appurtenant rights will be given priority based on the type of use.

178. When there is insufficient water to meet all approved permits, water will be allocated according to the priorities set forth above.

I. Determination of Appurtenant Rights, Traditional and Customary Rights, and Surface Water-Use Permits

179. Because of the large number of SWUPAs—many of whom have also applied for recognition of appurtenant rights—as well as the complexity of many of the SWUPAs, the determination of appurtenant rights and permit amounts for the applicants is preceded by a reference to their Findings of Fact (FOF). The title of each SWUPA is immediately followed by the supporting FOF in parentheses.

180. Appurtenant rights associated with specific properties are being recognized through this contested case hearing. Permits will be issued against the amount of appurtenant rights recognized by the Commission, but only in the amount of any uses that are existing or uses that will be commenced within the four years following permit issuance. HRS § 174C-63.

181. The required elements to qualify as a constitutionally protected traditional and customary practice have been established through testimony that kalo growing existed throughout all four watersheds prior to November 25, 1892, that the practice is related to family needs for subsistence, and that the manner in which the practice is conducted is consistent with tradition and custom. *Pratt I*, 124 Hawai‘i at 352-54, 243 P.3d at 312-15. Therefore, existing and/or new water use permits for traditional and customary practices associated with growing kalo are issued in this case to any applicant who qualifies as a Native Hawaiian within the guidelines set forth in *PASH* and who do *not* intend to grow kalo for a *commercial purpose*.

182. The denial of any applications, either for a permit or recognition of appurtenant rights, are made without prejudice and the applicants may re-apply at any time. Applicants who would like to re-apply should contact Commission staff on what further documentation would be required.

III. DECISION AND ORDER

A. Interim Instream Flow Standards (IIFS)

1. The Commission's amended IIFS for the Nā Wai 'Ehā rivers and streams are set forth below.

2. Tables 1, 2, and 3, *infra*, set forth projected allocations for when stream flow will not sustain the IIFS and all permitted amounts. Decreases in permitted amounts will be made to the lowest priority uses first. When the only remaining uses are all of the same priority, then the IIFS and all of the remaining uses will be decreased in equal proportion so that all uses may continue. The Commission may make changes to these allocations depending on specific circumstances as situations may require.

1. Waihe'e River

3. The IIFS for Waihe'e River is modified to be as follows:

- a. above all diversions at gauging station 16614000 near an altitude of about 605 feet the flow will remain as designated on December 10, 1988, estimated by USGS, based on data from 1984-2005, as Q₉₀ of 24 mgd, Q₇₀ of 28 mgd, and Q₅₀ of 34 mgd;
- b. just downstream of the Spreckels Ditch diversion, at about an altitude of 270 feet, the IIFS will be 11.44 mgd, representing the flow necessary to support the majority of instream habitat (10 mgd) and instream traditional and customary practices (1.44 mgd) associated with the downstream North Waihe'e 'auwai⁴⁵.
- c. at the mouth of the River, the flow will be at least an estimated 6.0 mgd when losses into the streambed, return flows from the ho'i, and consumption are factored in.
- d. when the flow at USGS station 16614000 is below 19 mgd for three consecutive days, the IIFS will be 11.15 mgd, the minimum amount agreed to by all parties in the 2014 mediated settlement.

Table 1. Waihe'e River

⁴⁵ This amount represents the traditional and customary uses that are fed directly from the stream and not through WWC's system.

Stream-flow measured at USGS 16614000 (mgd)	IIFS (mgd)	Instream Public Trust Uses (mgd) ⁴⁶	System Loss (mgd) ⁴⁷	Available for Off-Stream Use (mgd)	Permitted Off-Stream Public Trust Uses (mgd) ⁴⁸	Permitted Off-Stream Reasonable and Beneficial Uses (mgd) ⁴⁹	Remaining Streamflow (mgd)
70	10	1.44	2.13	56.43	4.879	3.171	48.38
60	10	1.44	2.13	46.43	4.879	3.171	38.38
50	10	1.44	2.13	36.43	4.879	3.171	28.38
40	10	1.44	2.13	26.43	4.879	3.171	18.38
34 (Q ₅₀)	10	1.44	2.13	20.43	4.879	3.171	12.38
32 (Q ₅₅)	10	1.44	2.13	18.43	4.879	3.171	10.38
31 (Q ₆₀)	10	1.44	2.13	17.43	4.879	3.171	9.38
30 (Q ₆₅)	10	1.44	2.13	16.43	4.879	3.171	8.38
28 (Q ₇₀)	10	1.44	2.13	14.43	4.879	3.171	6.38
27 (Q ₈₀)	10	1.44	2.13	13.43	4.879	3.171	5.38
25 (Q ₈₅)	10	1.44	2.13	11.43	4.879	3.171	3.38
24 (Q ₉₀)	10	1.44	2.13	10.43	4.879	3.171	2.38
23	10	1.44	2.13	9.43	4.879	3.171	1.38
22 (Q ₉₅)	10	1.44	2.13	8.43	4.879	3.171	0.38
21	10	1.44	2.13	7.43	4.879	2.551	0
20	10	1.44	2.13	6.43	4.879	1.551	0
19	10	1.44	2.13	5.43	4.879	0.551	0
18 (Q ₉₉)	9.85	1.3	2.13	4.72	4.729	0	-0.01

2. Waiehu Stream

4. The 2010 D&O amended the IIFS for North Waiehu Stream as follows:

⁴⁶ These uses include water for existing and new lo‘i kalo and domestic use.

⁴⁷ This amount of system loss is only the amount attributable to the water derived from Waihe‘e River.

⁴⁸ This amount does not include the permitted public trust uses that draw directly from Waihe‘e River. These uses include water for existing and new lo‘i kalo and domestic use that is conveyed through the ditch system.

⁴⁹ The permitted off-stream reasonable and beneficial uses includes 3.081 mgd for Mahi Pono and 0.09 mgd for other “various” permits.

- a. above all diversions near an altitude of 880 feet, the flow will remain as designated on December 10, 1988, estimated by USGS as Q_{90} of 1.7 mgd, Q_{70} of 2.5 mgd, and Q_{50} of 3.2 mgd; and
- b. 1.6 mgd immediately below the North Waiehu Ditch diversion, unless the flow at altitude 880 feet is less, at which time the IIFS will be the corresponding amount.

(CCH-MA06-01 D&O, pp. 185-186.)

5. The 2010 D&O amended the IIFS for South Waiehu Stream as follows:
 - a. above all diversions near an altitude of 870 feet, the flow will remain as designated on December 10, 1988, estimated by USGS as Q_{90} of 1.3 mgd to 2.0 mgd, Q_{70} of 1.9 mgd to 2.8 mgd, and Q_{50} of 2.4 mgd to 4.2 mgd; and
 - b. 0.9 mgd immediately below the Spreckels Ditch diversion, unless the flow at altitude of 870 feet is less, at which time the flow will be the corresponding amount.

(CCH-MA06-01 D&O, p. 186.)

6. The 2010 D&O amended the IIFS for the mouth of Waiehu Stream to be the corresponding amount, estimated at 0.6 mgd when reduced by estimated losses of 1.3 mgd between the North Waiehu Ditch and the confluence of North and South Streams and 0.6 mgd between the confluence of North and South Waiehu Streams and the mouth.

(CCH-MA06-01 D&O, p. 186.)

7. Prior to the restorations, Waiehu Stream was commonly dry downstream of the Spreckels Ditch and did not flow continuously from mauka to makai. (FOF 71.)

8. The restoration of 1.6 mgd to North Waiehu Stream was comparable to the lowest recorded flow of 1.6 mgd, and restoration of 0.9 mgd to South Waiehu Stream was less than the lowest recorded flow of 1.5 mgd. (FOF 62, 67.)

9. With the restorations, natural habitat units increased from 6.1% to 55.5%, and springs and seeps were reviving. (FOF 291, 298.)

10. The 2014 Mediated Agreement revised the 2010 D&O in the following ways:

- a. After the North Waiehu Ditch was abandoned, the IIFS for North Waiehu Stream was relocated to a lower elevation at the level of the Waihe'e Ditch, and the IIFS was lowered from 1.6 mgd to 1.0 mgd to reflect the approximately 0.6 mgd of seepage loss into the streambed between the two points. WWC was also supposed to provide water from the Waihe'e Ditch to the kuleana previously provided water from the North Waiehu Ditch, which has not been accomplished and addressed, *infra*.
- b. The South Waiehu IIFS of 0.9 mgd immediately below the Spreckels Ditch was retained, but Mahi Pono's South Waiehu diversion into the Spreckels Ditch was modified to allow approximately 250,000 gpd during low stream flows to flow from the Ditch to the kuleana intake (see Figure 1), with the remainder of the low flows being returned to the stream.

(2014 Mediated Agreement, p. 26-27.)

11. This modification was the result of "certain kuleana users (who) did not appear in these proceedings (the hearings after the 2010 D&O and before the 2014 Mediated Agreement), but have contacted the Parties and the Commission with their concerns about the impacts of implementing the IIFS for South Waiehu Stream on their kuleana water uses...(T)he Parties and Commission staff have discussed a provisional ditch modification to maximize the amount of water diverted from South Waiehu Stream that can be delivered to the kuleana users during low ditch flows, and the kuleana users on the parcel designated as TMK No. (2) 3-3-002:009 have been informed of and approve the ditch modification notwithstanding that they may need to clear the grate of debris more than is currently required." (2014 Mediated Agreement, Exh. A, pp. 1-2.)

12. TMK No. (2) 3-3-02:009 is 3.38 acres, of which SWUPAs were filed by Jason Miyahira for his 2.08-acre portion and by Rene Molina for the remaining 1.3 acres. Miyahira and Molina own the parcel in a hui along with two other families. Both Miyahira and Molina had filed for existing uses for the 3.38 acres in April 2009. In this contested case hearing, both parcels have been recognized as having appurtenant rights, and Miyahira has been approved

for an existing use permit of 18,750 gpd plus domestic use of 3,350 gpd and Molina, for an existing use permit of 18,750 gpd plus domestic use of 625 gpd. (FOF 389-390, D&O 103-104.)

13. The only reason given for this special treatment for Miyahira and Molina was the 2014 Mediated Agreement rationale that they had concerns about the impacts of implementing the IIFS for South Waiehu Stream on their kuleana water uses, for which the Mediated Agreement approved a provisional ditch modification to maximize the amount of water diverted from South Waiehu Stream that can be delivered to the kuleana users during low ditch flows, about which Miyahira and Molina had been informed of and approved the ditch modification notwithstanding that they may need to clear the grate of debris more than is currently required. (2014 Mediated Agreement, Exh. A, pp. 1-2.)

14. The Commission finds the special accommodations for Miyahira and Molina to be arbitrary and contrary to the treatment of other approved permits, which include permittees in Category 1 with traditional and customary rights and others similarly situated with Miyahira and Molina with appurtenant rights and/or existing uses.

15. A similar arbitrary and special treatment had been afforded to MDWS and certain other kuleana users on Wailuku River (D&O 25).

16. The IIFS for Waiehu Stream is modified to be as follows;

a. North Waiehu Stream:

- i. above all diversions near an altitude of 880 feet, the flow will remain as designated on December 10, 1988, estimated by USGS as Q_{90} of 1.7 mgd, Q_{70} of 2.5 mgd, and Q_{50} of 3.2 mgd; and
- ii. the IIFS will be the natural flow in North Waiehu from mauka to makai without any offstream diversion of water.

b. South Waiehu Stream:

- i. above all diversions near an altitude of 870 feet, the flow will remain as designated on December 10, 1988, estimated by USGS as Q_{90} of 1.4 mgd, Q_{70} of 2.3 mgd, and Q_{50} of 3.2 mgd;
- ii. above the Spreckels Ditch near an altitude of 280 feet, the flow is estimated by USGS as Q_{90} of 0.44 mgd, Q_{70} of 1.3 mgd, and Q_{50} of 2.3 mgd; and

- iii. the IIFS at an altitude of 260 feet, immediately below the Spreckels Ditch intake will be 0.3 mgd, unless the flow at altitude of 280 feet is less, at which time the IIFS will be the corresponding amount.
 - iv. The 2014 Mediated Agreement's special treatment under low-flow conditions for kuleana ditch users off Mahi Pono's South Waiehu diversion into the Spreckels Ditch is rescinded, and those users will have access to water according to the priority of their permits, as with all other permittees and appurtenant rights holders.
- c. The IIFS at the confluence of North and South Waiehu Stream shall be an estimated Q_{90} of 0.64 mgd, Q_{70} of 1.37 mgd, and Q_{50} of 1.8 mgd after accounting for infiltration losses for North and South Waiehu Streams.

3. Wailuku River

17. The 2010 D&O did not amend the IIFS for Wailuku River. (CCH-MA06-01 D&O, p. 186.)

18. Following the Hawai'i Supreme Court review and subsequent rehearing and proposed D&O by the Hearings Officer, the 2014 Mediated Agreement amended the IIFS as follows:

- a. 10 mgd just below the diversion operated by WWC above the 'Īao-Waikapū and 'Īao-Maniania Ditches.
- b. Provided that:
 - i. When the average daily flow measured at USGS stream-gauge station 16604500 is between 15 mgd and 10 mgd and has continued in that range for three consecutive days, the greater of one-third (1/3) of the stream flow or 3.9 mgd may be diverted for noninstream use until the flow returns to 15 mgd or above.
 - ii. When the average flow for any day falls below 10 mgd, commencing the next day and continuing until the average daily flow returns to at least 10 mgd, 3.4 mgd may be diverted for noninstream use.

- c. 5 mgd at the mouth. No water may be diverted at the Spreckels Ditch intake operated by Mahi Pono except when the stream flow is adequate to allow the IIFS of 5 mgd at the mouth.

(2014 Mediated Agreement, p. 27.)

19. As in the case of South Waiehu Stream, the 2014 Mediated Agreement provides special treatment, this time “to provide adequate water to accommodate MDWS’s 3.2 mgd for its water treatment plant and the estimated 0.2 mgd used by kuleana users served exclusively by the ‘Īao-Waikapū Ditch.” (2014 Mediated Agreement, p. 27.)

20. MDWS’s water use is recognized under Priority 1 (COL 174.) And there are no absolute priorities among public trust purposes. (COL 6.)

21. Furthermore, first, while at times there may be insufficient water available for all permitted offstream uses, it will rarely, if ever, be of such deficiency that no water will be available, only a reduced amount compared to the maximum permitted amount. Second, water available from rivers and streams inherently fluctuates with stream flow, so permittees of such water are never guaranteed a set amount, only a maximum amount that they cannot surpass.

22. Wailuku River is now deep enough to swim, and springs have become more consistent. (FOF 299-300.)

23. The IIFS for Wailuku River is modified to be as follows:

- a. above all diversions near an altitude of 780 feet, the flow will remain as designated on December 10, 1988, estimated by USGS as Q₉₀ of 12 mgd, Q₇₀ of 17 mgd, and Q₅₀ of 25 mgd. (FOF 74.)
- b. 10 mgd measured at USGS station 16605500 on Wailuku River at ‘Īao Valley Road.
- c. The special provisions for MDWS and the kuleana users of the ‘Īao-Waikapū Ditch are rescinded, and they will receive water through the priority system established for all permittees.
- d. Provisions will be made to maintain mauka to makai flow as much as possible at the WWC diversion to ‘Īao-Waikapū and ‘Īao-Maniania ditches.
- e. When the mean daily flow of Wailuku River measured at USGS station 16604500 drops below 15 mgd for three consecutive days,

then the IIFS is seventy percent (70%) of the streamflow measured at USGS 16604500.

- d. When the USGS station 16605500 on Wailuku River at Iao Valley Rd indicates that at least 10 mgd is flowing in Wailuku River, - streamflow is adequate to provide for 5 mgd at Waiehu Beach Road. Only when there is water in excess of 10 mgd, measured at USGS station 16605500 on Wailuku River at Iao Valley Rd, may the water in excess of 10 mgd be diverted at the Spreckels Ditch intake operated by Mahi Pono.

Table 2. Wailuku River

Streamflow measured at USGS 16604500 (mgd)	IIFS (mgd)	Instream Public Trust Use (mgd) ⁵⁰	System Loss (mgd) ⁵¹	Available for Off-Stream Use (mgd)	Maui DWS Permitted Use (mgd)	Permitted Off-Stream Public Trust Uses (mgd) ⁵²	Permitted Off-Stream Reasonable and Beneficial Uses (mgd)	Remaining Streamflow (mgd)
50	9.332	0.668	0.4	39.6	3.2	0.63	0.873	34.897
40	9.332	0.668	0.4	29.6	3.2	0.63	0.873	24.897
30	9.332	0.668	0.4	19.6	3.2	0.63	0.873	14.897
25 (Q ₅₀)	9.332	0.668	0.4	14.6	3.2	0.63	0.873	9.897
23 (Q ₅₅)	9.332	0.668	0.4	12.6	3.2	0.63	0.873	7.897
21 (Q ₆₀)	9.332	0.668	0.4	10.6	3.2	0.63	0.873	5.897
19 (Q ₆₅)	9.332	0.668	0.4	8.6	3.2	0.63	0.873	3.897
17 (Q ₇₀)	9.332	0.668	0.4	6.6	3.2	0.63	0.873	1.897
16 (Q ₇₅)	9.332	0.668	0.4	5.6	3.2	0.63	0.873	0.897
15 (Q ₈₀)	9.332	0.668	0.4	4.6	3.2	0.63	0.77	0

⁵⁰ The IIFS includes permitted public trust uses that draw water directly from the Wailuku River, which totals 0.668 mgd. These uses include water for existing and new lo'i kalo and domestic use.

⁵¹ This amount of system loss is only the amount attributable to the water derived from Wailuku River.

⁵² This amount does not include the permitted public trust uses that draw directly from Wailuku River. These uses include water for existing and new lo'i kalo and domestic use that is conveyed through the ditch system.

Streamflow measured at USGS 16604500 (mgd)	IIFS (mgd)	Instream Public Trust Use (mgd) ⁵⁰	System Loss (mgd) ⁵¹	Available for Off-Stream Use (mgd)	Maui DWS Permitted Use (mgd)	Permitted Off-Stream Public Trust Uses (mgd) ⁵²	Permitted Off-Stream Reasonable and Beneficial Uses (mgd)	Remaining Streamflow (mgd)
14 (Q ₈₅)	9.177	0.657	0.4	3.8	3.147	0.62	0	0
13	8.502	0.609	0.4	3.5	2.915	0.574	0	0
12 (Q ₉₀)	7.827	0.560	0.4	3.2	2.684	0.528	0	0
11 (Q ₉₅)	7.153	0.512	0.4	2.9	2.453	0.483	0	0
10	6.478	0.464	0.4	2.7	2.221	0.437	0	0
8.4 (Q ₉₉)	5.398	0.386	0.4	2.2	1.851	0.364	0	0

4. Waikapū Stream

24. The 2010 D&O did not amend the IIFS for Waikapū Stream. (CCH-MA06-01 D&O, pp. 186-187.)

25. Following the Hawai‘i Supreme Court review and subsequent rehearing and proposed D&O by the Hearings Officer, the 2014 Mediated Agreement amended the IIFS as follows:

- a. 2.9 mgd, measured below the South Waikapū Ditch diversion.
- b. Water remaining in Waikapū Stream at the Waihe‘e Ditch diversion can be diverted into the Waihe‘e Ditch except during periods of high flow, when most of the flow of Waikapū Stream passes or tops the diversion and flows toward Keālia Pond, and excess ditch flow is discharged into Waikapū Stream. The intent was that the frequency and amount of intermittent flows that pass the Waihe‘e Ditch diversion during rainy periods will not be diminished by any change in the manner in which this diversion is currently operated.

(2014 Mediated Agreement, p. 28.)

26. Although not stated, the IIFS of 2.9 mgd below the South Waikapū Ditch diversion—versus the absence of any IIFS below the South Waikapū Ditch diversion under the

previous status quo that reflected unrestricted diversion conditions—had the effect of limiting the amount that could be diverted by the South Waikapū Ditch diversion for Mahi Pono’s ‘Īao-Waikapū fields, thereby providing more water for kuleana further down the stream (*see* Figure 1: Simplified Schematic Diagram).

27. The conditions for the Waihe‘e Ditch diversion at high flows was to ensure that such flows would not be captured by the Waihe‘e Ditch and that water would reach Keālia Pond when the stream flooded. As a consequence, water has returned to Keālia Pond, which was previously “mud flats,” despite its not flowing continuously in its lowest reaches. (FOF 85 and 301.)

28. The IIFS for Waikapū Stream shall remain as established in the CCH-MA06-01 D&O (as updated by the USGS SIR 2010-5011) and the 2014 Mediated Agreement as follows:

- a. above all diversions near an altitude of 1,160 feet, the flow will remain as designated on December 10, 1988, estimated by USGS as Q_{90} of 2.5 mgd, Q_{70} of 3.3 mgd, and Q_{50} of 4.3 mgd. (FOF 81; USGS SIR 2010-5011, pg. 72.)
- b. 2.9 mgd on Waikapū Stream at an altitude of 915 feet, reflecting the inflow of an estimated 1.0 mgd from a tributary at an altitude of 1050 feet, below the South Waikapū Ditch.
- c. When the available water is below Q_{99} , only 0.13 mgd may be diverted by the South Waikapū Ditch and the IIFS is reduced to 2.27 mgd.
- d. No alterations shall be made to the Waihe‘e Ditch diversion that would increase the diversion of high stream flows beyond what can be diverted under current configurations.

Table 3. Waikapū Stream

Stream at 1160 ft above South Waikapu Ditch	Stream Inflow at 1050 ft below South Waikapu Ditch (mgd)	IIFS at 915 ft (mgd) ⁵³	System Loss (mgd) ⁵⁴	Available to South Waikapu Ditch (mgd)	Permitted Off-Stream Public Trust Uses (mgd) ⁵⁵	Permitted Off Stream Reasonable Beneficial Uses (mgd)	Remaining Streamflow (mgd)
8	1.47	2.9	0.2	6.37	0.215	0.549	5.606
7	1.34	2.9	0.2	5.24	0.215	0.549	4.476
6	1.22	2.9	0.2	4.12	0.215	0.549	3.356
5	1.09	2.9	0.2	2.99	0.215	0.549	2.226
4.3 (Q ₅₀)	1	2.9	0.2	2.2	0.215	0.549	1.436
3.7 (Q ₆₀)	1	2.9	0.2	1.6	0.215	0.549	0.836
3.3 (Q ₇₀)	1	2.9	0.2	1.2	0.215	0.549	0.436
2.8 (Q ₈₀)	1	2.9	0.2	0.7	0.215	0.485	0
2.5 (Q ₉₀)	1	2.9	0.2	0.4	0.215	0.185	0
1.6 (Q ₉₉)	1	2.27	0.2	0.13	0.13	0	0

29. WWC and Mahi Pono will work with Commission staff to implement the IIFS and modifications to the previous conditions that have been rescinded.

5. Enhanced Flows for Downstream Permittees

30. The flows established below the diversions shall be augmented by the amounts necessary to meet the requirements of downstream water-use permittees and domestic users.

⁵³ The IIFS includes permitted public trust uses that draw water directly from the Waikapū Stream, which totals 1.031 mgd. These uses include water for existing and new lo‘i kalo and domestic use.

⁵⁴ This amount of system loss is only the amount attributable to the water derived from Waikapū Stream.

⁵⁵ This amount does not include the permitted public trust uses that draw directly from Waikapū Stream. These uses include water for existing and new lo‘i kalo and domestic use that is conveyed through the ditch system.

31. Except for Waikapū Stream, which did not flow continuously to the ocean under natural conditions and for which the IIFS is intended to allow high stream flows to reach Keālia Pond, the IIFS for Waihe‘e River, Waiehu Stream, and Wailuku River are intended to result in continual mauka to makai stream flows to enable instream values, including but not limited to maintenance of fish and wildlife habitats. (FOF 223-288.)

32. Thus, sufficient flows must be added for permittees and domestic users downstream of the IIFS locations. This will be a particularly difficult task with IIFS located where there are also substantial numbers of upstream as well as downstream permittees and domestic users, because WWC and to a lesser extent, Mahi Pono, must maintain a balance between upstream and downstream users while meeting the IIFS for instream purposes. Moreover, when stream flows are insufficient to meet the permitted amounts, WWC and Mahi Pono must reduce available water for downstream permittees at identified delivery points equitably according to the permittees’ priority.

B. Appurtenant Rights and Surface Water-Use Permits (SWUPs)

33. The only uses of water allowed are those uses permitted by a surface water use permit. Water permit amounts are issued on a per day basis. All unauthorized uses may be subject to enforcement.

34. In its Conclusions of Law, the Commission has taken an inclusive approach to appurtenant rights and SWUPAs, not limiting the evaluation of appurtenant rights only to those TMKs that had been provisionally approved and including new use permit requests under the umbrella of existing use applications. The Commission has concluded that it has the authority to take such approaches. Not to take such an inclusive approach would only delay appurtenant rights recognition to those claimants who have substantiated their claims but who would be excluded in this contested case hearing on procedural issues which the Commission has addressed.

35. In awarding water for traditional and customary practices, and especially providing water for lo‘i kalo, the users of traditional ‘auwai will be responsible to ensure that the ‘auwai are sufficient to handle the flow for the initial users and all down ‘auwai users as well.

36. The Commission also encourages the ‘auwai users to engage in collective stewardship of the ‘auwai systems to use the allocated water responsibly, both in times of abundance and more importantly during times of scarcity.

37. Because of the large number of SWUPAs and the redundancy of each applicant repeating the same information, the Commission has taken the approach to address permit requirements and practical alternatives collectively (*see* COL 149), except for the requirement that the amount applied for is “necessary for economic and efficient utilization,” which have been addressed for each SWUPA.

38. The determinations of individual appurtenant rights and SWUPAs are addressed below. Reference to where the relevant FOF and COL for each SWUPA can be found on Appendix 1.

39. **SWUPA 2157—Wailuku Water Company** (FOF 322)

- a. WWC is issued an existing use permit for system losses of 2.73 mgd, or approximately 4.97% of water diverted for delivery to authorized users. There is no priority assigned to WWC’s permit, as its losses accompany delivery of water to permitted uses.
- b. As a condition of this permit, WWC is required to gage and continuously monitor with the installation of a parshall flume or a Commission staff approved water meter, at the following locations:
 1. Diversions:
 - i. South Waikapu Ditch at Reservoir 1 (CWRM gage 6-1)
 - ii. ‘Īao-Maniania Ditch at The Nature Center (CWRM gage 6-6)
 - iii. ‘Īao-Waikapu Ditch at Alu Street (CWRM gage 6-5)
 - iv. Waihe‘e Ditch at Waihe‘e Stream (CWRM gage 6-9)
 - v. Spreckels Ditch at Waihe‘e Stream (CWRM gage 6-11)
 2. Distribution Points:
 - i. South Waihe‘e ‘Auwai

- ii. Field 4 ‘Auwai
 - iii. ‘Īao-Maniania
 - iv. ‘Īao-Waikapū Ditch
 - v. Wailuku Town Kuleana Pipeline
 - vi. South Waikapū ‘Auwai
 - vii. Pi‘ihana-Field 49 Kuleana Pipe
- c. WWC shall ensure that the following quantity of water is delivered to the following distribution points in the indicated amounts based on SWUPs that will be issued as a result of this decision. The amounts to be delivered shall be provided at all times unless identified in Tables 1-3, *supra*, or determined by the Commission to be an emergency:
- 1. South Waihe‘e ‘Auwai – 4.021 mgd
 - 2. Field 4 ‘Auwai – 0.153 mgd
 - 3. ‘Īao-Maniania – 1.469 mgd
 - 4. ‘Īao-Waikapū Ditch – 3.552 mgd
 - 5. Wailuku Town Kuleana Pipeline – 0.088 mgd
 - 6. South Waikapū ‘Auwai – 0.265 mgd
 - 7. Pi‘ihana-Field 49 Kuleana Pipe – 0.021 mgd
- d. WWC is required to find a way to provide water from the Waihe‘e Ditch for previous kuleana users of the North Waiehu Ditch (see FOF 17).
- e. As a further condition of this permit, WWC will be required to conduct an annual water audit of its system. Water audits are necessary and effective for estimating the volume of water loss from irrigation ditch systems. The water audits described below shall follow the American Water Works Association (AWWA)

mass-balance water audit methodology (AWWA publication *Water Audits and Loss Control Programs Manual, M36*), to the extent it is applicable to unpressurized open channel irrigation distribution systems.

1. The Wailuku Water Company shall conduct annual water audits of the following ditch systems: South Waikapu Ditch, 'Āo-Waikapū Ditch, 'Āo-Maniania Ditch, Waihe'e Ditch, and Spreckles Ditch.
2. The Wailuku Water Company shall also conduct annual water audits of the hydraulically discrete named and unnamed ditch, pipe and auwai systems that divert water from any of the four Nā Wai 'Ehā streams and serve Wailuku Water Company customers but are not hydraulically connected to the named ditch systems above.
3. The complexity and interconnectivity of the Wailuku Water Company ditch systems make it challenging to accurately isolate hydraulically discrete ditch systems for completing water audits. It is critical that each of these hydraulically discrete systems are accurately depicted on maps and points of volumetric measurement clearly identified.
4. In conducting the water audit, the following volumes of water shall be measured or carefully estimated for each hydraulically discrete ditch system: Water Supplied (volume from own sources [stream diversions], water imported, water exported, changes in reservoir storage), Authorized Consumption (metered and unmetered customer consumption), and Unauthorized Consumption (theft).
5. Based on the volumes described above, the water audits will enable an estimate of the volume of real loss from the respective ditch systems. The quality of the results will rely on the quality of the data used in the calculation of water loss.
6. Water audits for each ditch system shall be completed for each calendar year using the AWWA Free Water Audit Software v.5, or alternative software acceptable to the Commission, and submitted to the Commission by July 1 on the year following the calendar year for which the audit

was completed. Each water audit shall be accompanied by a map showing the system that the audit was completed for.

7. Qualified Commission staff shall conduct a Level 1 validation of each of the annual water audits as described in the Water Research Foundation publication *Level 1 Water Audit Validation: Guidance Manual* (Project #4639A), to the extent it is applicable to unpressurized open channel irrigation distribution systems.
 8. An alternative to the audit would be a monthly report providing similar information to what is produced from the monthly reports on the Waiāhole Water System: a) daily flows, b) Acreage in Production, c) Summary of Total Metered Water Readings and d) Unmetered Operational Flows.
- f. WWC will also be required to submit, within 120 days, applications pursuant to HAR § 13-168-35 for the abandonment of certain stream intakes that are noted in this decision as being inactive. These intakes are: North Waiehu (FOF 136), Kama Ditch (FOF 138), Everett Ditch (FOF 138), and Reservoir 6 at Waikapu (FOF 137).

1. Waihe'e River

a. Waihe'e River

40. SWUPA 2365N—Diannah Lai Goo (FOF 324)

- a. Parcels 8 and 10 are recognized as having appurtenant rights in the amount of 157,500 gpd (1.05 acres x 150,000 gad).
- b. The Goos will be issued a new use permit of 157,500 gpd (150,000 gad x 1.05 acres) in connection with their intent to start growing taro. The full 157,500 gpd is granted based on their recognized appurtenant rights.

41. SWUPA 3617N—Joshua Chavez (FOF 325)

Because Chavez did not submit testimony nor participate in the contested case hearing, both his request for a new use permit and recognition of appurtenant rights are denied without prejudice.

42. **SWUPA 3470N—John Varel (Emmanuel Lutheran Church)** (FOF 326)
- a. Parcel 5 is recognized as having appurtenant rights of 283,500 gpd (1.89 acres x 150,000 gad).
 - b. Varel is granted a new use permit of 150,000 gpd (1 acre x 150,000 gad) for new lo‘i kalo. The 150,000 gpd is granted as part of the recognized appurtenant rights for Parcel 5.
43. **SWUPA 2362N—Joseph Alueta** (FOF 327)
- a. Appurtenant rights were extinguished by the reservation of water rights in the deed conveying this property by Wailuku Sugar Company in 1979.
 - b. Alueta will be issued a new use permit of 300,000 gpd (2 acres x 150,000 gad) for new lo‘i kalo he intends to open. This use is considered under the priority for the exercise of traditional and customary practices. Because Alueta has indicated that he will use the water from the outflow from his lo‘i kalo for his diversified agricultural use, he will not be issued a separate permit for that use.
- b. Waihe‘e Ditch**
44. **SWUPA 2298/2299N—John Varel** (FOF 328)
- a. Both ground and surface waters are public trust resources. The Commission has previously ruled that when both potable ground water and non-potable surface water are available for agricultural irrigation, the ground water source is not a practicable alternative to surface water. Therefore, Varel has no practical alternatives to the use of surface waters. (*In re Water Use Permit Applications (“Waiāhole II”)*, 105 Hawai‘i 1, 20, 93 P.3d 643, 662 (2004); *In re Water Use Permit Applications*, 130 Hawai‘i 346, 310 P.3d 1047 (2010).)
 - b. Appurtenant rights to Parcel 1 were extinguished by the reservation in the 2002 deed from Wailuku Agribusiness.

- c. Varel is granted permits for a total of 892,000 gpd consisting of the following:
 - i. An existing use permit of 867,500 gpd (347 acres x 2,500 gad) for existing diversified agricultural use (macadamia nut trees, diversified agriculture, fruit trees, and nursery plants); and
 - ii. A new use permit of 25,000 (10 acres x 2,500 gad) for new diversified agriculture.
 - d. Varel is recognized as having domestic uses of 3,000 gpd (5 houses x 600 gpd) for which a permit will be issued. Varel's request for an additional 12,000 gpd for an additional 20 worker houses is denied without prejudice because those uses are speculative and non-existent at this time.
45. **SWUPA 2340—Rudy Fernandez** (FOF 331)
 Because Fernandez failed to submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice. Similarly, his request for a new use permit is denied without prejudice.
46. **SWUPA 2305/2306N—Douglas Myers & Alex Buttaro** (FOF 332)
 Because Myers and Buttaro failed to submit testimony or participate in the contested case hearing, their request for recognition of appurtenant rights is denied without prejudice. Similarly, their request for an existing use permit is denied and their request for a new use permit is denied without prejudice.
47. **SWUPA 2355—Fred Coffey** (FOF 333)
 a. Parcel 3 is recognized as having appurtenant rights of 66,900 gpd (0.446 acres x 150,000 gad).
 b. All of the existing uses claimed by Coffey is for uses recognized as constituting his claimed domestic use of 641.5 gpd and will be issued a permit for such use.
48. **SWUPA 2342—Paul Higashino** (FOF 334)

- a. Parcel 17 is recognized as having appurtenant rights of 188,700 gpd (1.258 acres x 150,000).
 - b. The Higashino ‘Ohana are granted an existing use permit for 300,000 gpd (2 acres x 150,000 gad) for their lo‘i kalo. 188,700 gpd is granted based on the recognized appurtenant rights for Parcel 17. The remaining 111,300 gpd is awarded in connection with the exercise of their traditional and customary practices.
 - c. The Higashino ‘Ohana are also recognized as having domestic uses of 1,250 gpd (0.5 acre x 2,500 gad) for which a permit will be issued.
49. **SWUPAs 2290N/3905N—Murray & Carol Smith** (FOF 335)
- a. Appurtenant rights for Parcel 41 were extinguished in 2000 by the reservation of water rights in the deed from Wailuku Agriculture to Waiehu Aina, LLC.
 - b. The Smith ‘Ohana are issued a new use permit for 5,850 gpd (2.34 acres x 2,500 gad) for diversified agriculture (1.84 acres of row crops + 0.5 acre of macadamia trees).
 - c. The Smith ‘Ohana are also recognized as having domestic uses of 1,050 gpd (0.42 acre x 2,500 gad) for which a permit will be issued.
50. **SWUPAs 2326/2327N—Lester Nakama (Ciacci)** (FOF 336)
- a. Parcel 21 is recognized as having appurtenant rights of 150,000 gpd (1.0 acres x 150,000 gad).
 - b. Nakama is granted an existing use permit of 165,000 gpd (1.1 acres x 150,000 gad). 150,000 gpd is granted based on the recognized appurtenant rights for Parcel 21. The remaining 15,000 gpd is based on his existing use for commercial lo‘i kalo.
 - c. Nakama’s request for a new use permit is denied without prejudice.
51. **SWUPAs 2288/2289N—Donnalee & David Singer** (FOF 337)

Because the Singer ‘Ohana did not submit testimony or participate in the contested case hearing, their requests for recognition of appurtenant rights is denied without prejudice. Their permit application for existing use is denied and their permit application for new use is denied without prejudice.

52. **SWUPAs 2328/2329N—Lester Nakama** (FOF 338)

- a. Appurtenant rights are denied without prejudice at this time, because it is not clear whether the pō‘alima identified with Parcel 15 was a separate Land Commission Award or was part of the awards of the four LCAs which it crosses.
- b. Nakama is issued an existing use permit for 105,000 gpd (0.7 acres x 150,000 gad) in connection with his commercial kalo farming.
- c. Nakama’s request for a new use permit is denied without prejudice.

53. **SWUPAs 2330/2331N—Peter Lee & Lester Nakama** (FOF 339)

- a. Parcel 40 is recognized as having appurtenant rights of 159,900 gpd (1.066 acres x 150,000 gad).
- b. Nakama is granted an existing use permit for 159,900 gpd (1.066 acres x 150,000 gad) in connection with his commercial kalo farming.
- c. Nakama’s request for a new use permit is denied without prejudice.
- c. **Spreckels Ditch**

- i. **North Waihe‘e ‘auwai**

54. The following SWUPAs receive water from the Spreckels Ditch via the North Waihe‘e ‘auwai (See Figure 1).⁵⁶

55. **SWUPAs 2233/2234N—Diannah Goo** (FOF 341)

⁵⁶ The Commission takes judicial notice that the pipeline connecting the North Waihe‘e ‘Auwai to Spreckels Ditch was irreparably damaged in flooding in 2019. Work is being done to re-establish the original ‘auwai from the Waihe‘e Stream.

- a. The request for recognition of appurtenant rights for Parcel 7 is denied without prejudice, as the acreage of the award to Victoria Kamāmalu, LCA 7713:24, as well as its description, is not known.
- b. Goo is granted a total permit for 108,600 gpd consisting of the following:
 - i. An existing use permit of 27,150 gpd (0.181 acres x 150,000 gad) for lo‘i kalo; and
 - ii. A new use permit of 81,450 gpd (0.543 acre x 150,000 gad) for new lo‘i kalo.

Both of these uses are considered under the priority as the exercise of traditional and customary practices.

56. **SWUPA 2227—Richard Emoto** (FOF 342)

- a. The request for 432,000 gpd for hydroelectricity is denied without prejudice. Their claimed use of 432,000 gpd for hydroelectricity, with that amount also irrigating 0.4 acre of lo‘i kalo, is not necessary for economic and efficient utilization. Although the Commission supports the production of hydroelectricity in connection with the use of water for other uses, the Commission will not make a specific allocation of water just to enable the production of hydroelectricity.
- b. Parcel 11 is recognized as having appurtenant rights of 120,000 gpd (0.8 acres x 150,000 gad).
- c. The request for appurtenant rights to Parcel 12 is denied without prejudice, as the acreage of the award to Victoria Kamāmalu, LCA 7713:24, as well as its description, is not known.
- d. Emoto and Ellis are granted an existing use permit of 60,000 gpd (0.4 acre x 150,000 gad) for the existing lo‘i kalo. The full amount of 60,000 gpd is granted based on the recognized appurtenant rights for Parcel 11.

- e. Emoto and Ellis are recognized as having a domestic use of 1,000 gpd (0.4 acre x 2,500 gad) for their home and garden and they will be issued a permit for such use.

57. **SWUPA 2228/2229N—Stanley Faustino & Kanealoha Lovato-Rodrigues** (FOF 343)

- a. Parcel 13 is recognized as having appurtenant rights of 105,000 gpd (0.7 acre x 150,000 gad).
- b. Faustino/Lovato-Rodrigues are issued permits for a total of 100,500 gpd consisting of the following:
 - i. An existing use permit of 10,500 gpd (0.07 acres x 150,000 gad) for existing lo‘i kalo; and
 - ii. A new use permit of 90,000 gpd (0.60 acres x 150,000) for new lo‘i kalo.

Both of these uses are granted based on the recognized appurtenant rights for Parcel 13. These uses may also be considered as the exercise of traditional and customary practices.

58. **SWUPAs 2269/2270N—Michael Rodrigues** (FOF 344)

- a. Parcels 15 and 17 are recognized as having appurtenant rights of 135,000 gpd (0.90 acre x 150,000 gad).
- b. The request for recognition of appurtenant rights for Parcel 16 is denied without prejudice as the acreage of the award to Victoria Kamāmalu, LCA 7713:24, as well as its description, is not known.
- c. The request for a new use permit of 400,000 gpd for hydroelectricity is denied without prejudice. His proposed use of 400,000 gpd for hydroelectricity, with that amount also irrigating the 0.4 acre of lo‘i kalo, is not necessary for economic and efficient utilization. As indicated above, although the Commission supports the production of hydroelectricity in connection with the use of water allocated for other uses, the Commission will not make a specific allocation of water just to enable the production of hydroelectricity.

- d. Rodrigues is issued permits for a total of 192,000 gpd consisting of the following:
 - i. An existing use permit for 132,000 gpd (0.88 acres x 150,000 gad) for existing lo‘i kalo; and
 - ii. A new use permit for 60,000 gpd (0.4 acre x 150,000 gad) for new lo‘i kalo.

135,000 gpd are granted based on the recognized appurtenant rights. Both of these uses are also considered under the priority of traditional and customary practices.

- e. Rodrigues is recognized as having a domestic use of 1,000 gpd for 0.4 acre of diversified agriculture (0.4 acre x 2,500) and will be issued a permit for such use.

59. **SWUPAs 2309/2310N—Alfred Ayers & William Freitas** (FOF 345)

Because Ayers and Freitas failed to submit testimony or participate in the contested case hearing their request for recognition of appurtenant rights is denied without prejudice. Similarly, their request for an existing use permit is denied and their request for a new use permit is denied without prejudice.

60. **SWUPA 2283—Lorin Pang** (FOF 346)

- a. Based on Pang’s representation that he believed the deed to his land contains a reservation of appurtenant rights, Pang’s request for recognition of appurtenant rights is denied without prejudice.
- b. Pang is recognized as having a domestic use of 2,500 gpd ((0.76 acres x 2,500 gad) + 600 gpd for fish ponds) for fruit trees.
- c. Pang’s request for an existing use permit is denied.

61. **SWUPAs 2254/2255N—David Lengkeek** (FOF 347)

Lengkeek did not submit testimony or participate in the contested case hearing, their application for an existing use permit is denied and for a new use permit is denied without prejudice.

62. **SWUPAs 2322/2323N—Robert Barrett (Aloha Poi)** (FOF 348)

- a. Parcels 23 and 24 are recognized as having appurtenant rights of 422,550 gpd (2.817 acres x 150,000 gad).
- b. Barrett/Nakama are granted permits for a total of 468,760 gpd for Barrett/Nakama's commercial use for 3.125 acres of lo'i kalo consisting of the following:
 - i. Existing use of 72,000 gpd; and
 - ii. New use of 396,760 gpd.

Of this amount, 422,550 is based on the recognized appurtenant rights for Parcels 23 and 24. The remainder amount of 46,210 gpd will be considered part of Barrett/Nakama's new use for commercial lo'i kalo.

63. **SWUPAs 2252/2253N—Crystal Koki** (FOF 349)

- a. Parcels 5, 32, and 37 are recognized as having appurtenant rights of 180,000 gpd (1.2 acres⁵⁷ x 150,000 gad).
- b. The Kokis are granted permits for a total of 134,400 gpd consisting of the following:
 - i. An existing use permit for 24,000 gpd (0.16 acre x 150,000 gad) for lo'i kalo; and
 - ii. A new use permit of 110,400 gpd (0.736 acres x 150,000 gad) for lo'i kalo.

The full 134,400 gpd is granted as part of the recognized appurtenant rights. These uses are also considered under the priority of the exercise of traditional and customary practices.

- c. The Kokis are recognized as having a domestic use of 1,306 gpd (0.5225 acre x 2,500 gad) for their domestic garden and will be issued a permit for such use.

64. **SWUPA 2367N—Lawrence Koki** (FOF 350)

Because Mr. Koki did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is

⁵⁷ Consisting of Parcel 4 (0.5 acre), Parcel 32 (0.16 acre), and 90% of Parcel 37 (.54 acre),

denied without prejudice. Similarly, his request for a new use permit is denied without prejudice.

65. **SWUPAs 2324/2325N—William La‘a & Emmett & Renette Rodrigues**
(FOF 351)

- a. Parcel 2 is recognized as having appurtenant rights of 246,000 gpd (1.64 acre x 150,000 gad).
- b. William La‘a and the Rodrigues request for an existing use permit is denied.
- c. A new use permit is issued for 246,000 gpd (1.64 acre x 150,000 gad) for new commercial lo‘i kalo. 246,000 gpd will be granted based on the recognized appurtenant rights.

66. **SWUPA 2364N—William Freitas** (FOF 352)

- a. Parcel 37 is recognized as having appurtenant rights of 58,125 gpd (0.3875 acre x 150,000 gpd).
- b. The Freitas ‘Ohana are granted a new use permit for 75,000 gpd (0.5 acre x 150,000 gpd) for new lo‘i kalo. 58,125 is granted based on their recognized appurtenant rights. The remaining amount, 16,875 gpd, is awarded based on the priority of use as a traditional and customary practice.
- c. The Freitas ‘Ohana are also recognized as having domestic use of 660 gpd (0.264 acre⁵⁸ x 2,500 gad) for which a permit will be issued.

ii. South Waihe‘e ‘auwai

67. The following SWUPAs receive water from the Spreckels Ditch via the South Waihe‘e ‘auwai (See Figure 1).

68. **SWUPA 2249—Kenneth Kahalekai** (FOF 354)

- a. Parcels 2, 3, and 29 are recognized as having appurtenant rights of 356,550 gpd (2.377 acres x 150,000 gad).

⁵⁸ This figure represents the area being cultivated for domestic use (0.275 ac) minus the house itself (0.011 acre).

- b. Kenneth Kahalekai is granted an existing use permit for 288,000 gpd (1.92 acres x 150,000 gad), of which 288,000 gpd is based on his appurtenant rights. Kenneth Kahalekai's existing use is also considered a traditional and customary practice.
 - c. Kenneth Kahalekai is recognized as having a domestic use of 1,750 gpd (0.7 acre x 2,500 gad) for which a permit will be issued.
69. **SWUPA 2312—Kau'i Kahalekai** (FOF 355)
- a. Parcels 19 and 23 are recognized as having appurtenant rights of 273,750 gpd (1.825 acres x 150,000 gad).
 - b. Kau'i Kahalekai is granted an existing use permit for 416,400 gpd (2.776 acres x 150,000 gad) for lo'i kalo. 273,750 gpd is granted based on the recognized appurtenant rights. The remaining 142,650 gpd is granted in connection with the exercise of her traditional and customary practices.
70. **SWUPAs 2320/2321N—Ramsay Anakalea (Aloha Poi)** (FOF 356)
- a. Parcel 20 is recognized as having appurtenant rights of 90,000 gpd (0.6 acres x 150,000 gad).
 - b. Anakalea is granted an existing use permit of 72,000 gpd for the existing lo'i kalo based on measurements of current usage. The entire 72,000 gpd is granted based on the recognized appurtenant rights.
 - c. Anakalea is granted a new use permit of 3,000 gpd for the lo'i kalo ((.5 ac x 150,000 gad)-72,000 gpd). The entire 3,000 gpd is granted based on the recognized appurtenant rights.
71. **SWUPA 2406N—David & Anne Brown** (FOF 357)
- Because the Brown 'Ohana did not submit documentation, testimony, or participate in the contested case hearing, their request for recognition of appurtenant rights is denied without prejudice. Similarly, their request for a new use permit is denied without prejudice.
72. **SWUPAs 2262/2263N—John Varel (Kalani & Tera Paleka)** (FOF 358)

- a. The appurtenant rights parcels 35 and 41 were extinguished in the deeds from Wailuku Sugar Co. in 1963.
- b. Varel is granted permits for a total of 51,600 gpd consisting of the following:
 - i. an existing use permit for 11,100 gpd (.074 acre x 150,000 gad) for lo‘i kalo; and
 - ii. a new use permit for 40,500 gpd (0.27 acre x 150,000 gad) for lo‘i kalo.
- c. Varel is recognized as having a domestic use of 675 gpd (0.27 acre x 2,500 gad) for which a permit will be issued.

73. **SWUPAs 2334/2335N—Burt Sakata & Peter Fritz** (FOF 359)

- a. Parcels 13 and 17 are recognized as having appurtenant rights of 175,500 gpd (1.170 acres x 150,000 gad).
- b. Appurtenant rights were extinguished for Parcels 11, 15, 19 and 39 through the reservation of appurtenant rights in the deed in 2001.
- c. Sakata is granted permits for a total of 193,095 gpd consisting of the following:
 - i. An existing use permit of 3,045 gpd (1.218 acres x 2,500 gad) for existing diversified agriculture; and
 - ii. A new use permit of 190,050 gpd (1.267 acres x 150,000 gad) for new lo‘i kalo.

175,500 gpd is granted based on recognized appurtenant rights.

The remaining 18,095 gpd is granted as a new taro use.

74. **SWUPAs 2225/2226N—Michael Doherty** (FOF 360)

- a. Parcel 7 is recognized as having appurtenant rights of 348,750 gpd (2.325 acres x 150,000 gad).
- b. Doherty is granted an existing use permit for 300,000 gpd consisting of the following:
 - i. An existing use permit of 150,000 (1 acre x 150,000 gad) for existing taro lo‘i; and

- ii. A new use permit for 150,000 gpd (1 acre x 150,000 gad) for an additional acre of lo‘i kalo.

All of the 300,000 gpd is granted based on recognized appurtenant rights.

- c. Doherty is recognized as having a domestic use of 2,125 gpd (0.85 x 2,500 gad) for existing domestic diversified agricultural use and a permit will be issued for this use.

75. **SWUPAs 2280/2281N—Thomas Texeira & Denise Texeira** (FOF 361)

- a. Parcels 31 and 32 are recognized as having appurtenant rights of 49,050 gpd (0.327 acre x 150,000 gad).
- b. The Texeira ‘Ohana are granted an existing use permit for 22,500 gpd (0.15 acre x 150,000 gad) for existing lo‘i kalo. All of this 22,500 gpd is granted as part of the recognized appurtenant rights.
- c. The Texeira ‘Ohana request for a new use permit is denied without prejudice.
- d. The Texeira ‘Ohana are recognized as having domestic uses of 1,337.5 gpd (0.535 acre x 2,500 gad) and will be issued a permit for such use.

76. **SWUPAs 2264/2265N—Piko A‘o** (FOF 362)

- a. Appurtenant rights for Parcels 8 and 19 were extinguished in the deed from Wailuku Agribusiness in 2002.
- b. Piko A‘o is granted permits for a total of 734,075 gpd consisting of the following:
 - i. An existing use permit of 35,075 gpd ((0.17 acres x 150,000 gad) for existing lo‘i kalo plus (3.83 acres x 2,500 gad) for existing diversified agriculture).
 - ii. A new use permit of 699,000 gpd ((4.61 acres x 150,000 gad) for new lo‘i kalo plus (3.0 acres x 2,500) for new diversified agriculture).

- c. Because Piko A‘o is a commercial use, domestic use is denied.

77. **SWUPAs 2316/2317N—Gordon Apo (Aloha Poi)** (FOF 363)

- a. Parcel 10 is recognized as having appurtenant rights of 201,000 gpd (1.34 acres x 150,000 gad).
- b. Apo is granted an existing use permit for 109,500 gpd (0.73 acre x 150,000 gad) for existing commercial lo‘i kalo. All of this 109,500 is granted as part of the recognized appurtenant rights.
- c. No information or documentation was presented supporting Apo’s new use application. The new use application is denied without prejudice.

78. **SWUPA 2187—Milla Puliatch** (FOF 364)

Because Puliatch failed to submit testimony or participate in the contested case hearing, her request for recognition of appurtenant rights is denied without prejudice. Similarly, her request for an existing use permit is denied.

79. **SWUPAs 2221/2222N—Cordell Chang** (FOF 365)

- a. Parcel 4 is recognized as having appurtenant rights of 187,500 gpd (1.25 acres x 150,000 gad).
- b. Chang is granted a new use permit for 75,000 (.5 acre x 150,000 gad) for new lo‘i kalo.
- c. Chang is recognized as having a domestic use of 1,125 gpd (0.45 acre x 2,500 gad) for the fruits and vegetables he grows which are largely for home consumption or are donated.
- d. No information or documentation was presented supporting Chang’s existing use application other than for domestic use. The existing use application is denied.

80. **SWUPAs 2313/2314N—Charlene & Jacob Kana** (FOF 366)

- a. Parcels 1 and 18 are recognized as having appurtenant rights of 216,150 gpd (1.441 acres x 150,000 gad).
- b. The Kanas are granted permits for a total of 173,000 gpd consisting of the following:
 - i. An existing use permit of 160,400 gpd (1.069 acres x 150,000 gad) for existing lo‘i kalo; and

- ii. A new use permit of 12,600 gpd (0.084 acres x 150,000 gad) for new lo‘i kalo.

All of the 173,000 gpd is granted as part of the recognized appurtenant rights.

81. **SWUPA 2353—Hiolani Ranch** (FOF 367)

Because Hiolani Ranch did not submit testimony or participate in the contested case hearing, its request for recognition of appurtenant rights is denied without prejudice. Similarly, its request for an existing use permit is denied.

82. **SWUPAs 2278/2279N—Noel & Katherine Texeira** (FOF 368)

Because the Texeira ‘Ohana did not submit testimony or participate in the contested case hearing, their request for recognition of appurtenant rights is denied without prejudice. Similarly, their request for an existing use permit is denied and their request for a new use permit is denied without prejudice.

83. **SWUPA 2294—Bryan Sarasin, Sr.** (FOF 369)

- a. Parcel 16 is recognized as having appurtenant rights of 148,500 gpd (0.99 acres x 150,000 gad).
- b. Sarasin is granted a permit in the total amount of 148,500 consisting of the following:
 - i. An existing use permit is 1,350 gpd (0.009 acres x 150,000 gad) for lo‘i kalo plus (0.4 acres x 2,500 gad) for diversified agriculture; and
 - ii. An existing use permit of 146,150 gpd in connection with his aquaculture operations. This amount represents the remaining balance of the recognized appurtenant rights. If the Sarasin ‘Ohana seek more than 146,150 gpd for their aquaculture operations, they must submit additional evidence of: 1) the amount in use as of April 30, 2008; and 2) that the amount was necessary for economic and efficient utilization for the amount of catfish they had in their ponds at the time. In the alternative, they may submit a new use SWUPA with additional evidence of the requirements for the specific amounts of catfish they wish to raise.

- c. Sarasin is recognized as having a domestic use of 250 gpd (0.1 acres x 2,500 gad).
84. **SWUPA 2361N—Kathleen DeHart** (FOF 370)
- a. Parcel 4 is recognized as having appurtenant rights of 75,000 gpd (0.5 acre x 150,000 gad).
 - b. DeHart is granted a new use permit of 3,000 gpd (0.02 acre x 150,000) for her proposed new lo'i kalo. All of the 3,000 gpd is granted as part of the recognized appurtenant rights. This use would also come under the priority for traditional and customary practices.
 - c. DeHart is recognized as having a domestic use of 1,125 gpd (0.45 acre x 2,500 gad) for which a permit will be issued.
85. **SWUPAs 2231/2232N—Diannah Lai Goo** (FOF 371)
- a. Parcels 6, 19, 65, 66, 67, 68, 78, and 79 are recognized as having appurtenant rights of 195,750 gpd (1.305 acres⁵⁹ x 150,000 gad).
 - b. No information or documentation was presented supporting the Goos existing use application. The existing use application is denied.
 - c. A new use permit is granted for 69,000 gpd (0.46 acres x 150,000 gad) for new lo'i kalo. All of the 69,000 gpd is granted as part of the recognized appurtenant rights.
 - d. The Goos are recognized as having a domestic use of 3,600 gpd (6 households x 600 gpd) and will be issued a permit for such use.
86. **SWUPA 2706N—Hawaiian Islands Land Trust** (FOF 372)
- a. Appurtenant rights for Parcel 1 were extinguished by the deed from Wailuku Agribusiness in 1988.
 - b. Parcel 2 is recognized as having appurtenant rights of 450,000 gpd (3 acres x 150,000 gad).

⁵⁹ Based on the estimate that 90% of the land was in lo'i kalo at the time of the Mahele, the total acreage of 1.45 acres would mean that 1.305 acres was in lo'i kalo.

- c. HILT is granted a new use permit of 1,350,000 gpd (2 acres x 150,000) for lo‘i kalo plus (7 acres x 150,000) for loko kalo i‘a. 450,000 gpd of this amount is granted as part of the recognized appurtenant rights.

iii. Field 4 ‘auwai

87. The following SWUPAs receive water from the Spreckels Ditch via the Field 4 ‘auwai (See Figure 1).

88. **SWUPA 2185N—Na Mala O Waihee** (FOF 374)

No information or documentation was presented supporting Na Mala O Waihee’s new use application nor did Na Mala O Waihee participate in the contested case hearing. The new use application is denied without prejudice.

89. **SWUPAs 2250/2251N—Alfred Kailiehu, Jr. & Ina Kailiehu** (FOF 375)

- a. Parcel 17 is recognized as having appurtenant rights of 38,250 gpd (0.255 acre⁶⁰ x 150,000 gad).
- b. The Kailiehu ‘Ohana are granted permits in the total amount of 37,913 gpd consisting of the following:
 - i. An existing use permit of 450 gpd (0.003 acre x 150,000) for existing lo‘i kalo; and
 - ii. A new use permit of 37,500 gpd (0.25 acre x 150,000 gad) for new lo‘i kalo.

All of the 37,950 gpd is granted as part of the recognized appurtenant rights. These uses may also be considered under the priority for traditional and customary practices.

90. **SWUPAs 2318/2319N—Nolan Ideoka and Lester Nakama** (FOF 376)

- a. Parcel 18 is recognized as having appurtenant rights of 150,000 gpd (1.0 acre x 150,000 gad).
- b. Ideoka and Nakama are granted permits for a total of 115,500 gpd consisting of the following:

⁶⁰ The acreage for Parcel 17 is multiplied by 50% to account for the land being “kalo and kula land” (0.51 x 50% = 0.255).

- i. An existing use permit of 82,500 gpd (0.55 acres lo‘i kalo x 150,000 gad); and
- ii. A new use permit of 33,000 gpd (0.22 acres lo‘i kalo x 150,000 gad). All 115,500 gpd is granted as part of the recognized appurtenant rights.
- iv. **Reservoir 25/WWC Line**

91. The following SWUPAs receive water from the Spreckels Ditch via Reservoir 25/WWC Line.

92. **SWUPA 2144—Living Waters Foundation, LLC** (FOF 378)

- a. No appurtenant rights were claimed nor was testimony or other evidence provided during the contested case hearing to substantiate an appurtenant rights claim. Appurtenant rights are denied without prejudice.
- b. An existing use permit for 22,938 gpd for diversified agriculture is approved based on the metered use.

93. **SWUPA 2153—Robert Hanusa** (FOF 379)

- a. Parcel 25 is recognized as having appurtenant rights of 37,500 gpd (0.25 acre x 150,000 gad).
- b. Hanusa did not submit testimony or documentation of an existing use other than in connection with his domestic use. Accordingly, Hanusa’s existing use application is denied without prejudice.
- c. Hanusa is recognized as having a domestic use of 625 gpd (0.25 acre x 2,500 gad) for which a permit will be issued.

94. **SWUPA 2348—Michael Bailie** (FOF 380)

Because Bailie did not submit testimony or participate in the contested case hearing, his request for an existing use permit is denied.

95. **SWUPA 2182—Cecilia Chang (Jung)** (FOF 381)

- a. Parcel 1 is recognized as having appurtenant rights of 75,000 gpd (0.5 acre x 150,000 gad).

- b. Chang did not submit testimony or documentation of an existing use other than in connection with her domestic use. Accordingly, Chang's existing use application is denied.
- c. Chang is recognized as having a domestic use of 684 gpd based on meter readings for which a permit will be issued.

96. **SWUPA 2593N—John Varel (Koolau Cattle Co.)** (FOF 382)

- a. Parcel 1's appurtenant rights were extinguished by the deed from Wailuku Agribusiness Co., Inc. that reserved water rights.
- b. Varel is issued a new use permit in the total amount of 341,385 consisting of the following:
 - i. Parcel 1: 182,725 (73.09 acres x 2,500 gad) for macadamia nuts;
 - ii. Parcel 2: 40,000 gpd (16 acres x 2,500 gad):
 - a. 17,500 gpd for 7 acres of fruit trees at 2,500 gad;
 - b. 2,500 gpd for 1 acre of organic garden at 2,500 gad;
 - c. 20,000 gpd for 8 acres of macadamia nuts at 2,500 gad;
 - iii. Parcel 3: 22,585 gpd for 9.034 acres of feed and forage pasture at 2,500 gad;
 - iv. Parcel 4: 83,325 gpd (3,333 gpd for each of 25 aquaponic greenhouses); and
 - v. Parcel 5: 12,750 gpd (5.1 acres x 2,500 gad):
 - a. 6,375 gpd for 2.55 acres of fruit trees.
 - b. 6,375 gpd for 2.55 acres of macadamia.
- c. Varel is recognized as having domestic use of 4,200 gpd for seven homes (7 x 600 gpd) for which a permit will be issued.

2. **Waiehu Stream**

a. **North Waiehu Stream**

97. **SWUPA 2363N—Natalie Hashimoto & Carl Hashimoto** (FOF 383)

- a. Parcel 21 is recognized as having appurtenant rights of 27,000 gpd (0.18 acre x 150,000 gad).
- b. The Hashimoto ‘Ohana are also recognized as having a domestic use of 600 gpd for a future garden for which a permit will be issued.
- c. The Hashimoto ‘Ohana did not submit testimony or documentation of a new use other than in connection with their intended domestic use. Accordingly, the Hashimoto ‘Ohana new use application is denied without prejudice.

b. South Waiehu Stream

98. **SWUPAs 2266/2267N—Isabelle Rivera** (FOF 384)

- a. Parcel 12 is recognized as having appurtenant rights of 382,500 gpd (2.55 acres x 150,000 gad).
- b. Rivera is granted a new use permit for 363,000 gpd (2.42 acres x 150,000 gpd) for lo‘i kalo. All of the 363,000 gpd new use is granted based on the recognized appurtenant rights.
- c. Rivera is also recognized as having 600 gpd for domestic uses for which a permit will be issued.
- d. No information or documentation was presented supporting Rivera’s existing use application. The existing use application is denied.

99. **SWUPAs 2219/2220N—Regino Cabacungan & Kathy Alves** (FOF 385)

- a. Old Parcel 23’s appurtenant rights were extinguished by the deed conveying the property from Wailuku Water Company in 1977. Because insufficient documentation regarding appurtenant rights was provided for Parcel 27, the request for recognition of appurtenant rights for Parcel 27 is denied without prejudice.
- b. Cabacungan did not submit testimony or documentation of an existing use other than in connection with his domestic use. Accordingly, Cabacungan’s existing use application is denied.

- c. Cabacungan is granted a new use permit for 33,000 gpd (0.22 acre x 150,000 gad) for new lo'i kalo.
 - d. Cabacungan is recognized as having a domestic use of 600 gpd and will be issued a permit for such use.
100. **SWUPA 2369N—Jeff Smith** (FOF 386)
- a. Appurtenant rights were extinguished in 2001 by the deed that contained a reservation of appurtenant rights.
 - b. The Smiths are granted a new use permit for 75,000 gpd (0.5 acre x 150,000 gad) for new lo'i kalo.
 - c. The Smiths are recognized as having a domestic use of 3,050 gpd (1.22 acres x 2,500 gad).
101. **SWUPAs 2307/2308N—Francisco Cerizo** (FOF 387)
- a. Cerizo appurtenant rights request is denied without prejudice. Parcel 12 is a portion of the konohiki award, for which the acreage and other contents are not known. *See* COL 61.
 - b. Cerizo is granted an existing use permit of 9,000 gpd (0.06 acres x 150,000 gpd).
 - c. Cerizo is granted a new use permit for 60,000 gpd (0.4 acres x 150,000 gad) for new lo'i kalo.
 - d. Cerizo is also recognized as having a domestic use currently of 2,850 gpd (1.14 acres x 2,500 gad). This amount will be reduced to 1,850 gpd (0.74 acre x 2,500 gad) when he converts 0.4 acres of his domestic garden into lo'i kalo. A permit will be issued for this use.
102. **SWUPA 2343N—Thomas Cerizo** (FOF 388)
- a. Parcel 14 is recognized as having 93,450 gpd (0.623 acre x 150,000 gad) in appurtenant rights.
 - b. Cerizo is granted a new use permit for 186,750 gpd (1.245 acre x 150,000 gad) for new lo'i kalo. 93,450 gpd is granted based on recognized appurtenant rights. The remainder, 93,300 gpd, has priority as a new use.

103. **SWUPA 2258—Jason Miyahira** (FOF 389)
- a. Parcel 9 (Lot A) is recognized as having appurtenant rights of 312,000 gpd (2.08 acres x 150,000 gad). Appurtenant rights for Parcels 10 and 21 were extinguished by the deed reservations in 1999.
 - b. Miyahira is granted an existing use permit of 18,750 gpd (0.125 acre x 150,000 gad) for existing lo‘i kalo. The full amount of 18,750 gpd is granted based on the recognized appurtenant rights for this parcel.
 - c. Miyahira is recognized as having a domestic use of 3,350 gpd (1.34 acres x 2,500 gad) for their yard and garden, for which a permit will be issued.
104. **SWUPA 2171—Renee Molina** (FOF 390)
- a. Parcel 9 (Lot B) is recognized as having appurtenant rights of 195,000 gpd (1.3 acres x 150,000 gad).
 - b. Molina is granted an existing use permit for 18,750 gpd (0.125 acre x 150,000 gad) for existing lo‘i kalo. 18,750 gpd is granted based on the recognized appurtenant rights for the parcel.
 - c. Molina is recognized as having a domestic use of 625 gpd (0.25 acre x 2,500 gad) for which a permit will be issued.
105. **SWUPA 3465N—Pauline Curry, Maile Gomes & Jane Laimana** (FOF 391)
- Because Curry, Gomes, and Laimana did not submit testimony or participate in the contested case hearing, their request for recognition of appurtenant rights is denied without prejudice. Similarly, their requests for a new use permit is denied without prejudice.
3. **Wailuku River**
- a. **Wailuku River**
106. **SWUPA 2304—Division of State Parks** (FOF 392)

- a. Parcel 12, wholly derived from LCA 3529:1, is recognized as having appurtenant rights of 217,500 gpd (1.45 acres x 150,000 gad).
- b. State Parks is issued an existing use permit for 4,200 gpd (0.028 acres x 150,000 gad) for lo‘i kalo. The 4,200 gpd is granted based on the recognized appurtenant rights.

107. **SWUPAs 2243/2244N—Ho‘oululāhui, LLC (John & Rose Marie Dewey)** (FOF 393)

- a. Appurtenant rights for Parcel 18 were extinguished at the time the deed conveying this property was issued by Wailuku Agribusiness in 2001.
- b. Ho‘oululāhui, LLC is granted permits for a total of 450,000 gpd (3.0 acres x 150,000 gad) consisting of the following:
 - i. An existing use permit of 12,000 gpd (0.08 acres x 150,000 gad) for lo‘i kalo.
 - ii. A new use permit of 438,000 gpd (2.92 acres x 150,000 gad) for new lo‘i kalo.

The 450,000 gpd are under the priority of traditional and customary practices.

- c. Ho‘oululāhui, LLC is recognized as having a domestic use of 5,000 gpd for its 3 acres.

108. **SWUPA 2370N—Francis Ornellas** (FOF 394)

- a. Parcel 2 has appurtenant rights of 51,000 gpd (.34 acres⁶¹ x 150,000 gad).
- b. Ornellas is granted a new use permit of 213,150 gpd (1.421 acres x 150,000 gad) for new lo‘i kalo. 51,000 gpd is granted based on the recognized appurtenant rights for Parcel 2. The remaining amount,

⁶¹ The amount of land in lo‘i kalo on Parcel 2 at the time of the Mahele is estimated to be 0.51 acres. The reservation of water rights by Wailuku Agribusiness was as to a one-third interest. 0.51 acres reduced by one-third equals 0.34 acres.

162,150 gpd, is granted under the priority of a traditional and customary practice.

- c. Ornellas is also recognized as having a domestic use of 600 gpd for a single-family home and garden (0.089 acres) for which a permit will be issued.

109. **SWUPA 2360N—Anthony Manoukian** (FOF 395)

Because Manoukian did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice. Similarly, his request for a new use permit is denied without prejudice.

110. **SWUPA 2371N—Kimberly Lozano** (FOF 396)

- a. Appurtenant rights for Parcels 1 and 10 were extinguished by way of the reservation in the deed conveying this property Wailuku Agribusiness in 2000.
- b. Lozano is granted a new use permit for 27,540 gpd (0.1836 acres x 150,000 gad) for new lo‘i kalo. The amount granted is under the priority of the exercise of a traditional and customary practice.
- c. Lozano is recognized as having a domestic use of 2,138 gpd (0.855 acre x 2,500 gad) for which a permit will be issued.

111. **SWUPA 2275—Duke & Jean Sevilla, Christina Smith, & County of Maui** (FOF 397)

- a. Appurtenant rights for Parcel 1 was extinguished by the deed from Wailuku Agribusiness in 2001. The request for appurtenant rights for Parcels 41 and 54 are denied without prejudice, as there is no information on the proportion of the 24,000 acres of Royal Patent Grant No. 3343 to Claus Spreckels that was in lo‘i kalo.
- b. The Sevilla ‘Ohana and Smith are issued an existing use permit of 49,500 gpd (0.33 acre x 150,000 gad) for lo‘i kalo on Parcels 41 and 54.

- c. The Sevilla ‘Ohana and Smith are recognized as having domestic uses of 1,200 gpd for two domestic gardens for which a permit will be issued.
- d. Per the applicants’ request, 1,800,000 gpd for 12 acres (12 acres x 150,000 gad) are offset by the permits issued under MDWS’s SWUPAs 2179/2179N’s total of 3.2 mgd (1.784 mgd + 1.416 mgd).

112. **SWUPA 3623N—Noelani & Allan Almeida & Gordon Almeida** (FOF 398)

- a. Parcels 22 and 23 have appurtenant rights of 354,750 gpd (2.365 acres x 150,000 gad).
- b. The Almeida ‘Ohana did not submit testimony or documentation of a new use other than in connection with their domestic use. Accordingly, the Almeida ‘Ohana’s new use application is denied without prejudice.
- c. The Almeida ‘Ohana are recognized as having a domestic use of 2,728 gpd (1.091 acres x 2,500 gad) for their domestic garden, for which a permit will be issued.
- b. **‘Īao-Maniania Ditch**

113. **SWUPAs 2189/2190N & 2196—Wailuku Country Estates Irrigation Company** (FOF 399)

- a. Amounts relating to the homeowner lots are summarized in Appendix 2: Summary of Wailuku Country Estates Irrigation Company (WCEIC) Appurtenant Rights and Permits. Each lot is identified by acreage, existing and new use requests, appurtenant rights, and permitted amounts. All uses are for agriculture and are allocated at the rate of 2,500 gad, recognized as reasonable uses for agricultural activities. The existing use permit is issued for existing uses that fall within a lot’s appurtenant rights, which total 195,026 gpd. New use permits are issued for new uses without appurtenant rights, which total 485,160 gpd.

- b. Lots with appurtenant rights are summarized in Appendix 3: Calculation of Appurtenant Rights Acreage for Wailuku Country Estates Irrigation Company (WCEIC) Lots. Appurtenant rights are equivalent to 43.79 acres, or 6.5685 mgd (43.79 acres x 150,000 gad). As summarized, *supra*, 53 homeowner lots have appurtenant rights, but 6 lots contain acreage so small that the right is functionally non-existent, and 3 have appurtenant rights pertaining to less than 0.1 acre. 3.35 acres of appurtenant rights, or 335,000 mgd, also pertain to 1.14 acres (114,000 gpd) of the 2.26-acre community park and 7 other non-homeowner lots.
- c. The permit for the common area is also summarized in Appendix 2 and explained as follows:
 - i. Existing use was 158,768 gpd for 32.5 acres, or 4,885 gad. This is clearly excessive and probably includes significant system losses, but there was no claim nor explanation for such losses.
 - ii. Of the alternative descriptions of the common area offered by WCEIC, the Commission accepts the following: 2.262 acres for a community park, 20 acres of roadside setbacks along six miles of roads (24-foot setback on the mauka side and 9.5-foot setback on the makai side), and 9 acres of lot drainage swales (not including 3.1 acres in lots 52 to 62). The common areas as described is 31.262 acres. The irrigation requirements for the common areas is 78,155 gpd (31.262 acres x 2,500 gad), which is an existing use.

An existing use permit for the common areas is granted for 78,155 gpd (31.262 acres x 2,500 gad).

- d. There are no other claims for new use except in connection with homeowner lots, for which water is permitted as set forth in Appendix 2.

114. **SWUPAs 2215/2216N—Gary & Evelyn Brito** (FOF 400)

- a. Parcel 29 is recognized as having appurtenant rights of 27,900 gpd (0.186 acres x 150,000 gad).

- b. The Britos are granted an existing use permit of 5,550 gpd (0.037 acre x150,000 gad) for lo‘i kalo.
- c. The Britos application for a new use permit is denied without prejudice.
- d. The Britos are also recognized as having a domestic use of 600 gpd for which a permit will be issued.

115. **SWUPA 2236—Valentine Haleakala** (FOF 401)

Because Haleakala did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice. Similarly, his request for an existing use permit and recognition of domestic use is denied without prejudice.

116. **SWUPAs 2256/2257N—Kenneth Mendoza** (FOF 402)

Because Mendoza did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice. Similarly, his request for an existing use permit is denied and his request for a new use permit is denied without prejudice.

c. **‘Īao-Waikapū Ditch**

117. **SWUPAs 2178/2179N—Maui County Department of Water Supply** (FOF 403)

- a. MDWS is issued permits for 1.784 mgd for existing use and 1.416 mgd for new use.
- b. Nearly two-thirds of MDWS’s customers are single- or multi-family households..
- c. None of the other possible sources of potable water are alternatives to surface water from Wailuku River but are additional sources to meet MDWS’s future demands. Even if recycled water from the Wailuku-Kahului WTP could eventually replace an estimated maximum of 0.601 mgd of current potable water use, there will still remain over 3 mgd of the WTP’s output of 4 mgd to be available to other, non-MDWS users if the logistics, costs, and apportionment of costs and water among users can be resolved.

118. **SWUPA 2339—Roger Yamaoka and Kevin Yamaoka** (FOF 404)
- a. Parcels 38 and 39 are not recognized as having appurtenant rights. The Yamaoka ‘Ohana can review their deeds and if they do not contain a reservation of water rights, they may refile for recognition of appurtenant rights.
 - b. The Yamaoka ‘Ohana are issued an existing use permit for 1,950 gpd for 1.350 acres of diversified agriculture on Parcels 38 and 39. The Commission notes that 1,950 gpd is within the diversified agriculture standard of 2,500 gad set forth in this case.
119. **SWUPA 2188—Leslie Vida, Jr.** (FOF 405)
- a. Parcel 91 is recognized as having appurtenant rights of 21,600 gpd (0.144 acres⁶² x 150,000 gad).
 - b. Vida is granted permits for a total of 5,475 gpd consisting of the following:
 - i. An existing use permit for 3,750 gpd (0.025 acre x 150,000 gad) for existing lo‘i kalo.
 - ii. A new use permit for 1,725 gpd (0.0115 acres x 150,000) for new lo‘i kalo.

Both of these uses are considered under the priority as traditional and customary practices.
 - c. Vida is also recognized as having domestic use of 775 gpd (0.31 acres x 2,500) for crops and medicinal plants for which a permit will be issued.
120. **SWUPAs 2292 & 2293—Donna Vida** (FOF 406)

⁶² Only 40 % of the entire LCA 76 from which Parcel 91 was derived was in lo‘i kalo with the remaining 60% in farm and house. Parcel 91’s 0.36 acres, when multiplied by 40%, results in 0.144 acres that were in lo‘i kalo at the time of the Māhele.

- a. Parcels 45 and 56 are recognized as having appurtenant rights of 58,500 gpd (0.39 acre⁶³ x 150,000).
- b. Vida did not submit testimony or documentation of an existing use other than in connection with her domestic use. Accordingly, Vida's existing use application is denied.
- c. Vida is recognized as having a domestic use of 2,400 gpd ((0.89 acre x 2,500 gad for Parcel 56) + (0.07 acres x 2,500 gad for Parcel 45)) for landscaping, fruit and medicinal trees and plants, livestock, lawn, and the 'ohana cemetery.

121. **SWUPA 2303—Claire Pinto** (FOF 407)

- a. Parcels 41 and 51 are recognized as having appurtenant rights of 68,400 gpd (0.456 acre⁶⁴ x 150,000 gad).
- b. Pinto did not submit testimony or documentation of an existing use other than in connection with her domestic use. Accordingly, Pinto's existing use application is denied.
- c. Pinto is recognized as having a domestic use is 2,750 gpd (1.1 acres x 2,500 gad).

122. **SWUPAs 2350/2546N—Towne Realty/Wailuku Kuakahi, LLC** (FOF 408)

Because Towne Realty did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied and its request for a new use permit is denied without prejudice.

123. **SWUPA 2345—Stanford Carr Development, LLC** (FOF 409)

⁶³ Only 40 % of the entire LCA 76 from which Parcels 45 and 56 were derived was in lo'i kalo with the remaining 60% in farm and house. Parcel 45's 0.07 acres, when multiplied by 40%, results in 0.03 acres and Parcel 56's 0.9 acres when multiplied by 40% results in 0.36 acres.

⁶⁴ Only 40 % of the entire LCA 76 from which Parcels 41 and 51 were derived was in lo'i kalo with the remaining 60% in farm and house. Parcel 41's 0.48 acres, when multiplied by 40%, results in 0.192 acres and Parcel 51's 0.66 acres when multiplied by 40% results in 0.264 acres.

Because Stanford Carr Development, LLC did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied.

124. **SWUPAs 2349/2495N—Endurance Ii Wai Hui** (FOF 410)

Because Endurance Investors did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied and its request for a new use permit is denied without prejudice.

125. **SWUPA 2164—Waiolani Mauka Community Association** (FOF 411)

Because Waiolani Mauka did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied.

126. **SWUPA 2200N—Emmanuel Lutheran Church & School** (FOF 412)

Because Emmanuel Lutheran Church did not submit testimony or participate in the contested case hearing, its request for a new use permit is denied without prejudice.

127. **SWUPA 2183—Kihei Garden & Landscaping Company, LLP** (FOF 413)

Kihei Garden is granted an existing use permit for 33,261 gpd for 15 acres of diversified agriculture.

128. **Waikapu Ranch Applicants**

The following six applicants are owners of 6 of the 8 lots in the Waikapu Ranch subdivision and have applied for recognition of appurtenant rights and new use permits. Waikapu Ranch had filed an existing use SWUPA but was instructed by the Commission to file a new use SWUPA after the existing use SWUPA was found to be incomplete and not accepted.

Subsequently, the 6 owners filed individual new use SWUPAs and claims for appurtenant rights.

129. **SWUPA 3671N—Kurt & Betsy Sloan** (FOF 415)

a. Lot 5's appurtenant rights were extinguished by the reservation in the deed made in 2004.

b. The Sloan 'Ohana are granted a new use permit for 2,167 gpd (4 acres x 541.75 gad) for diversified agriculture.

130. **SWUPA 3665N—Ken & Saedene Ota** (FOF 416)
- a. The request for recognition of appurtenant rights for Lot 3 is denied without prejudice.
 - b. The Ota ‘Ohana are granted a new use permit for 5,668 gpd (4 acres x 1,417 gad) for a tree nursery.
131. **SWUPA 4442N—Gerald Lau Hee** (FOF 417)
- a. There is no evidence of water use on Lot 1 at the time of the Māhele, so recognition of appurtenant rights for Lot 1 is denied without prejudice.
 - b. Lau Hee is granted a new use permit for 1,668 gpd (4 acres x 417 gad) for fruit trees.
132. **SWUPA 4443N—Roy Kitagawa** (FOF 418)
- a. Because Kitagawa did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice.
 - b. As a result of the withdrawal of the new use SWUPA, no action is being taken on Kitagawa’s new use permit application.
133. **SWUPA 4444N—Anthony Takitani** (FOF 419)
- a. Lot 7’s appurtenant rights were extinguished by the reservation of water rights in the 2004 deed.
 - b. Takitani is granted a new use permit for 2,833 gpd (3.5 acres x 769 gad plus 0.5 acres x 283 gad) for diversified agriculture.
134. **SWUPA 4445N—SPV Trust (Shane Victorino)** (FOF 420)
- a. Lot 6’s appurtenant rights were extinguished by the reservation of water rights in 2004.
 - b. SPV Trust is granted a new use permit of 1,668 gpd (4 acres x 417 gad) for diversified agriculture (fruit trees).
135. **SWUPAs 2207/2208N—Makani Olu Partners** (FOF 421)
- a. Parcel 18 has appurtenant rights of 7,603,500 gpd (50.69 acres x 150,000 gad).
 - b. Makani Olu is granted permits as follows:

Parcel 14: An existing use permit of 3,000 gpd (1.2 acres x 2,500 gad) for fruit trees, ornamental plants, nursery greenhouse, and cemetery landscape. The requested amounts were excessive and equivalent to 3,867 gad, 4,000 gad, and 6,000 gad, respectively.

Parcel 18: An existing use permit for 9,600 gpd ((.5 acres x 2,500 gad for bananas, papayas, and tree stock nursery) plus (4 acres x 2,087.50 gad for livestock feed and forage pasture)).

The requested amounts for the 0.25 acres of bananas/papayas and 0.25 acre of a tree stock nursery were excessive and equivalent to 4,800 gad and 4,000 gad, respectively.

The existing use of 9,600 gpd is granted based on the recognized appurtenant rights for Parcel 18.

- c. A new use permit for 123,101 gpd (58.9 acres x 2,090 gad) for feed/forage pasture, which is the rate of current use for 4.0 acres of pasture. The requested amount of 453,530 gpd was excessive and equivalent to 7,700 gad. The new use is granted based on the recognized appurtenant rights for Parcel 18.
- d. Makani Olu is recognized as having domestic use of 2,500 gpd (1.0 acres x 2,500 gad) for house site landscape and will be issued a permit for such use.

136. **SWUPA 2204—Luke McLean** (FOF 422)

- a. Parcel 57 is recognized as having appurtenant rights of 128,250 gpd (0.855 acres x 150,000 gad).
- b. McLean is granted an existing use permit for 150,000 gpd (1 acre x 150,000 gad) for lo‘i kalo that he may have open or intends to open. McLean does not explain how he plans to open one acre of lo‘i kalo and still maintain his current plantings on the 1.14 acres of land. 128,250 gpd is granted under the recognized appurtenant rights for Parcel 57. The entire 150,000 gpd is granted under the priority for the exercise of traditional and customary practices.

The remaining 0.14 acre of land is presumed to being used for domestic uses.

- c. McLean is recognized as having domestic uses of 350 gpd of domestic use (0.14 acres x 2,500 gad) for which a permit will be issued.

137. **SWUPA 2440N—Spencer Homes** (FOF 423)

Because Spencer Homes did not submit testimony or participate in the contested case hearing, its request a new use permit is denied without prejudice.

138. **SWUPA 2191—Charles Dando Sr.** (FOF 424)

- a. Dando is recognized as having a domestic use of 250 gpd (0.1 acre x 2,500 gad) for which a permit will be issued.
- b. Dando’s request for an existing use permit is denied.

139. **SWUPA 2154—Rojac Trucking, Inc.** (FOF 425)

Because Rojac Trucking did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied.

4. Waikapū Stream

a. South Waikapū Ditch

- 140. The surface water sources for the following multiple SWUPAs from Waikapu Properties are Waikapū Stream and Waihe‘e Ditch, which contains waters from all of the streams and rivers. They are included here under South Waikapū Ditch, because Waikapu Properties’ original SWUPAs received water from Waikapū Stream through the South Waikapū Ditch’s Reservoir 1. When HC&S closed its sugar cane operations and returned the leased ‘Īao-Waikapū fields, Waikapu Properties amended its SWUPAs, which now includes HC&S’s former SWUPA 2205 for the ‘Īao-Waikapū fields, and intends to move its operations largely to the ‘Īao-Waikapū fields.

141. **SWUPAs 2205, 2356/2297N, 3471N, and 3472N—Waikapu Properties** (FOF 427)

- a. Parcel 3 is recognized as having appurtenant rights of 1,113,000 gpd (7.42 acres x 150,000 gad).⁶⁵
- b. Waikapu Properties is granted an existing use permit of 1,838 gpd (73.5 acres x 25 gad for cattle drinking water).
- c. Waikapu Properties is granted a total new use permit of 1,815,937 gpd ((722.50 acres x 2,500 gad for diversified agriculture) plus (403.9 acres x 25 gad for cattle drinking water)).
- d. Alternative sources:
 - i. The Commission may prioritize between trust resources and allocate non-potable water for agricultural needs instead of potable water which could be used to satisfy the public's future drinking water needs. The Commission has ruled, and the Court has confirmed, that when non-potable surface water and potable ground water are both available for non-potable purposes, the potable water is not practicably available. (*Waiāhole III*, 130 Hawai'i 346, 310 P.3d 1047.)
 - ii. Therefore, even though Waikapu Properties' two, and possibly three, potable wells may be available, they do not represent a practicable alternative.
 - iii. The two and possibly third agricultural wells may be practical alternatives, and Waikapu Properties should inform the Commission on the status of these wells as their development progresses.
 - iv. Recycled wastewater from a future housing development is too far off in the future to consider.

142. **SWUPAs 2336/2337N—Colin Kailiponi & Alfred Santiago** (FOF 428)
 Because Kailipono 'Ohana did not submit testimony or participate in the contested case hearing, their request for recognition of appurtenant rights is denied without prejudice. Similarly, their request for an existing use

⁶⁵ The Commission need not address the reservation of appurtenant rights for Parcel 36's 0.72 acres in 2003, as that request for appurtenant rights has been withdrawn without prejudice, as has all other appurtenant rights originally claimed by Waikapu Properties.

permit is denied and their request for a new use permit is denied without prejudice.

143. **SWUPAs 2260/2261N—Ho‘okahi Alves (Miyashiro Trust)** (FOF 429)

- a. Parcel 27 is recognized as having appurtenant rights of 106,500 gpd (0.710 acres x 150,000 gad).
- b. Alves is granted a new use permit for 75,000 gpd (0.5 acre x 150,000 gad) for lo‘i kalo. This full amount is granted based on the recognized appurtenant rights for Parcel 27. This amount is also under the priority as the exercise of traditional and customary rights.
- c. Alves is also recognized as having domestic use of 600 gpd for which a permit will be issued.

144. **SWUPAs 2217/2218N—John Minamina Brown Trust/Crystal Smythe, Trustee** (FOF 430)

- a. Parcels 25 and 29 are recognized as having appurtenant rights of 187,500 gpd (1.25 acres x 150,000 gad).
- b. Smythe is granted permits for a total of 172,500 gpd consisting of the following:
 - i. An existing use permit of 45,000 gpd (0.30 acre x 150,000 gad) for existing lo‘i kalo; and
 - ii. A new use permit of 127,500 gpd (0.85 acre x 150,000 gad) for new lo‘i kalo.

The entire 172,500 gpd is granted based on the recognized appurtenant rights for Parcels 25 and 29. This amount is also under the priority as the exercise of traditional and customary rights.

- c. Smythe is also recognized as having domestic uses of 600 gpd for which a permit will be issued.

145. **SWUPA 2366N—George & Yoneko Higa** (FOF 431)

- a. Parcels 3 and 4 are recognized as having appurtenant rights of 156,150 gpd (1.041 acres x 150,000 gad).

- b. The Higa ‘Ohana are recognized as having domestic use of 2,500 gpd (1 acre x 2,500 gad) for garden crops for which a permit will be issued.
 - c. The Higa ‘Ohana request for a new use permit is denied without prejudice.
146. **SWUPA 2368—Teruo Kamasaki** (FOF 432)
- a. Parcel 10 has appurtenant rights of 53,250 gpd (0.355 acres x 150,000 gad).
 - b. McCarthy’s request for an existing use permit is denied. Even though it was filed before the existing use application deadline of April 30, 2009, there was no existing use on April 30, 2008, the effective date of designation for Nā Wai ‘Ehā as a surface Water Management Area, because use ceased in July 2004.
 - c. McCarthy is recognized as having a domestic use of 1,675 gpd (0.67 acres x 2,500 gad).
147. **SWUPA 2155—Clayton Suzuki** (FOF 433)
- a. Appurtenant rights for Parcels 9, 13, and 22 were extinguished by the reservation of water in the deed from Wailuku Agriculture in 2003.
 - b. The Suzukis are issued an existing use permit for 8,350 gpd (3.34 acres x 2,500 gad) for diversified agriculture.
 - c. The Suzukis are recognized as having domestic uses of 2,500 gpd (1 acre x 2,500 gad) for a domestic garden for which they will be issued a permit.
148. **SWUPA 2156—Nadao Makimoto** (FOF 434)
- a. Parcel 21 is recognized as having appurtenant rights of 43,950 gpd (0.293 acres x 150,000 gad).
 - b. Makimoto is issued an existing use permit for 1,000 gpd (0.4 acres x 2,500 gad) for diversified agriculture. This amount is granted based on the recognized appurtenant rights for Parcel 21.

- c. Makimoto is recognized as having a domestic use of 463 gpd (0.185 acres x 2,500) for landscaping.

b. Waikapū Stream

149. **SWUPA 2163—David Niehaus** (FOF 435)

Because Niehaus did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice. Similarly, his request for an existing use permit is denied.

c. North Waikapū ‘Auwai

150. **SWUPA 2276—Ione Shimizu** (FOF 436)

- a. Parcel 31 is recognized as having appurtenant rights of 69,000 gpd (0.46 acres x 150,000 gad).
- b. Shimizu is granted an existing use permit for 4,800 gpd (0.032 acre x 150,000 gad) for lo‘i kalo.
- c. Shimizu is also recognized as having a domestic use of 1,210 gpd (0.484 acre x 2,500 gad) for her domestic garden for which a permit will be issued.

151. **SWUPA 2268—Katherine Riyu** (FOF 437)

- a. Appurtenant rights for Parcel 28 were extinguished by the deed from Wailuku Sugar Company to Riyu’s husband.
- b. Riyu is granted an existing use permit of 195,750 gpd (1.305 acre x 150,000 gad) for lo‘i kalo.
- c. Riyu is recognized as having a domestic use of 600 gpd for her garden for which a permit will be issued.

152. **SWUPA 2338—Melvin Riyu and Judith Yamanoue** (FOF 438)

- a. Parcels 27 and 41 are recognized as having appurtenant rights of 150,000 gpd (1.0 acre x 150,000 gad).
- b. Riyu and Yamanoue are granted an existing use permit of 75,000 gpd (0.5 acre x 150,000 gad) for lo‘i kalo. The 75,000 gpd is granted based on their recognized appurtenant right for Parcels 27 and 41.

- c. Riyu and Yamanoue are recognized as having a domestic use of 600 gpd for their garden for which a permit will be issued.
153. **SWUPA 2277—Warren Soong** (FOF 439)
- a. Parcel 47 is recognized as having appurtenant rights of 127,500 gpd (0.85 acre x 150,000 gad).
 - b. Soong’s request for an existing use permit is denied.
 - c. Soong is recognized as having domestic use of 600 gpd for lawn and garden for which a permit will be issued.
154. **SWUPA 2311—Theodore & Zelig Harders** (FOF 440)
- a. Parcel 39 is recognized as having appurtenant rights of 34,950 gpd (0.233 acre x 150,000 gad).
 - b. The Harders’ request for an existing use permit is denied.
 - c. The Harders are recognized as having a domestic use of 600 gpd for their garden and lawn for which a permit will be issued.
155. **SWUPAs 2240/3467N—Theodore & Zelig Harders Family Limited Partnership** (FOF 441)
- a. Parcel 28 is recognized as having appurtenant rights of 1,135,500 gpd (7.57 acres x 150,000 gad).
 - b. T&Z Harders are granted permits of 757,500 consisting of the following:
 - i. An existing use permit of 7,500 gpd (3 acres x 2,500 gad) for their non-commercial garden; and
 - ii. A new use permit of 750,000 gpd (5 acres x 150,000 gad) for lo‘i kalo.

All 757,500 gpd is granted based on their appurtenant rights. In addition, these uses are considered under the priority as the exercise of traditional and customary practices.
156. **SWUPAs 2332/2333N—Hōkūao & Alana Pellegrino** (FOF 442)
- a. Appurtenant rights to Parcel 20 were extinguished by the assignment of water rights by Edmund Rogers to Wailuku Sugar Co. in 1967.

- b. Appurtenant rights are recognized for Parcels 23 and 26 in the total amount of 420,750 gpd (Parcel 23: 320,100 gpd (2.134 acres x 150,000 gad) and Parcel 26: 100,650 gpd (0.671 acre x 150,000 gad)).
 - c. The Pellegrino ‘Ohana are granted an existing use permit of 31,500 gpd consisting of the following:
 - i. 1,500 gpd (0.6 acre x 2,500 gad) for diversified agriculture
 - ii. 30,000 gpd (0.2 acre x 150,000 gad) for existing lo‘i kalo
 - d. The Pellegrino ‘Ohana are granted a new use permit of 93,275 gpd consisting of the following:
 - i. 93,150 gpd (0.621 acre x 150,000 gad) for new lo‘i kalo
 - ii. 125 gpd (0.05 acre x 2,500) for new garden
 - e. The Pellegrino ‘Ohana are recognized as having a domestic use of 600 gpd for their existing garden for which a permit will be issued.
- 124,775 gpd is granted based on the recognized appurtenant rights for Parcels 23 and 26. Of this amount, 123,150 gpd is also considered the exercise of traditional and customary practices.

157. **SWUPA 2239—Theodore & Zelig Harders** (FOF 443)

- a. Appurtenant rights to Parcel 16 were extinguished by the assignment of water rights by Edmund Rogers to Wailuku Sugar Co. in 1967.
- b. The Harders’ request for an existing use permit is denied.
- c. The Harders are recognized as having domestic use of 804 gpd (0.3214 acre x 2,500 gad) for a garden and lawn for which a permit will be issued.

158. **SWUPA 2237—Karl & Lee Ann Harders** (FOF 444)

- a. Appurtenant rights to Parcel 16 were extinguished by the assignment of water rights by Edmund Rogers to Wailuku Sugar Co. in 1967.
- b. The Harders’ request for an existing use permit is denied.

- c. The Harders are recognized as having a domestic use of 200 gpd (0.08 acre x 2,500 gad) for a garden and lawn for which a permit will be issued.
159. **SWUPA 2235—Russell Gushi** (FOF 445)
- a. Appurtenant rights to Parcel 15 were extinguished by the reservation of water rights by Edmund Rogers in 1967.
 - b. Gushi’s request for an existing use permit is denied.
 - c. Gushi is recognized for domestic use of 798 gpd (0.319 acre x 2,500 gad) for a garden which a permit will be issued.
160. **SWUPA 2271—Waldemar & Darlene Rogers** (FOF 446)
- a. Appurtenant rights to Parcel 12 were extinguished by the assignment of water rights by Edmund Rogers to Wailuku Sugar Co.
 - b. The Rogers ‘Ohana’s request for an existing use permit is denied.
 - c. The Roger ‘Ohana are recognized as having a domestic use of 363 gpd (0.145 acre x 2,500 gad) for a garden and lawn for which a permit will be issued.
161. **SWUPAs 2213/2214N—Alan Birnie**⁶⁶ (FOF 447)
- a. Appurtenant rights to Parcel 10 were extinguished by the assignment of water rights by Edmund Rogers to Wailuku Sugar Co. in 1967.
 - b. Birnie’s request for an existing use permit is denied.
 - c. Birnie is issued a new use permit of 675 gpd (0.0045 acre x 150,000 gad) for lo‘i kalo.
 - d. Birnie is recognized as having a domestic use of 505 gpd (0.202 acre x 2,500 gad) for a garden for which a permit will be issued.
162. **SWUPA 2211—Dorothy Bell** (FOF 448)

⁶⁶ The hearing transcript incorrectly labels Birnie’s testimony as that of Lester Nakama, Tr., 9/19/16, p. 63, l. 3 to p. 71, l. 8.

Because Bell did not submit testimony or participate in the contested case hearing, her request for recognition of appurtenant rights is denied without prejudice. Similarly, her request for an existing use permit is denied.

163. **SWUPA 2212—Douglas Bell** (FOF 449)

- a. Parcel 8 is recognized as having appurtenant rights of 51,000 gpd (0.34 acre x 150,000 gad), subject to Bell's submitting his deed to the Commission, complete with any and all attachments that are part of the document.
- b. Bell's request for an existing use permit is denied.
- c. Bell is recognized as having domestic use of 850 gpd (0.34 acres x 2,500 gad) for his garden and lawn for which a permit will be issued.

164. **SWUPA 2238—Theodore & Zelig Harders Family Limited Partnership** (FOF 450)

- a. Appurtenant rights to Parcels 6 and 7 were extinguished by the assignment of water rights by Edmund Rogers to Wailuku Sugar Co. in 1967.
- b. T&Z Harders' request for an existing use permit is denied.
- c. T&Z Harders are recognized as having domestic uses of 1,800 gpd (600 gpd x 3 houses) for which a permit will be issued.

165. **SWUPA 2259—Jerri Young (Miyamoto)** (FOF 451)

- a. Appurtenant rights to Parcel 9 were extinguished by the 1967 deed from Edmund Rogers which contained a reservation of water rights.
- b. Young's request for an existing use permit is denied.
- c. Young is recognized as having domestic use of 375 gpd (0.15 x 2,500 gad) for a garden and lawn, for which a permit will be issued.

166. **SWUPA 2224—James Dodd** (FOF 452)

- a. Appurtenant rights to Parcel 5 were extinguished by the 1967 deed reserving water rights to Wailuku Sugar.

- b. Dodd's request for an existing use permit is denied.
- c. Dodd is recognized as having a domestic use of 650 gpd for his (0.26 acre x 2,500 gad) garden, for which he will be issued a permit.

167. **SWUPA 2230—Patricia Federcell** (FOF 453)

- a. Parcel 1 is recognized as having appurtenant rights of 143,700 gpd (0.958 acres x 150,000 gad). Before the Commission recognizes such rights, Federcell must provide a copy of her deed to support her statement that the deed does not have a reservation of appurtenant rights as many of the surrounding properties are known to have a reservation of water rights in their deeds.
- b. Federcell is recognized as having a domestic use of 625 gpd (0.25 acre garden x 2,500 gad) for her garden for which a permit will be issued.

168. **SWUPA 2315—Leinaala Kihm** (FOF 454)

Because Khim did not submit testimony or participate in the contested case hearing, her request for recognition of appurtenant rights is denied without prejudice. Similarly, her request for an existing use permit is denied.

169. **SWUPA 2354—Fong Construction Co.** (FOF 455)

Because Fong Construction Co. did not submit testimony or participate in the contested case hearing, its request for an existing use SWUPA is denied.

170. **SWUPA 2180—Hawaiian Cement** (FOF 456)

Because Hawaiian Cement did not submit testimony or participate in the contested case hearing, its existing use SWUPA is denied.

171. **SWUPA 2352—U.S. Fish & Wildlife Service** (FOF 457)

Because the USFWS did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied.

5. Multiple Sources

a. Waihe'e Ditch

172. The 'Īao-Maniania Ditch, which drops water from Wailuku River into the Waihe'e Ditch, is now the first place that the Waihe'e Ditch carries water other than Waihe'e River water.

173. **SWUPA 2142—Hale Mua Properties** (FOF 460)

Because Hale Mua Properties did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied.

174. **SWUPA 2351N—Wahi Ho'omalua LP** (FOF 461)

- a. Appurtenant rights for Parcel 26 (LCA 3456) were extinguished when Parcel 26's water rights were reserved in 1924.
- b. Parcel 1 is recognized as having combined appurtenant rights of 3.3345 mgd (22.23 acres x 150,000 gad)
- c. Wahi Ho'omalua is granted a new use permit of 783,000 gpd consisting of the following:
 - i. A new use permit for lo'i kalo of 363,000 gpd (2.42 acres x 150,000 gad); and
 - ii. A new use permit for diversified agriculture of 420,000 gpd (168 acres x 2,500 gad).
- d. While the exercise of appurtenant rights is limited to the lands from which those rights are derived, permits are issued on TMKs and not to specific portions of TMKs. Thus, although the application identified not only specific LCAs but also the amount of land within each LCA on which the permit would be exercised, the appurtenant right may be exercised on any of the LCAs with recognized appurtenant rights, limited only by the maximum right attached to any recognized LCA.

i. Pi'ihana-Field 49 Kuleana Pipe

175. The Pi'ihana-Field 49 Kuleana Pipe carries water from the Waihe'e Ditch to the following kuleanas:

176. **SWUPA 2192—Charles Dando Sr.** (FOF 463)
- a. Dando did not participate in the provisional approval process and does not request recognition of appurtenant rights.
 - b. Dando’s request for an existing use permit is denied.
 - b. Dando is recognized as having a domestic use of 1,250 gpd (0.5 acre x 2,500 gad), for which a permit will be issued.
177. **SWUPA 2273/2274N—Alfred Santiago** (FOF 464)
- a. Parcels 22 and 27 are recognized as having appurtenant rights of 243,900 gpd (1.626 acres x 150,000 gad).
 - b. Santiago’s request for an existing use permit is denied.
 - c. Santiago is granted a new use permit of 225,000 gpd (1.5 acres x 150,000 gad). All of the 225,000 gpd is granted as part of the recognized appurtenant rights.
178. **SWUPA 2043—El Ranchitos DeMello (Santiago)** (FOF 465)
- This SWUPA was filed for the same two properties as for SWUPAs 2273/2274N—Alfred Santiago (immediately *supra*), but Alfred Santiago is pursuing the applications after consultation with the property owner, El Ranchitos DeMello, because Santiago has been cultivating this land for decades.
179. **SWUPA 2287—Michelle Haller** (FOF 466)
- a. Because documents were not submitted during the provisional approval process, the request for recognition of appurtenant rights is denied without prejudice.
 - b. Haller is granted an existing use permit for 19,600 gpd based on historical metered use, which is well below the maximum duty for diversified agriculture for 31 acres.
180. **SWUPA 2223—Winifred & Gordon Cockett** (FOF 467)
- a. Parcel 8 is recognized as having appurtenant rights of 97,500 gpd (0.65 acre x 150,000 gad).
 - b. The Cockett ‘Ohana’s request for an existing use permit is denied.

- c. The Cockett ‘Ohana are recognized as having a domestic use of 785 gpd (0.314 acre x 2,500 gad) for a garden, for which a permit will be issued.

- ii. **Wailuku Town Kuleana Ditch**

- 181. The Wailuku Town Kuleana Ditch is next on the Waihe‘e Ditch
- 182. **SWUPA 2181—Kaanapali Kai** (FOF 469)
Kaanapali Kai is granted an existing use permit for 4,595 gpd based on her metered use.
- 183. **SWUPAs 2209/2210N—Vernon Bal** (FOF 470)
Because Bal did not submit testimony or participate in the contested case hearing, his request for recognition of appurtenant rights is denied without prejudice. Similarly, his request for an existing use permit is denied and his request for a new use permit is denied without prejudice.
- 184. **SWUPAs 2241/2242N—Mary Ann Velez (Higa)** (FOF 471)
 - a. Parcels 16 and 17 are recognized as having appurtenant rights of 136,950 gpd (0.913 acre x 150,000 gad).
 - b. Velez’s request for an existing use permit is denied.
 - c. Velez is granted a new use permit of 69,000 gpd (0.46 acre x 150,000 gad) for new lo‘i kalo. The 69,000 gpd is granted based on the recognition of appurtenant rights to Parcels 16 and 17.
 - d. Velez is also recognized as having a domestic use of 975 gpd (0.39 acre x 2,500 gad) a home garden, for which a permit will be issued.
- 185. **SWUPA 2247 &2248N—Jordanella Ciotti** (FOF 472)
 - a. Parcel 19 is recognized as having appurtenant rights of 34,500 gpd (0.23 acres x 150,000 gad).
 - b. Ciotti is granted a permit for 8,265 gpd consisting of the following:
 - i. An existing use permit of 375 gpd (.0025 acre x 150,000 gad) for lo‘i kalo; and
 - ii. A new use permit of 7,890 gpd (.0526 acre x 150,000 gad) for lo‘i kalo.

8,265 gpd is granted based on the recognized appurtenant rights for Parcel 19.

- c. Ciotti is recognized as having a domestic use of 989 gpd (0.3957 acre x 2,500 gad) for a garden, for which a permit will be issued.

186. **SWUPAs 2245/2246N—Greg Ibara** (FOF 473)

- a. Parcel 20 is recognized as having appurtenant rights of 175,650 gpd (1.171 acres x 150,000 gad).
- b. Ibara is granted a permit of 4,050 gpd consisting of the following:
 - i. An existing use permit of 1,050 gpd (0.007 acre x 150,000 gad) for existing lo‘i kalo; and
 - ii. A new use permit of 3,000 gpd (0.02 acre x 150,000 gad) for new lo‘i kalo.

The 4,050 gpd is granted based on the appurtenant rights recognized for Parcel 20.

iii. Waihe‘e Ditch: After the intake on Waikapū Stream

187. After the intake on Waikapū Stream, the remaining SWUPAs are:

188. **SWUPA 2203—Maui Tropical Plantation** (FOF 475)

- a. MTP withdrew its request for recognition of appurtenant rights.
- b. MTP is granted an existing use permit of 124,532 gpd for its metered use for 59.054 acres.

189. **SWUPA 2186—MMK Maui** (FOF 476)

- a. MMK did not claim appurtenant rights.
- b. MMK’s request for a permit for 1.25 mgd, based in part on dry years as well as average years, is similar to requesting priority access to water during periods of water shortage over other permittees in advance (*See* HRS § 174C-62) or to being granted a water reservation, for which rulemaking is required (*see* HRS § 174C-49(d)). Such a request is not a reasonable-beneficial use.
- c. MMK’s lowest use of 1.037 mgd equates to 3,400 gad which the Commission finds is also not a reasonable-beneficial use. There is no reason to differentiate and give a higher water duty to a

recreational use than to diversified agriculture. The Commission will recognize MMK's use of 305 acres for turf and miscellaneous landscaping at the same duty as diversified agriculture.

- d. MMK is granted an existing use permit for 762,500gpd (305 acres x 2,500 gad).

190. **SWUPA 2151—Pohakulepo Recycling LLC** (FOF 477)

Pohakulepo Recycling, LLC is granted an existing use permit for 8,555 gpd for its metered use over 14.8 acres.

191. **SWUPA 2272—Nobriga's Ranch** (FOF 478)

Because Nobriga's Ranch did not submit testimony or participate in the contested case hearing, its request for an existing use permit is denied.

b. Spreckels Ditch

192. On the Spreckels Ditch, after the intakes from South Waiehu Stream and Wailuku River and the Hopoi chute from the Waihe'e Ditch, the only remaining SWUPA is Mahi Pono at the terminus of what used to be the Waiale Reservoir.

193. **SWUPA 2206-Mahi Pono** (FOF 480.)

- a. Mahi Pono's total irrigation requirement is 16.60 mgd.
- b. Mahi Pono's system losses are 2.15 mgd.
- c. Mahi Pono's alternative sources are:
 - i. 0.1 mgd from Mahi Pono's 'Iao Tunnel.
 - ii. 3 mgd from Well No. 7.
- a. The Commission, in considering nonpotable resources for irrigation, must balance between competing interests. Operationally, this may mean the use of both non-potable resources, which can only be determined by an analysis of the specific circumstances of each case to determine the amount of each competing resource which is not "practicably available," *supra*, COL 110.
 - 1. Surface water would be available for Mahi Pono's Waihe'e-Hopoi fields only after the IIFS are met, offstream uses of higher priority are met, and water is allocated between offstream uses of equal priority.

2. For water from Well No. 7, water would be available after considering costs, technology, and logistics, and the sustainable yield of the aquifer.
 3. After determining the amount of water that is reasonable and beneficial to irrigate the Waihe'e-Hopoi fields, surface water must be offset by the contribution from other sources that are practicably available.
- b. Cost is the only consideration that Mahi Pono cites as making water from Well No. 7 not "practicably available," as logistics and technology are already in place; i.e., a new pump and pipeline. But Mahi Pono only cites costs for 18.5 mgd or 9 mgd, which, when used, would mean that the Waihe'e-Hopoi fields would be in complete or at least in substantial production and producing income. Currently, less than 200 acres are in experimental plantings, which would be using only approximately 0.955 mgd (200 acres x 4,776 gad), which Mahi Pono estimates would cost \$178 per million gallons of water. There is no indication at what point pumping costs for Well No. 7, without offsetting income, would cause Mahi Pono to cease activities on the 3,650 acres of the Waihe'e-Hopoi fields if surface water was not available.
 - c. What limits the practical availability of brackish water from Well No. 7 is the sustainable yield for the underlying Kahului Aquifer, which is 3 mgd from natural recharge.
 - d. Recharge from irrigation is currently unknown but the Commission had determined, and Mahi Pono had confirmed, that total yield was a maximum of 18.5 mgd on a sustainable daily basis when sugar cane was being irrigated at rates determined by the Commission to have been excessive.
 - e. Currently, only a few hundred acres are being irrigated and at about 80% of the reasonable and necessary irrigation rate determined by the Commission for sugar cane. Thus, while research

and testing are being conducted and expansion of acres under cultivation proceeds gradually, irrigation recharge will be minimal or even non-existent.

- f. As acres under active cultivation increases, recharge is expected to increase in some direct proportion to irrigation—though at rates significantly less than under sugar cane irrigation—making more brackish water available from Well No. 7. But as more brackish water is used from Well No. 7 to offset surface waters, there will be less recharge. Therefore, the contribution of Well No. 7 to irrigation requirements would be constantly changing, and the equilibrium point between the two may never be known, much less achieved.
- d. Mahi Pono is issued an existing use permit for 15.65 mgd⁶⁷ which consists of 13.5 mgd for irrigation of 3,650 acres of the Waihe'e-Hopoi fields (3,650 ac x 2,500 gpd = 9,125,000 gpd) and 2.15 mgd in system losses.
- e. In addition to the standard conditions, the permit is subject to the following special conditions:
 - i. Mahi Pono will coordinate its and other down-ditch permittees' day-to-day water requirements such that Mahi Pono will utilize water in the Waihe'e Ditch (through the Hopoi Chute, which drops water down to the Spreckels Ditch near the latter's terminus) without negatively impacting down-ditch permittees' allocations.
 - ii. To prevent waste, Mahi Pono is permitted to use any and all waters that reach the terminus of the Spreckels Ditch (previously ending in the Waialae Reservoir, which is now being bypassed).
 - iii. Although Mahi Pono is permitted 13.5 mgd of surface waters to irrigate its Waihe'e-Hopoi fields, when Mahi Pono's use of surface water reaches half of its permitted amount, or approximately 7 mgd, it will be required to use

⁶⁷ Total irrigation requirements of 16.60 mgd are reduced by 0.1 mgd from Mahi Pono's 'Iao Tunnel and 3 mgd from Well No. 7's natural sustainable yield.

Well No. 7 to the point that the brackish well water becomes unusable for irrigation.

Without significant recharge from irrigation, the yield from Well No. 7 cannot be expected to be significantly higher than the natural recharge. The permitted amount of 13.5 mgd already contains the discount from 3 mgd of the Kahului Aquifer's natural recharge. Thus, if significant increase in recharge is to occur, significant overlying irrigation has to occur. There is a new, lower, and unknown yield from Well No. 7 than what was historically achieved.

- iv. As a condition of this permit, Mahi Pono is required to gage and continuously monitor with the installation of a parshall flume or a Commission staff approved water meter, at the following locations:
 - 1. Spreckels Ditch at South Waiehu Stream (CWRM gage 6-63)
 - 2. Spreckels Ditch Intake at Wailuku (CWRM gage 6-18)
 - 3. South Waiehu 'Auwai

C. Conditions Applicable to All Surface Water Use Permits

194. Each permittee will be required to update the permittee or landowner information with the Commission if the information is different than in the original application.

195. As required by HAR §13-171-42(c), the permittee shall submit a water shortage plan outlining how it will reduce its water use in case the Commission declares a water shortage.

196. In accordance with HAR §13-168-7, each permittee will be required to report their monthly water use to the Commission. All unmetered⁶⁸ users, whether receiving water directly from the river/stream/spring or from a ditch/'auwai, are required to report the following information to the Commission on a monthly basis:

- a. Source and amount of water inflows, where the water is coming from, whether from a stream, spring, ditch/'auwai, or pipeline.

⁶⁸ An unmetered user is a user whose water usage is not measured by a gage.

- b. Outflow amounts, when relevant, such as for lo'i kalo. For outflows, reporting shall also include where the water is going, whether to the source ditch/'auwai, other users, or dispersed without re-use.

197. All permittees shall provide access to CWRM staff and authorized representatives to gage, meter, and monitor diversion and water usage and or to all diversion sites upon reasonable notification.

198. All permittees that have been awarded water based on appurtenant rights will be required to provide copies of deeds for their properties to the Māhele to confirm that no reservation of water rights have been made in their chain of title.

199. If permits that are issued to entities rather than persons, which are issued based on traditional and customary usage, are transferred or assigned in any way, the priority of the permit will be re-evaluated upon transfer or assignment and may be placed in a different priority based on new usage.

200. The Commission reserves the right to amend or modify permit allocations, recommend system improvements or efficiencies, or amend conditions if water temperature is not sufficient to support kalo cultivation for traditional and customary practices and rights as recognized in the Commission's decision.

201. Such other terms and conditions as shall be set forth in the issued permits.

D. Implementation

202. WWC and Mahi Pono shall confirm and correct the identities of the users identified on the various ditches in Figure 1 and report monthly on the amounts delivered to each ditch or user, when applicable.

203. WWC is required to provide water from the Waihe'e Ditch for previous kuleana users of the North Waiehu Ditch.

204. If any of the IIFS set above are not met for three consecutive days the Commission staff may enter any of the properties for which permits are issued, *supra*, for the purpose of investigating the reasons why the IIFS is not being met. Upon determination of the reason(s) the IIFS is not being met, the Commission may order adjustments to be made to diversions to allow the IIFS to be met. Commission staff shall be allowed access to any of the properties with permits to verify that the IIFS is being met. If a permittee does not cooperate

with Commission staff or follow a Commission order, the permittee will be considered to be in violation of the permit.

E. Reporting by Unmetered Users

205. All unmetered users, whether receiving water directly from the river/stream/spring or from a ditch/‘auwai, are required to report the following information to the Commission on a monthly basis:

- a. Source and amount of water inflows, where the water is coming from, whether from a river, stream, spring, ditch/‘auwai, or pipeline.
- b. Outflow amounts, when relevant, such as for lo‘i kalo.
- c. For outflows, where the water is going, whether to the source ditch/‘auwai, other users, or dispersed without re-use.

206. Measurement of flows will be by practicable methods, such as with a bucket, as approved by the Commission staff. The Commission will also develop a simplified reporting system for community permittees that minimizes administrative and cost burdens and includes periodic communications, inspections, and technical assistance with measuring ‘auwai flows.

F. Management of Kuleana Systems

207. WWC and Mahi Pono are responsible to maintain their ditches to the point of delivery of water into the kuleana ditch or pipe system, with maintenance of the kuleana ditches and pipes the responsibility of the users.

208. Monitoring of the amount of water diverted into kuleana systems shall be done by WWC and Mahi Pono, as set forth herein, except where the water is diverted directly from the stream. Where the kuleana system diverts directly from a stream, it shall be the collective responsibility of the kuleana system users to monitor and report the amount of water diverted from the stream. The quantity of water that may be collectively diverted is based on the SWUPs issued pursuant to this decision. The amounts to be delivered shall be provided at all times unless determined by the Commission to be an emergency. In particular, the following diversions shall be monitored by the respective users so that only the indicated amount is diverted into the ‘auwai:

- a. North Waihe‘e ‘Auwai – 1.283 mgd

b. North Waikapū ‘Auwai – 1.169 mgd

209. The Commission advises kuleana users on unlined ‘auwai systems to consider improving system efficiencies and reducing loss by lining or piping, including but not limited to South Waikapū ‘Auwai, South Waihe‘e ‘Auwai, and ‘Īao-Maniania Ditch.

210. In the pre-Māhele period, kuleana lands frequently contained pō‘alima which the occupants worked for the konohiki, chief, or king, and maintenance of the ditches was a collective responsibility. Present-day kuleana owners/users retain mutual responsibility for the maintenance of the kuleana ditches and pipes and to share the waters that flow in mutually used kuleana ditches and pipes.

211. The resuscitation of kuleana lands for lo‘i kalo is not only to allow individual kuleana to grow kalo through traditional practices but to do so in mutual cooperation and labor with neighboring kuleana, and a regulatory approach only solidifies the present focus on one’s own kuleana irrigation needs.

212. The modern-day “konohiki” must have the skills to shepherd kuleana occupants toward agreed mutual sharing of both water and the improvement and maintenance of the kuleana ditches and pipes. Such an endeavor is a long-term activity, entailing “konohiki” that are both knowledgeable of lo‘i kalo irrigation practices and efficient sharing of water. The Commission acknowledges the work kuleana permittees have put in to develop the social bonds that in pre-Māhele days resulted in the extensive lo‘i kalo that these occupants are attempting to revive.

213. The Commission encourages the kuleana permittees, community groups, and agencies to assist in the development of a community or *hui* style of management for these kuleana ‘auwai to develop the community-sharing system that is needed to revive Nā Wai ‘Ehā as the premier wetland kalo producer not only on Maui, but throughout the State (*See* FOF 264, 269, 271-272, 275, 285-286).

G. Reclaimed Wastewater

214. The current potential for treating the WWRF’s R-2 water to R-1 is unrealized because it is not practical for any single potential user because of the logistics and costs of obtaining easements and building transmission pipelines. Even MDWS has not found it practical to use, the costs having no direct relationship with the amount of water that could be

used at various delivery sites. Such obstacles of cost and logistics in relationship to the amount of water to be used at particular sites also extend to private users. (See FOF 316-317.)

215. It is recommended that MDWS convene a working group of large users to address the use of R-1 water from the WWRF. If such a working group is convened, the Commission would like a report of the findings of the working group one year from its formation.

This decision shall be effective immediately upon filing.

DATED: Jun 28, 2021.

Suzanne D. Case

SUZANNE D. CASE, CHAIRPERSON

Keith E. Kawaoka

KEITH E. KAWAOKA

B

KAMANAMAICALANI BEAMER, PH.D.

Michael Buck

MICHAEL G. BUCK

Wayne K. Katayama

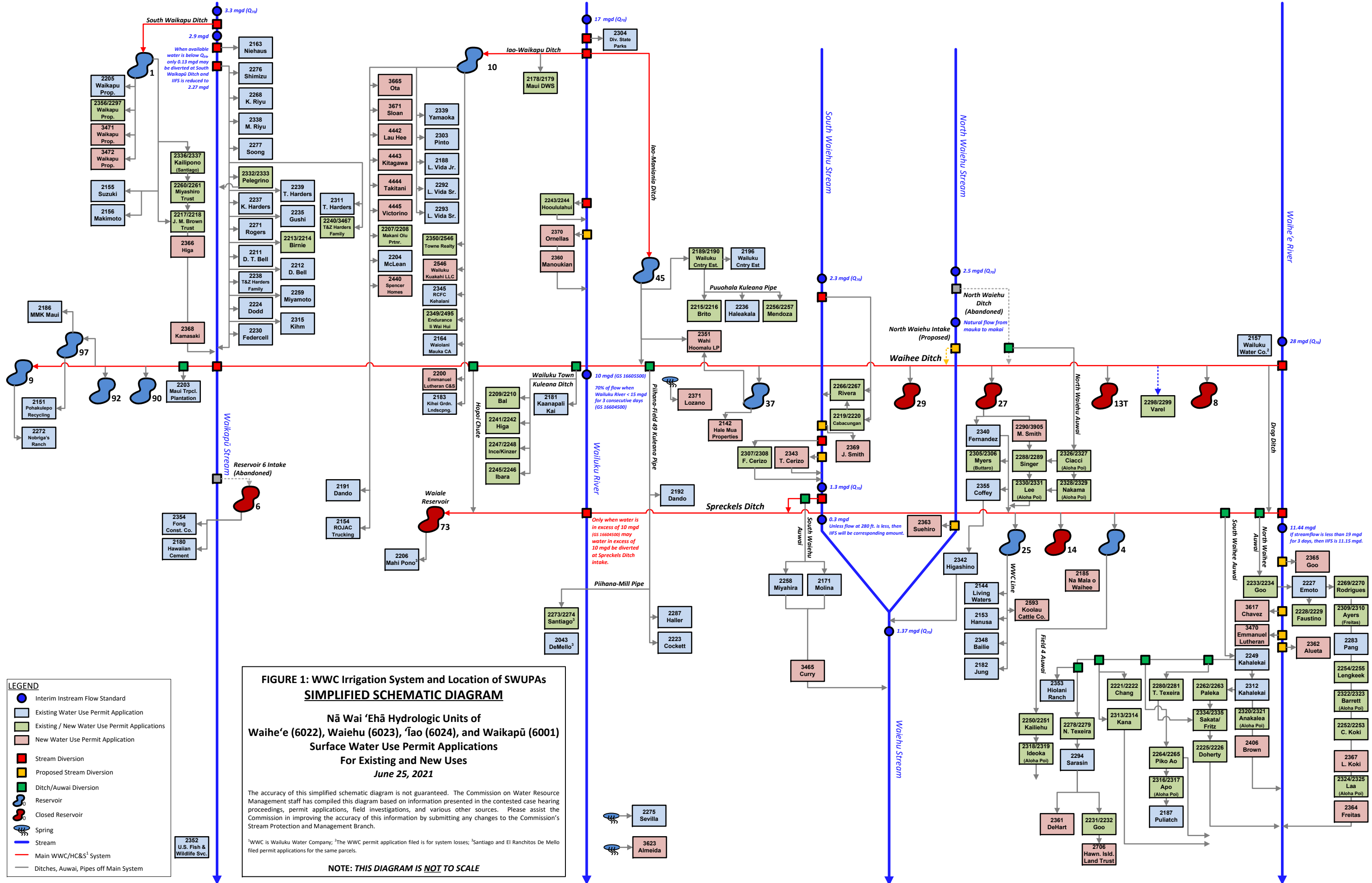
WAYNE K. KATAYAMA

Neil J Hannahs

NEIL HANNAHS

Recused

PAUL J. MEYER



**FIGURE 1: WWC Irrigation System and Location of SWUPAs
SIMPLIFIED SCHEMATIC DIAGRAM**

**Nā Wai 'Ehā Hydrologic Units of
Waiehe'e (6022), Waiehu (6023), 'āo (6024), and Waikapū (6001)
Surface Water Use Permit Applications
For Existing and New Uses
June 25, 2021**

The accuracy of this simplified schematic diagram is not guaranteed. The Commission on Water Resource Management staff has compiled this diagram based on information presented in the contested case hearing proceedings, permit applications, field investigations, and various other sources. Please assist the Commission in improving the accuracy of this information by submitting any changes to the Commission's Stream Protection and Management Branch.

¹WWC is Waialua Water Company; ²The WWC permit application filed is for system losses; ³Santiago and El Ranchitos De Mello filed permit applications for the same parcels.

NOTE: THIS DIAGRAM IS NOT TO SCALE

LEGEND

- Interim Instream Flow Standard
- Existing Water Use Permit Application
- Existing / New Water Use Permit Applications
- New Water Use Permit Application
- Stream Diversion
- Proposed Stream Diversion
- Ditch/Auwai Diversion
- Reservoir
- Closed Reservoir
- Spring
- Stream
- Main WWC/HC&S¹ System
- Ditches, Auwai, Pipes off Main System

Appendix 1

SWUPAs and Corresponding Findings of Fact and Decision and Order

SWUPA	Findings of Fact	Pg. No.	Decision and Order	Pg. No.
2043-El Ranchitos DeMello	465	230	178	352
2142-Hale Mua Properties	460	223	173	351
2144-Living Waters Foundation, LLC	378	118	92	326
2151-Pohakulepo Recycling, LLC	477	241	190	354
2153-Robert Hanusa	379	118	93	326
2154-Rojac Trucking, Inc.	425	185	139	341
2155-Clayton Suzuki	433	201	147	344
2156-Nadao Makimoto	434	202	148	344
2157-Wailuku Water Company	322	59	39	306
2163-David Niehaus	435	204	149	345
2164-Waiolani Mauka Comm. Assn.	411	165	125	338
2171-Renee Molina	390	128	104	330
2178/2179N-Maui County Dept. of Water Supply	403	155	117	335
2180-Hawaiian Cement	456	221	170	350
2181-Kaanapali Kai	469	232	182	353
2182-Cecilia Chang (Jung)	381	119	95	326
2183-Kihei Garden & Landscaping Co., LLP	413	166	127	338
2185N-Na Mala O Waihee	374	115	88	325
2186-MMK Maui	476	237	189	354
2187-Milla Puliatch	364	103	78	322
2188-Leslie Vida Jr.	405	160	119	336
2189/2190N & 2196-WCEIC	399	141	113	333
2191-Charles Dando, Sr.	424	184	138	341
2192-Charles Dando, Sr.	463	228	176	352
2200-Emmanuel Lutheran Church & School	412	166	126	338
2203-Maui Tropical Plantation	475	235	188	354
2204-Luke McLean	422	183	136	340
2205/2356/2297N, 3471N & 3472N-Waikapu Prop.	427	185	141	341

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SWUPAs and Corresponding Findings of Fact and Decision and Order

SWUPA	Findings of Fact	Pg. No.	Decision and Order	Pg. No.
2206-Mahi Pono	480	242	193	355
2207/2208N-Makani Olu Partners	421	174	135	339
2209/2210N-Vernon Bal	470	232	183	353
2211-Dorothy Bell	448	216	162	348
2212-Douglas Bell	449	216	163	349
2213/2214N-Alan Birnie	447	215	161	348
2215/2216N-Gary & Evelyn Brito	400	152	114	334
2217/2218N-Brown Trust/Crystal Smythe, Trustee	430	197	144	343
2219/2220N-Regino Cabacungan & Kathy Alves	385	124	99	328
2221/2222N-Cordell Chang	365	104	79	322
2223-Winifred & Gordon Cockett	467	231	180	352
2224-James Dodd	452	218	166	349
2225/2226N-Michael Doherty	360	98	74	320
2227-Richard Emoto & Roy Ellis	342	79	56	314
2228/2229N-Faustino & Lovato-Rodrigues	343	80	57	315
2230-Patricia Federcell	453	219	167	350
2231/2232N-Diannah Goo	371	110	85	324
2233/2234N-Diannah Goo	341	78	55	313
2235-Russell Gushi	445	214	159	348
2236-Valentine Haleakala	401	153	115	335
2237-Karl & Lee Ann Harders	444	214	158	347
2238-T&Z Harders Family Ltd. Partnership	450	217	164	349
2239-Theodore & Zelig Harders	443	213	157	347
2240/3467N-T&Z Harders Family Ltd. Partnership	441	209	155	346
2241/2242N-Mary Ann Velez (Higa)	471	233	184	353
2243/2244N-Ho'ouluāhui LLC (Duey)	393	132	107	331
2245/2246N-Greg Ibara	473	235	186	354
2247/2248N-Jordanella Ciotti (Ince/Kinzer)	472	234	185	353

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SWUPAs and Corresponding Findings of Fact and Decision and Order

SWUPA	Findings of Fact	Pg. No.	Decision and Order	Pg. No.
2249-Kenneth Kahalekai	354	91	68	318
2250/2251N-Alfred Kailiehu Jr. & Ina Kailiehu	375	116	89	325
2252/2253N-Crystal Koki	349	87	63	317
2254/2255N-David Lengkeek	347	85	61	316
2256/2257N-Kenneth Mendoza	402	154	116	335
2258-Jason Miyahira	389	127	103	330
2259-Jerri Young (Miyamoto)	451	218	165	349
2260/2261N-Ho'okahi Alves (Miyashiro Trust)	429	196	143	343
2262/2263N-John Varel (Kalani & Tera Paleka)	358	95	72	319
2264/2265N-Piko A'o	362	101	76	321
2266/2267N-Isabelle Rivera	384	124	98	328
2268-Katherine Riyu	437	205	151	345
2269/2270N-Michael Rodrigues	344	81	58	315
2271-Waldemar & Darlene Rogers	446	215	160	348
2272-Nobriga's Ranch	478	242	191	355
2273/2274N-Alfred Santiago	464	229	177	352
2275-Duke & Jean Sevilla, Christina Smith, & County of Maui	397	137	111	332
2276-Ione Shimizu	436	204	150	345
2277-Warren Soong	439	207	153	346
2278/2279N-Noel & Katherine Texeira	368	106	82	323
2280/2281N-Thomas Texeira & Denise Texeira	361	100	75	321
2283-Lorin Pang	346	83	60	316
2287-Michelle Haller	466	230	179	352
2288/2289N-Donalee & David Singer	337	75	51	312
2290/3905N-Murray & Carol Smith	335	73	49	312
2292 & 2293-Donna Vida	406	162	120	336
2294-Bryan Sarasin, Sr.	369	106	83	323

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SWUPAs and Corresponding Findings of Fact and Decision and Order

SWUPA	Findings of Fact	Pg. No.	Decision and Order	Pg. No.
2298/2299N-John Varel	328	64	44	310
2303-Claire Pinto	407	163	121	337
2304-Division of State Parks	392	129	106	330
2305/2306N-Douglas Myers & Alex Buttaro	332	69	46	311
2307/2308N-Francisco Cerizo	387	126	101	329
2309/2310N-Alfred Ayers & William Freitas	345	82	59	316
2311-Theodore & Zelig Harders	440	208	154	346
2312-Kau'i Kahakelai	355	92	69	319
2313/2314N-Charlene & Jacob Kana	366	105	80	322
2315-Leinaala Kihm	454	221	168	350
2316/2317N-Gordon Apo (Aloha Poi)	363	103	77	321
2318/2319N-Nolan Ideoka & Lester Nakama	376	117	90	325
2320/2321N-Ramsay Anakalea (Aloha Poi)	356	94	70	319
2322/2323N-Robert Barrett (Aloha Poi)	348	86	62	316
2324/2325N-La'a & Rodrigues	351	89	65	318
2326/2327N-Lester Nakama (Ciacci)	336	74	50	312
2328/2329N-Lester Nakama	338	76	52	313
2330/2331N-Peter Lee & Lester Nakama	339	77	53	313
2332/2333N-Hōkūao & Alana Pellegrino	442	212	156	346
2334/2335N-Burt Sakata & Peter Fritz	359	96	73	320
2336/2337N-Colin Kailiponi & Alfred Santiago	428	195	142	342
2338-Judith Yamanoue and Melvin Riyu	438	206	152	345
2339-Roger Yamaoka & Kevin Yamaoka	404	160	118	336
2340-Rudy Fernandez	331	69	45	311
2342-Paul Higashino	334	71	48	311
2343N-Thomas Cerizo	388	127	102	329
2345-Stanford Carr Development, LLC	409	165	123	337
2348-Michael Bailie	380	118	94	326

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SWUPAs and Corresponding Findings of Fact and Decision and Order

SWUPA	Findings of Fact	Pg. No.	Decision and Order	Pg. No.
2349/2495N-Endurance li Wai Hui	410	165	124	338
2350/2546N-Towne Realty/Wailuku Kuakahi, LLC	408	164	122	337
2351N-Wahi Ho`omalua LP	461	223	174	351
2352-U.S. Fish & Wildlife Service	457	222	171	350
2353-Hiolani Ranch	367	106	81	323
2354-Fong Construction Company	455	221	169	350
2355-Fred Coffey	333	70	47	311
2360N-Anthony Manoukian	395	135	109	332
2361N-Kathleen DeHart	370	109	84	324
2362N-Joseph Alueta	327	63	43	310
2363N-Natalie Hashimoto & Carl Hashimoto	383	123	97	327
2364N-William Freitas	352	90	66	318
2365N-Diannah Lai Goo	324	60	40	309
2366N-George & Yoneko Higa	431	198	145	343
2367N-Lawrence Koki	350	88	64	317
2368-Teruo Kamasaki	432	199	146	344
2369N-Jeff Smith	386	125	100	329
2370N-Francis Ornellas	394	134	108	331
2371N-Kimberly Lozano	396	136	110	332
2406N-David & Anne Brown	357	94	71	319
2440-Spencer Homes	423	184	137	341
2593N-John Varel (Koolau Cattle Co.)	382	120	96	327
2706N-Hawaiian Islands Land Trust	372	111	86	324
3465N-Curry, Gomes & Laimana	391	129	105	330
3470N-Varel (Emmanuel Lutheran Church)	326	62	42	310
3617N-Joshua Chavez	325	61	41	309
3623N-Noelani & Allan Almeida & Gordon Almeida	398	140	112	333
3665N-Ken & Saedene Ota	416	169	130	339

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SWUPAs and Corresponding Findings of Fact and Decision and Order

SWUPA	Findings of Fact	Pg. No.	Decision and Order	Pg. No.
3671N-Kurt & Betsy Sloan	415	167	129	338
4442N-Gerald Lau Hee	417	170	131	339
4443N-Roy Kitagawa	418	171	132	339
4444N-Anthony Takitani	419	172	133	339
4445N-SPV Trust (Shane Victorino)	420	173	134	339

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
1	2.309	1286/0.75	2500/1.00			1,286	2,500	3,786
2	2.546	695/0.75	2250/1.25			695	2,250	2,945
3	2.412	2236/1.0	1600/1.00			2,236	1,600	3,836
4	2.451	18/0.25	3150/1.75			18	3,150	3,168
5	2.193	682/0.50	2250/1.75			682	2,250	2,932
6	2.107	-----	4200/1.50			0	3,750	3,750
7	2.606	841/0.50	3600/1.50			841	3,600	4,441
8	2.092	-----	3950/1.50			0	3,750	3,750
9	2.149	1145/0.75	2200/1.00			1,145	2,200	3,345
10	2.504	1876/1.25	1600/1.00	0.26	39,000	1,876	1,600	3,476
11	2.636	2197/1.50	1800/0.75	0.70	105,000	2,197	1,800	3,997
12	2.58	1883/1.25	2500/1.00			1,883	2,500	4,383
13	2.524	3470/1.75	850/0.25			3,470	625	4,095
14	2.58	-----	3000/1.00			0	2,500	2,500
15	2.221	2693/1.25	1200/0.50			2,693	1,200	3,893
16	2.537	-----	3000/2.00			0	3,000	3,000
17	2.369	26/0.25	2200/1.50			26	2,200	2,226
18	2.203	1205/0.75	1850/1.0			1,205	1,850	3,055
19	3.003	998/1.25	2200/1.25			998	2,200	3,198
20	2.128	3464/1.25	750/0.25			3,125	625	3,750
21	2.128	134/0.25	3200/1.25			134	3,125	3,259
22	2.868	-----	4325/2.25			0	4,325	4,325
23	2.603	2713/1.25	1400/0.75			2,713	1,400	4,113
24	2.819	2593/1.50	1150/0.75			2,593	1,150	3,743
25	2.532	1764/1.25	1750/0.75			1,764	1,750	3,514
26	2.632	2923/1.25	1200/0.75			2,923	1,200	4,123
27	2.342	285/0.25	2560/1.50			285	2,560	2,845

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
28	2.252	1744/1.25	1300/0.50			1,744	1,250	2,994
29	2.395	1879/1.00	1800/1.00			1,879	1,800	3,679
30	2.36	1083/0.50	2100/1.25	0.92	138,000	1,083	2,100	3,183
31	2.399	2554/1.50	1000/0.50	1.31	196,500	2,554	1,000	3,554
32	2.173	-----	3000/1.75	0.92	138,000	0	3,000	3,000
33	2.147	1176/0.50	1850/1.00			1,176	1,850	3,026
34	2.095	-----	4025/1.50			0	3,750	3,750
35	2.783	800/0.50	2500/1.75			800	2,500	3,300
36	2.728	1868/1.50	1600/0.75			1,868	1,600	3,468
37	2.043	2244/1.00	1150/0.50	0.74	111,000	2,244	1,150	3,394
38	2.078	1480/0.50	2400/1.00			1,250	2,400	3,650
39	2.026	131/0.25	2725/1.25			131	2,725	2,856
40	2.009	-----	4000/1.50			0	3,750	3,750
41	2.033	1451/1.00	1850/0.50	0.64	96,000	1,451	1,250	2,701
42	2.212	-----	4400/1.75	1.61	241,500	0	4,375	4,375
43	2.098	-----	4150/1.50	0.69	103,500	0	3,750	3,750
44	2.116	108/0.25	3200/1.25	1.30	195,000	108	3,125	3,233
45	2.584	3127/1.50	550/0.50			3,127	550	3,677
46	2.216	-----	4275/1.75	0.51	76,500	0	4,275	4,275
47	2.127	4092/1.25	875/0.25	0.56	84,000	3,125	625	3,750
48	2.059	3135/1.25	500/0.25			3,125	500	3,625
49	2.131	-----	4000/1.00	0.10	15,000	0	2,500	2,500
50	2.015	1243/0.75	1400/0.75	0.08	12,000	1,243	1,400	2,643
51	2.122	556/0.50	3000/1.00	0.21	31,500	556	2,500	3,056
52	2.381	-----	4500/1.75			0	4,375	4,375
53	2.189	3320/1.25	750/0.25			3,125	625	3,750
54	2.187	1361/0.75	2000/1.00			1,361	2,000	3,361

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
55	2.817	780/0.75	2900/1.50			780	2,900	3,680
56	2.194	2738/1.50	800/0.25	1.60	240,000	2,738	625	3,363
57	2.029	1924/1.00	1100/0.50	1.85	277,500	1,924	1,100	3,024
58	2.052	79/0.25	2800/1.25	1.85	277,500	79	2,800	2,879
59	2.04	2360/1.00	800/0.50	1.85	277,500	2,360	800	3,160
60	2.127	-----	3650/1.50	1.11	166,500	0	3,650	3,650
61	3.392	-----	4400/2.75	0.25	37,500	0	4,400	4,400
62	3.974	-----	4500/3.25			0	4,500	4,500
63	2.247	1507/0.50	2450/1.25			1,250	2,450	3,700
64	2.196	2644/1.00	900/0.75	.		2,500	900	3,400
65	2.076	-----	3500/1.50			0	3,500	3,500
66	2.017	1536/1.00	1625/0.50			1,536	1,250	2,786
67	2.178	254/0.25	3000/1.25			254	3,000	3,254
68	2.631	-----	4400/2.00	0.07	10,500	0	4,400	4,400
69	2.989	4331/2.00	250/0.50			4,331	250	4,581
70	2.118	1478/0.75	1900/0.75			1,478	1,875	3,353
71	2.215	4827/1.50	250/0.25			3,750	250	4,000
72	2.212	-----	4250/1.75			0	4,250	4,250
73	3.394	2678/1.50	1700/1.25			2,678	1,700	4,378
74	2.792	1659/1.00	2550/1.25			1,659	2,550	4,209
75	2.538	2062/1.00	1700/1.00			2,062	1,700	3,762
76	2.255	1932/1.00	1500/0.75			1,932	1,500	3,432
77	2.701	-----	3950/2.25			0	3,950	3,950
78	2.903	508/0.25	3450/2.25			508	3,450	3,958
79	2.128	-----	3650/1.50			0	3,650	3,650
80	2.304	283/0.25	3150/1.50			283	3,150	3,433
81	2.277	-----	3200/1.75			0	3,200	3,200

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
82	2.197	-----	3900/1.75			0	3,900	3,900
83	2.586	1656/0.75	2300/1.25			1,656	2,300	3,956
84	2.755	-----	3000/2.25			0	3,000	3,000
85	2.246	225/0.25	3150/1.50			225	3,150	3,375
86	2.183	931/0.50	2050/1.25			931	2,050	2,981
87	2.718	1814/1.25	1450/0.50			1,814	1,250	3,064
88	2.34	75/0.25	3100/1.50			75	3,100	3,175
89	2.091	1816/1.00	1200/0.50			1,816	1,200	3,016
90	2.761	-----	4800/2.25			0	4,800	4,800
91	2.148	1564/0.75	1650/0.75			1,564	1,650	3,214
92	2.199	3491/1.50	700/0.25			3,491	625	4,116
93	2.26	259/0.25	3100/1.50			259	3,100	3,359
94	2.685	2625/1.50	1000/0.50			2,625	1,000	3,625
95	2.068	470/0.25	3000/1.25			470	3,000	3,470
96	2.094	1322/0.75	2000/0.75			1,322	1,875	3,197
97	2.281	1040/0.50	2650/1.25			1,040	2,650	3,690
98	2.219	-----	3750/1.75			0	3,750	3,750
99	2.001	3701/1.25	700/0.25			3,125	625	3,750
100	2.082	-----	3650/1.50			0	3,650	3,650
101	2.024	196/0.25	2900/1.25			196	2,900	3,096
102	2.025	1204/0.50	3000/1.00			1,204	2,500	3,704
103	2.14	-----	3450/1.50			0	3,450	3,450
104	2.027	3133/1.00	1350/0.50	0.12	18,000	2,500	1,250	3,750
105	2.056	360/0.50	3000/1.00	0.74	111,000	360	2,500	2,860
106	2.19	-----	3600/1.50	0.11	16,500	0	3,600	3,600
107	2.008	1858/0.75	2450/0.75	0.61	91,500	1,858	1,875	3,733
108	2.04	-----	3725/1.50	0.56	84,000	0	3,725	3,725

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
109	2.02	876/0.25	2600/1.25	1.87	280,500	625	2,600	3,225
110	2.245	-----	4000/1.75	1.16	174,000	0	4,000	4,000
111	2.002	1745/0.50	2800/1.00	0.37	55,500	1,250	2,500	3,750
112	2.228	-----	3800/1.75			0	3,800	3,800
113	2.238	279/0.25	3850/1.50	0.04	6,000	279	3,750	4,029
114	2.442	-----	4550/2.00	0.62	93,000	0	4,550	4,550
115	2.096	3106/1.00	950/0.50	0.96	144,000	2,500	950	3,450
116	2.423	2150/1.00	2550/1.00	1.34	201,000	2,150	2,500	4,650
117	2.293	300/0.25	4250/1.50	1.21	181,500	300	3,750	4,050
118	2.316	147/0.25	3800/1.50	0.26	39,000	147	3,750	3,897
119	2.329	956/0.25	4050/1.50	1.25	187,500	625	3,750	4,375
120	2.184	766/0.50	2550/1.00	1.11	166,500	766	2,500	3,266
121	2.095	42/0.25	3700/1.25	0.58	87,000	42	3,125	3,167
122	2.028	1882/0.75	1800/0.75	1.64	246,000	1,875	1,800	3,675
123	2.114	695/0.25	4300/1.25	1.10	165,000	625	3,125	3,750
124	2.043	2378/1.00	1800/0.50	1.12	168,000	2,378	1,250	3,628
125	2.072	2446/1.00	1650/0.50	0.75	112,500	2,446	1,250	3,696
126	2.018	-----	4200/1.50			0	3,750	3,750
127	2.098	-----	4000/1.50			0	3,750	3,750
128	2.19	-----	4000/1.50			0	3,750	3,750
129	2.008	-----	4000/1.50			0	3,750	3,750
130	2.004	3317/1.25	800/0.25			3,125	625	3,750
131	2	-----	4025/1.50			0	3,750	3,750
132	2.023	598/0.25	3500/1.25			598	3,125	3,723
133	2.124	-----	3600/1.50			0	3,750	3,750
134	2.15	-----	4075/1.50			0	3,750	3,750
135	2.503	-----	4150/2.00			0	4,150	4,150

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
136	2.381	2204/1.25	1200/0.50			2,204	1,200	3,404
137	2.001	1459/0.75	2700/0.75			1,459	1,875	3,334
138	2.333	1959/1.00	2000/0.75			1,959	1,875	3,834
139	2.265	-----	4325/1.75			0	4,325	4,325
140	2.002	456/0.25	3550/1.25			456	3,125	3,581
141	2.001	-----	4200/1.50			0	3,750	3,750
142	2.007	5069/1.50	-----			3,750	0	3,750
143	2.004	-----	4000/1.50			0	3,750	3,750
144	3.291	4341/2.0	1050/0.75			4,341	1,050	5,391
145	2.25	-----	4300/1.75			0	4,300	4,300
146	2.525	-----	4675/2.00			146	4,675	4,821
147	2.319	1714/0.50	3150/1.25			1,250	3,125	4,375
148	2.089	-----	3800/1.50			0	3,750	3,750
149	2.044	-----	4375/1.50			0	3,750	3,750
150	2.139	-----	4000/1.50			0	3,750	3,750
151	2.096	-----	4000/1.50			0	3,750	3,750
152	2.115	1406/0.75	2500/0.75			1,406	1,875	3,281
153	2.006	-----	4000/1.50			0	3,750	3,750
154	2.008	-----	4000/1.50			0	3,750	3,750
155	2.034	-----	4400/1.75			0	4,375	4,375
156	2.064	454/0.25	3700/1.25			454	3,125	3,579
157	2.551	-----	4350/2.00			0	3,350	3,350
158	2.319	1778/0.50	3000/1.25			1,250	3,000	4,250
159	2.344	210/0.25	3900/1.50			210	3,750	3,960
160	2.584	3601/1.25	1800/0.75			3,125	1,800	4,925
161	2.588	3771/1.25	1600/0.75			3,125	1,600	4,725
162	2.588	3647/1.25	1000/0.75			3,125	1,000	4,125

Appendix 2
Summary of Wailuku Country Estates Irrigation Company (WCEIC)
Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
163	2.882	-----	4750/2.25			0	4,750	4,750
164	2.01	-----	4000/1.50			0	3,750	3,750
165	2.072	-----	4500/1.50			0	3,750	3,750
166	2.122	591/0.25	3600/1.25			591	3,125	3,716
167	2.132	2370/1.00	1650/0.50			2,370	1,250	3,620
168	2.073	315/0.25	3950/1.25			315	3,125	3,440
169	2.02	3731/1.25	1000/0.25			3,125	625	3,750
170	2.783	-----	4700/2.25	1.79	268,500	0	4,700	4,700
171	2.046	6237/1.50	-----	1.04	156,000	3,750	0	3,750
172	2.074	-----	3900/1.50	0.65	97,500	0	3,750	3,750
173	2.253	1932/1.00	2000/1.00			1,932	2,000	3,932
174	2.087	4248/1.25	800/0.25			3,125	625	3,750
175	2.015	-----	4500/1.50			0	3,750	3,750
176	2.118	344/0.25	3500/1.25			344	3,125	3,469
177	2.226	-----	4150/1.75			0	4,150	4,150
178	2.46	1017/0.25	3750/1.75			625	3,750	4,375
179	2.253	-----	4200/1.75			0	4,200	4,200
180	2.338	-----	4450/1.75			0	4,375	4,375
181	2.18	1112/0.50	3500/1.00			1,112	2,500	3,612
182	2.154	3561/1.00	1150/0.50			2,500	1,150	3,650
183	2.441	-----	4700/2.00			0	4,700	4,700
184	2.118	1886/0.75	2500/0.75	0.01	1,500	1,875	1,875	3,750
TOTAL	421.343	210895/99	512260/221	40.14	6,021,000	195,026	485,160	680,186

Common Areas

185	2.262			1.44	216,000	5,655		5,655
186	6.726							

Appendix 2
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Appurtenant Rights and Permits

Lot	Acreage	Request (gpd/acreage)		Appurtenant Rights (150,000 gad)		Permit Amounts (2,500 gad)		
		Existing	New	Acreage	GAD	Existing	New	Total
187	0.224							
188	0.758							
189	23.028							
29 acres drainage swales and roadside setbacks						72,500		72,500
TOTAL						78,155		78,155

Miscellaneous Areas

190				0.86	129,000			
191								
192								
193				0.01	1,500			
194								
195								
196								
197				0.43	64,500			
198				0.91	136,500			
199								
200								
201								
202								
203								
204								
205								
206								
207								
TOTAL				2.21	331,500			

Appendix 3
Calculation of Appurtenant Rights Acreage for Wailuku Country Estates
Irrigation Company (WCEIC) Lots

Lot #	LCA	Percent of LCA	Appt. Acres in LCA	Appurtenant Rights (Acres)
10	406:1	19%	1.39	0.26
11	406:1	47%	1.39	0.65
	453:2	5%	1.04	0.05
	Total			0.70
29	2436:2	0%	2.40	0
30	2495:1-4	5%	1.80	0.09
	4461:1-2	22%	3.77	0.83
	Total			0.92
31	2495:1-4	6%	1.80	0.11
	3275-E:	100%	0.14	0.14
	4461:1-2	28%	3.77	1.06
	Total			1.31
32	2495:1-4	7%	1.80	0.13
	4461:1-2	21%	3.77	0.79
	Total			0.92
37	2495:1-4	14%	1.80	0.25
	4461:1-2	13%	3.77	0.49
	Total			0.74
41	2495:1-4	7%	1.80	0.13
	2436:2	20%	2.40	0.48
	2533:1	1%	3.40	0.03
	Total			0.64
42	2495:1-4	0%	1.80	0.00
	2436:2	67%	2.40	1.61
	2502:1	0%	0.35	0.00
	Total			1.61
43	2495:1-4	23%	1.80	0.41
	2436:1&3	57%	0.40	0.21
	2436:2	3%	2.40	0.07
	Total			0.69

Appendix 3
Calculation of Appurtenant Rights Acreage for Wailuku Country Estates
Irrigation Company (WCEIC) Lots

Lot #	LCA	Percent of LCA	Appt. Acres in LCA	Appurtenant Rights (Acres)
44.	2495:1-4	39%	1.80	0.70
	4461:1-2	16%	3.77	0.60
			Total	1.30
46	453:2	38%	1.04	0.40
	406:1	8%	1.39	0.11
			Total	0.51
47	453:2	54%	1.04	0.56
49	453:2	3%	1.04	0.03
	406:1	5%	1.39	0.07
			Total	0.10
50	406:1	6%	1.39	0.08
51	406:1	15%	1.39	0.21
54	453:1	0%	12.32	0.00
55	453:1	0%	12.32	0.00
56	453:1	13%	12.32	1.60
57	453:1	15%	12.32	1.85
58	453:1	15%	12.32	1.85
59	453:1	15%	12.32	1.85
60	453:1	9%	12.32	1.11
61	453:1	2%	12.32	0.25
64	2503:2	0%	0.415	0.00
65	2503:2	0%	0.415	0.00
68	2434	5%	1.405	0.07
104	453:1	1%	12.32	0.12
105	453:1	6%	12.32	0.74
106	377	3%	3.61	0.11
107	377	5%	3.61	0.18
	3292	28%	1.52	0.43
			Total	0.61

Appendix 3
Calculation of Appurtenant Rights Acreage for Wailuku Country Estates
Irrigation Company (WCEIC) Lots

Lot #	LCA	Percent of LCA	Appt. Acres in LCA	Appurtenant Rights (Acres)
108	377	14%	3.61	0.51
	3294-B:2	2%	0.56	0.01
	3335	3%	0.73	0.02
	3388	3%	0.54	0.02
	Total			0.56
109	377	23%	3.61	0.83
	3335	35%	0.73	0.26
	3294-B:2	72%	0.56	0.40
	3388	71%	0.54	0.38
	Total			1.87
110	3335	25%	0.73	0.18
	3294-B:2	26%	0.56	0.15
	377	19%	3.61	0.69
	3388	25%	0.54	0.14
	Total			1.16
111	3335	36%	0.73	0.26
	377	3%	3.61	0.11
	Total			0.37
112	3488	0%	3.67	0.00
113	3488	1%	3.67	0.04
114	3488	17%	3.67	0.62
	377	0%	3.61	0.00
	Total			0.62
115	3488	22%	3.67	0.81
	377	1%	3.61	0.04
	3294-B:1:M:1	40%	0.28	0.11
	Total			0.96
116	3488	29%	3.67	1.06
	377	6%	3.61	0.22
	3294-B:1:M:1	17%	0.28	0.05

Appendix 3
Calculation of Appurtenant Rights Acreage for Wailuku Country Estates
Irrigation Company (WCEIC) Lots

Lot #	LCA	Percent of LCA	Appt. Acres in LCA	Appurtenant Rights (Acres)
	3294-B:1:M:2	1%	0.52	0.01
			Total	1.34
117	3488	22%	3.67	0.81
	377	9%	3.61	0.32
	3294-B:1:M:2	16%	0.52	0.08
			Total	1.21
118	3488	1%	3.67	0.04
	377	1%	3.61	0.04
	3292	6%	1.52	0.09
	2436:1&3	0%	0.40	0.00
	3330	0%	4.435	0.00
	3294-B:1:M:2	17%	0.52	0.09
			Total	0.26
119	3292	26%	1.52	0.40
	2436:1&3	43%	0.40	0.17
	3330	12%	4.435	0.53
	3294-B:1:M:2	4%	0.52	0.02
	2502:3	79%	0.17	0.13
			Total	1.25
120	3292	6%	1.52	0.09
	3330	23%	4.435	1.02
			Total	1.11
121	3292	26%	1.52	0.40
	3330	4%	4.435	0.18
			Total	0.58
122	3292	0%	1.52	0.00
	453:1	13%	12.32	1.60
	3330	1%	4.435	0.04
			Total	1.64
123	3292	0%	1.52	0.00
	453:1	1%	12.32	0.12

Appendix 3
Calculation of Appurtenant Rights Acreage for Wailuku Country Estates
Irrigation Company (WCEIC) Lots

Lot #	LCA	Percent of LCA	Appt. Acres in LCA	Appurtenant Rights (Acres)
	3330	22%	4.435	0.98
			Total	1.10
124	453:1	3%	12.32	0.37
	3330	17%	4.435	0.75
			Total	1.12
125	3330	17%	4.435	0.75
170	3294-B:1:M:2	49%	0.52	0.25
	2502:3	8%	0.17	0.01
	2533:1	39%	3.40	1.33
	3237	0%	4.79	0.00
	3387	30%	0.68	0.20
			Total	1.79
171	2533:1	23%	3.40	0.78
	3498	33%	0.775	0.26
			Total	1.04
172	3498	66%	0.775	0.51
	3294-B:1:M:1	43%	0.28	0.12
	3294-B:1:M:2	4%	0.52	0.02
			Total	0.65
184	3498	1%	0.775	0.01
			TOTAL	40.14

(End of owners' lots)

185	2436:2	7%	2.40	0.17
	3387	2%	0.68	0.01
	2533:1	34%	3.40	1.16
	3237	2%	4.79	0.10
(2.262 acres of County Park)			Total	1.44
186	3225	0%	14.92	0.00

Appendix 3
Calculation of Appurtenant Rights Acreage for Wailuku Country Estates
Irrigation Company (WCEIC) Lots

Lot #	LCA	Percent of LCA	Appt. Acres in LCA	Appurtenant Rights (Acres)
187	4461:1&2	0%	3.77	0.00

(0.224 acres for access off Maiki Place for owners/John Russell)

(No appurtenant rights for lot 188—0.755 acres for Maui County water tank site, and lot 189—23.008 acres of roads and shoulders.)

190	453:1	7%	12.32	0.86
193	453:2	1%	1.04	0.01
196	2436:1&3	0%	0.40	0.00
197	2533:1	4%	3.40	0.14
	3294-B:1:M:2	7%	0.52	0.04
	3488	5%	3.67	0.18
	377	2%	3.61	0.07
	Total			0.43
198	3488	3%	3.67	0.11
	377	15%	3.61	0.54
	3292	9%	1.52	0.14
	453:1	1%	12.32	0.12
	Total			0.91
Total for all lots:				43.79

Source: Exh. 2189-WCEIC-243-B-1 for acreage of the LCAs, and Exh. 2189-WCEIC-243-A for acreage in each lot derived from the LCAs.

COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

Surface Water Use Permit Applications,) Case No.. CCH-MA15-01
Integration of Appurtenant Rights and)
Amendments to the Interim Instream Flow)
Standards, Na Wai Eha Surface Water)
Management Areas of Waihee, Waiehu, Iao and)
Waikapu Streams, Maui)
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CERTIFICATE OF SERVICE

On Jun 28, 2021, a copy of the foregoing document was posted on the
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