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BOARD OF LAND AND NATURAL RESOURCES

STATE OF HAWAI'I

In the Matter of a Contested Case Regarding) DLNR File No. CCH-LD-21-01
the Continuation of Revocable Permits (RPs))
for Tax Map Keys (2) 1-1-001:044 & 050;) Sierra Club's Proposed Findings of Fact,
(2) 2-9-014:001, 005, 011, 012 & 017; (2) 1-) Conclusions of Law & Order; Certificate of
1-002:002 (por.) and (2) 1-2-004:005 & 007) Service
for Water Use on the Island of Maui to)
Alexander & Baldwin, Inc. and East Maui)
Irrigation Company, LLC for the remainder)
of the 2021 RPs, if applicable, and for their)
continuation through the end of 2022)

**SIERRA CLUB'S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW &
ORDER**

FINDINGS OF FACT

1. This case focuses on East Maui Irrigation and Alexander and Baldwin, Inc.'s (collectively herein "A&B") request for a continuation of revocable permits S-7263 (Honomanu), S-7264 (Huelo), S-7265 (Keanae) and S-7266 (Nahiku) and what conditions should be imposed.

2. Given the COVID-19 pandemic, the contested case hearing was conducted virtually via Zoom, with attorneys and witnesses appearing remotely.

3. The contested case hearing was held on December 8, 9, 13, 14 and 15, 2021.

4. All the evidence that the parties submitted were accepted into evidence. 12/08/21

Audio at 3:08:20-3:08:57, 3:24:02-3:24:51, 3:56:58- 3:57:37. In addition, all exhibits that were identified in the August 2020 trial, the transcript from that trial, as well as exhibits that were provided at BLNR's November 2020 meeting are also part of this record.

5. The hearing officer heard testimony from Mark Vaught, Grant Nakama, Ian Hirokawa, Ayron Strauch, Ceil Howe, Michelle Reynolds, Kaleo Manuel, Scott Fretz, Michael Kido, Tony Linder, Lyn Scott, Lucienne de Naie, Dalton Beauprez and Wayne Tanaka.

6. Revocable permits S-7263, S-7264, S-7265, S-7266 were first approved in May 2000. Trial Exhibits J-1 – J-4.

Water Needs

7. Since July 30, 2021, A&B has been limited to taking no more than 25 million gallons of water per day from east Maui streams (as measured at Honopou Stream). Exhibits Y-62 and Y-63.

8. This cap has not proved to be a problem to date. 12/08/21 Audio at 1:49:28-1:49:42 (Vaught) 3:48:26-3:48:36 (Nakama).

County of Maui

9. Over the past five years, the County has never needed more than 3.82 mgd (as averaged monthly) for upcountry domestic uses and no more than 1.08 mgd for the Kula Agricultural Park. Exhibits Y-1 and Y-5-Y-11; Trial Exhibits 111 (September 2017, 112.656 divided by 30); M-4; M-5; M-6; J-27 at 6 and 8; AB-33 at 9; Trial Transcript 8/14/20 at 15-20 (Pearson).

10. The County has not needed more than 5 mgd (as averaged monthly) in any month over the past five years. *Id.*

11. No evidence was presented that the County has needed more than 5 million

gallons on any single day at the Kamole Weir for upcountry Maui domestic uses in the last five years. Audio 12/8/21 at 25:42-26:09 (Vaught).

12. There were, however, several days in June 2021 in which it appears that the County used more than 5 million gallons. Exhibit Z-7. A precise calculation is challenging, however, because the data from the Kula Agricultural Park is a monthly average. The Kamole Weir required 4.8 million gallons on June 25, 2021. *Id.* It appears that County needed up to 5.81 million gallons of water for both the Kula Agricultural Park and the Kamole water treatment plant on June 25, 2021.

13. When the Piiholo reservoir levels drop to 30 million gallons, it is an indication that the County may need to use more water at the Kamole Weir Treatment plant. Audio 12/13/21 2:36:53-2:37:22 (Linder).

14. The capacity of the Kamole Weir Treatment Plant is 6.1 million gallons per day. 12/13/21 Audio 2:30:43-2:31:02 (Linder).

15. To operate efficiently, the Kamole Weir Treatment Plant requires that 7 million gallons of water flow within the Wailoa Ditch as it reaches and passes the plant. 12/13/21 Audio 2:23:31-2:24:35, 2:30:20-2:30:41 (Linder).

16. The County is using less water from east Maui streams for domestic purposes (Kamole-Weir facility) today than it was a few years ago because of significant infrastructure improvements made to reduce seepage and increase its capacity. Trial Transcript 8/14/20 at 23-25, 41-43 (Pearson); Exhibit Y-46 at 234 FOF 801. The County of Maui has been able to reduce its use of east Maui stream water in part by lining its reservoirs. Trial Transcript 8/14/20 at 41 (Pearson).

17. Over the past seven quarters, the County has averaged needing approximately

2.66 mgd. Exhibit Y-1; 12/08/21 Audio at 26:45-27:01 (Vaught).

18. The County's pumps for the Kula Agricultural Park are set up in a way that requires significantly more water to be delivered than is actually used. Exhibit X-1 at 2-21; 12/8/21 Audio 29:33-31:02 (Vaught).

19. Although EMI may be contractually obligated to provide 7.175 million gallons of water per day to the County at Kamole Weir, 12/8/21 Audio 33:04-33:30 (Vaught), all that water cannot be used by the County. Vaught Supplemental Declaration ¶ 5.

20. Although EMI is contractually obligated to provide 7.175 million gallons per day to the County at Kamole Weir, it has been providing less than that. Vaught Supplemental Declaration ¶ 5; 12/8/21 Audio 35:51-36:12 and 37:12-37:35 and 38:23-38:48. (Vaught).

Historic/Industrial Uses

21. A&B failed to meet its burden of proof to demonstrate how much water is actually needed in the category of uses it calls Historic/Industrial Uses.

22. A&B does not know how much water any of the users of water in this category use on a daily or monthly basis. 12/8/21 Audio 2:29:33-2:48:21 (Nakama).

23. HC&D, LLC was using between 250,000-300,000 gallons of water per day for its operations and dust control, but that use has ceased, and its only need is for fire suppression. Exhibit X-8, Exhibit Y-15, Exhibit Y-67; 12/8/21 Audio 2:31:42 - 2:32:21, 2:33:38-2:33:55, 2:34:09-2:34:21 (Nakama).

24. A&B's estimate of how much water is used in the Historic/Industrial Uses category lacks credibility given that (a) there is no fluctuation in water used when months are longer or shorter (b) there is not fluctuation based on the weather (c) there is no change in the overall amount now that HC&D is using 250,000-300,000 gallons less water per day and (d) it

has no basis for its estimate of 1.1 million gallons per day.

25. Several of the “historic/industrial uses” do not use east Maui stream water on a daily, or even monthly, basis. Exhibit X-8. HC&D and HC&S’ fire suppression needs do not require water daily or monthly. 12/8/21 Audio 2:29:33-2:30:00, 2:34:09-2:34:31 (Nakama); Exhibit X-8. Maui Demolition uses water from Nā Wai ‘Ehā, not east Maui. Exhibit Y-64. 12/8/21 Audio 2:43:23-2:44:47 (Nakama).

26. While the uses made by Imua Energy, New Leaf Ranch and the four farmers who provide water to their animals appear to be laudable, no information has been provided as to how much water these enterprises need on a daily basis. 12/8/21 Audio 2:42:00-2:42:20, 2:44:55-2:45:40 (Nakama). It is hard to believe that they need more than 100,000 gallons per day.

27. A&B has no idea what the effect would be if the amount authorized in this “Historic/Industrial Uses” category was cut to 500,000 gallons per day. 12/8/21 Audio 2:48:20-2:48:36 (Nakama).

Mahi Pono

28. There is no reasonable basis for more than 2,500 gallons per acre per day to be used to irrigate crops in central Maui given (a) the Commission on Resource Management’s 2021 Nā Wai ‘Ehā decision (COLs 95 and 193) limiting the use of stream water for irrigation to 2,500 gallons per day, Exhibit Y-18 and Y-19; (b) the November 2019 Stipulation and Order Regarding SWUPA 2206 Mahi Pono entered into limiting its use to 2,500 gallons per acre per day, Exhibit Y-17; (c) Mahi Pono’s usage over the past few months which has averaged less than 2,500 gallons per acre per day, Exhibits Y-9—Y-11; and (d) CWRM’s conclusion that 2,500 gallons per cultivated acre per day was a reasonable amount of water to be used for agriculture in Central O‘ahu. *Waiāhole II*, 105 Hawai‘i at 7 and 21, 93 P.3d at 649 and 663.

29. While there are some differences, there do not appear to be significant differences in the crops that Mahi Pono is growing with east Maui stream water and with Nā Wai ‘Ehā stream water. 12/8/21 Audio 3:40:44 – 3:43:36 (Nakama); Exhibit Y-11 at 12-13; Exhibit X-14. Thus, there is little reason to deviate from the 2,500 gallons per acre per day limit. Furthermore, Mahi Pono can adjust its crop mix to ensure that its crops do not require more water than that which is available.

30. Mahi Pono failed to provide adequate justification, including a robust explanation as to the basis of its water needs per acre. The modelling is complex, and Mahi Pono failed to provide information regarding all the data it used, what model(s) it used, what formulas were the basis of any models it use, and what assumptions underlay the model. *Cf.* Exhibit Y-68. Its reliance on Exhibit X-24 is misplaced given that it is a report on software (and how to use the software) that Mahi Pono was not able to properly use. 12/9/21 Audio 2:34:38 -2:35:10 (Howe). Its reliance of third parties with no experience with agriculture in Hawai‘i does not provide sufficient assurance as to its accuracy. 12/9/21 Audio 1:51:11-1:51:54 (Howe).

31. Mahi Pono claims that it has become much more efficient in its use of water for irrigation. 12/9/21 Audio 2:22:50-2:23:17 (Howe).

Fire fighting

32. A&B has failed to determine what the Maui County fire department’s needs are. 12/08/21 Audio at 1:24:05-1:24:39 (Vaught) and 5:20:55 -5:21:24 (Hirokawa); Exhibit Y-29 at 8; 12/09/21 Audio at 1:59:04-1:59:25 (Howe).

33. A&B failed to provide any information as to how much water the County has needed to fight the largest fire in Central Maui. 12/08/21 Audio at 1:23:56-1:24:04 (Vaught).

34. A&B has failed to provide evidence that a significant amount of water is needed

to fight fires daily.

35. According to the Maui County Fire Department, a helicopter uses approximately 2,400 gallons per hour of water; tankers use 7,000 gallons per hour; type 1 engines use 1,500 gallons per hour; type 5 engines use 800 gallons per hour; and utility vehicles use 300 gallons per hour. Exhibit Y-12.

36. Assuming that is only safe to fight a fire during day light, a fire requiring one each of these would use 144,000 gallons of water (12,000 x 12 hours).

37. The County appears to have three helicopters available to it for fighting fires. 12/08/21 Audio at 1:23:14-1:23:32 (Vaught).

38. A&B failed to provide any information as to how many tankers Maui County has. 12/08/21 Audio at 1:23:44-1:23:56 (Vaught).

39. Assuming the County uses and needs three each of all the vehicles identified in Exhibit Y-12, the County would need 432,000 gallons per day to fight a fire. There is not a fire of that nature every day, or every week, or every month.

40. A reservoir that contains (in all senses of that word) 450,000 gallons of water makes sense for public safety. But there is no evidence that 450,000 gallons of water needs to pour into reservoirs every single day to fight fires.

Dust control

41. There was no credible evidence submitted that more than 100,000 gallons per day are used for dust control

42. Mahi Pono fills three to four tankers with a capacity of 4,000-5,000 gallons each, four to five times a day. 12/08/21 Audio at 1:24:46-1:25:17 (Vaught).

43. Thus, dust control requires between 48,000 and 100,000 gallons per day.

Hydroelectric

44. A&B provided no information as to how much water is required for hydroelectric uses. In any case, that water is used for irrigation or flows back into a reservoir. 12/08/21 Audio at 2:06:53:-2:07:15 (Vaught).

Reservoirs

45. The reservoirs currently in use on a regular basis have the following capacities: #22: 43.8 million gallons (mg); #25: 40.2 mg; #33: 46.5 mg; #35: 16.2 mg; #40: 62.8 mg; #42: 10.4 mg; #61: 53.1 mg; #81: 36.7 mg.; #90: 41 mg. 12/8/21. Audio 48:07-50:25, 53:23-1:00:52 (Vaught); Exhibit Y-64. Exhibit Y-64 is an accurate depiction of the ditch and reservoir system, although some of the reservoir capacities may now be lower than they used to be. 12/8/21 Audio 47:55-48:06 (Vaught), 2:27:22-2:27:29 (Nakama) 12/9/21 2:01:45-2:02:22 (Howe).

46. Simple math reveals that the maximum capacity of all the reservoirs that Mahi Pono has been using in 2021 is 350.7 million gallons. $43.8 + 40.2 \text{ mg} + 46.5 \text{ mg} + 16.2 \text{ mg} + 62.8 \text{ mg} + 10.4 + 53.1 \text{ mg} + 36.7 \text{ mg} + 41 \text{ mg} = 350.7 \text{ million gallons}$.

47. In 2020 and 2021, far more water has flowed into the reservoirs each month on average than (a) the maximum capacity of the reservoirs and (b) the amount of water that is consumed by all other uses identified by A&B (County of Maui DWS, County of Maui Ag Park, Diversified Agriculture, Historic/Industrial Uses, as well as dust control). Exhibit Y-1; Exhibit Y-5—Y-11; Exhibit X-13. These numbers reveal that most of the water taken from east Maui streams per month on average was not used.

48. Although given the opportunity, A&B never provided any evidence that any of the water that flowed into the reservoirs in any single day or month was actually needed and used for irrigation in that month or a subsequent month. If there was a month in which the reservoirs

were essential for irrigation (i.e. because an inadequate amount of water was flowing from east Maui streams), the quarterly reports would have shown more water used than the total amount of water diverted from east Maui streams. In every single month, however, more water was taken from east Maui streams than actually used. Exhibits Y-1, Y-5—Y-11; X-13.

49. None of the reservoirs that Mahi Pono is currently using is covered or lined. 12/8/21 Audio 1:02:06-1:02:24 (Vaught).

50. Mahi Pono hopes to decrease its use of reservoirs. 12/09/21 Audio 2:24:22-2:26:07, 2:31:22-2:31:41 (Howe).

S-7263 (Honomanu), S-7265 (Keanae), S-7266 (Nahiku).

51. In 2021, all the water that came from east Maui came from the Huelo area; none came from the revocable permit areas further east: S-7263 (Honomanu), S-7265 (Keanae), S-7266 (Nahiku). Vaught Supplemental Declaration ¶ 1.

52. No evidence has been presented that any water will be needed from Keanae and Nahiku or Honamanu in 2022. None was used in 2021. None is forecast to be needed in 2022. 12/08/21 Audio at 1:37:-1:37:17 and 1:49:44 -1:50:05 (Vaught).

53. There is no evidence that A&B needs to develop, divert or use any water from the Keanae, Nahiku or Honamanu license areas in 2022. The terms of the permit only authorize “the development, diversion and use of water” from these license areas. Trial Exhibits J-1, J-2, J-3, J-4 at 1.

Exaggerated Water Demands

54. A&B and Mahi Pono have consistently exaggerated their need for water.

- a. A&B claimed that east Maui stream water was being used to irrigate 6,500 acres of pasture when no such use was being made of the water. Trial Exhibit

J-21 at 96; Trial Transcript 8/13/20 at 29-31.

- b. In 2019 Mahi Pono claimed that it would enter the year 2020 using approximately 34 mgd (for all uses), but actually used 30.1 mgd in January 2020. Trial Transcript at 21; Exhibit Y-20 at 8; Exhibit Y-5 at 6. Mahi Pono's forecast was off by more than 11%.
- c. In October 2019, Mahi Pono estimated it would need 56.1 mgd (for all uses) by the end of 2020. Exhibit Y-30 at 8. But at the end of 2020, total uses were 28.13 mgd. Exhibit Y-8 at 8. Mahi Pono's estimates were off by fifty percent.
- d. In October 2019, Mahi Pono estimated that by the end of 2020, it would plant more than 5,000 acres. Exhibit Y-14. But by January 2021, only 2,302 acres had been planted. Exhibit Y-8 at pdf 11. Mahi Pono's estimate was off by more than 50%.
- e. Mahi Pono claimed in August 2020 that it would need approximately 43 mgd (for all uses) by the end of 2020, but it wound up using 28.13 mgd in December 2020, Trial Transcript 8/13/20 at 17 and Exhibit Y-8 at 8. Mahi Pono's estimates were off by 35%.
- f. In January 2021, A&B claimed that Mahi Pono would plant 3,675 acres in 2021. Exhibit Y-8 at pdf 3. It had planted 2,302 acres at that point. *Id.* at pdf 11. That would have meant that by the end of 2021, 5,997 acres would be cultivated. But Mahi Pono has admitted that only 5,085 acres will be cultivated by the end of the year. Corrected Declaration of Ceil Howe III. The A&B/Mahi Pono estimates were off by 15%.
- g. In August 2020, Mahi Pono claimed that a cap of 25 mgd "would have a high

detrimental impact on the expansion of our farming operations,” but it has suffered no affects from the cap imposed by the court on July 31, 2021. Trial Transcript 8/13/20 at 19; 12/08/21 Audio at 1:49:28-1:49:42 (Vaught) 3:48:26-3:48:36 (Nakama).

55. Mahi Pono has also requested a cushion, or buffer, of an additional 4 million gallons of water daily. Declaration of Ceil Howe III, ¶20(f); 12/9/21 Audio 1:59:25 – 1:59:41 (Howe).

Unused, Lost or Wasted Water

56. Water that is taken from streams that is not used is in fact wasted. As Chair Case explained at BLNR’s October 11, 2019 meeting, “And you know, I mean, the other consideration, obviously, is waste, you don't want to be running water through the system that's not being used.” Trial Exhibit S-51 at 5. Waste is not making any productive use of water. 12/8/21 Audio 4:45:08-4:45:27 (Hirokawa). An agreement ratified by CWRM embraced a series of principles, one being: “Any diversion of water from a stream must be justified with no more water taken than is needed for other beneficial uses, and even then, the health of the stream must be preserved at all times. All waters not needed at any given time belong in the stream and the IIFS numbers are the minimum mounts to be provided.” Exhibit Y-48 at pdf 9; Exhibit Y-49; 12/9/21 Audio 1:02:11-1:02:21 (Strauch).

57. Prudent management dictates a conservative use of stream water. 12/9/21 Audio 2:00:20-2:00:29 (Howe).

58. In its 2018 decision, CWRM explained that seepage, evaporation and other miscellaneous breaks constitute “system losses” of the EMI Ditch System. Exhibit J-14 at 215-217 (FOF 727, 733); Trial Transcript 8/17/20 p.m. at 67 (Case).

59. In 2018, CWRM determined that system losses of 22.7% were reasonable losses for sugarcane cultivation. It also determined that the “**same rate** of 22.7 percent losses should be applicable” to diversified agriculture. Trial Exhibit Y-46 at 217 ¶ 737; Trial Transcript 8/4/20 p.m. at 37-38 (Meredith Ching).

60. In its 2018 decision setting instream flow standards for many (but not all) of east Maui streams, CWRM wrote:

although estimates of over **20 percent transmission system losses** may comport with current industry standards, they do not reflect best practices, will not serve the interests of future generations and **are not acceptable**. Modern agribusiness investors should not expect to build a new industry on the back of **century-old infrastructure**. Investment in **ditch systems must be made to avoid leakage and waste**, install modern ground water storage technologies, optimize use of non-potable water, and improve water capture and storage from storm events that increase total flow availability.

Exhibit Y-46 at 22.

61. BLNR has not authorized system losses greater than 22.7%. 12/8/21 Audio 5:04:09-5:04:23 (Hirokawa).

62. Over the seven quarters, A&B has providing BLNR with data regarding the amount of water that it uses and how much it does not actually use:

Month	MGD taken from E. Maui streams	Maui County domestic use mgd	Kula Ag Park mgd	Mahi Pono mgd	Industrial & miscl uses mgd	Reservoir/Fire Protection/Evaporation/Dust Control/ Hydroelectric/System Losses mgd
January 2020	30.10	1.07	.39	2.45	1.1	25.09
February 2020	25.28	1.17	.37	2.46	1.1	20.19
March 2020	27.98	.95	.37	2.58	1.1	22.98
April 2020	25.70	.91	.35	3.58	1.1	19.77
May 2020	21.60	1.86	.39	3.62	1.1	14.63
June 2020	20.50	2.64	.51	3.73	1.1	12.53
July 2020	16.8	3.2	.45	2.6	1.1	9.47
August 2020	19.7	2.5	.46	2.5	1.1	13.20
Sept. 2020	20.1	3.4	.69	2.4	1.1	12.49
October 2020	11.51	3.81	.56	2.51	1.1	3.53
Nov. 2020	25.34	2.16	.53	3.44	1.1	18.11

Dec. 2020	28.13	2.19	.50	4.43	1.1	19.91
January 2021	28.09	1.4	.36	3.91	1.1	21.33
February 2021	25.90	.88	.38	3.93	1.1	19.61
March 2021	23.55	.61	.40	3.01	1.1	18.44
April 2021	23.59	2.0	.59	3.98	1.1	15.91
May 2021	24.95	2.41	.60	4.48	1.1	16.37
June 2021	14.78	3.82	1.01	4.55	1.1	4.31
July 2021	18.57	2.6	.36	5.01	1.1	9.49
August 2021	18.12	2.21	1.08	5.62	1.1	8.11
Sept. 2021	16.7	3.15	.49	9.08	1.1	2.87

Exhibits Y-1, Y-5—Y-11.

63. The water that seeps into the ground from the reservoirs is not captured and stored in a closed non-leaky container underground. 12/9/21 Audio 1:10:18-1:11:02 (Strauch).

64. CWRM restricted Mahi Pono and Wailuku Water Company system from losing more than five percent of the water diverted from Nā Wai ‘Ehā. Exhibit Y-19 D&O ¶193(b).

65. A&B has admitted that “‘total system losses’ west of Maliko Gulch are currently higher than the 22.7% rate.” Exhibit Y-22 at 12.

66. A&B’s argument that water lost due to seepage is not actually lost holds no water. Exhibit Y-22 at 12. Taking water from streams and depositing that water into reservoirs which allow most of that water to seep into the ground is not a reasonable, beneficial, or efficient use of water. 12/13/21 Audio 12:54-14:54 (Manuel).

67. A&B produced no data (or any expert) to show what percentage of the water that has seeped into the ground from its reservoirs in 2020 and 2021 actually reaches the aquifer and is actually contained in it for future use.

68. Other than the water that was used for dust control, in the first and second quarters of 2021, virtually none of the water in the column labelled “Reservoir/Fire Protection/ Evaporation/Dust Control/Hydroelectric” was actually used. 12/08/21 Audio at 1:25:47-1:27:00

(Vaught)(“Was any of the water used? I don’t believe so.”); Exhibit Y-9 at 10; Exhibit Y-10 at 10; 12/08/21 Audio at 2:07:41-2:08:21; 2:09:17 -2:11:54 , 2:14:27-2:14:51(Vaught). A&B failed to describe with specificity as to how or when any of the water in the Reservoir/Fire Protection/ Evaporation/Dust Control/Hydroelectric” category was ever actually used (except for the 48,000-100,000 gallons used daily for dust control). The amount of water not used (whether classified as “waste” or “system loss”) far exceeded the amount of water that was actually used.

69. Although given the opportunity, A&B never provided any evidence that any of the water that flowed into the reservoirs in any single day or month was actually needed and used for irrigation in that month or a subsequent month. If there was a month in which the reservoirs were essential for irrigation (i.e. because an inadequate amount of water was flowing from east Maui streams), the quarterly reports would have shown more water used than the total amount of water diverted from east Maui streams. In every single month, however, more water was taken from east Maui streams than actually used. Exhibits Y-1, Y-5—Y-11 and X-13.

70. Most of the water taken from east Maui streams in 2020 and 2021 was not used. Exhibits Y-1, Y-5—Y-11; X-13; 12/08/21 Audio at 1:25:47-1:27:00 (Vaught)(“Was any of the water used? I don’t believe so.”); Exhibit Y-9 at 10.

71. Even assuming that all of Mahi Pono’s reservoirs were empty in November 2020, the reservoirs that received 18.11 million gallons per day would have been completely full by November 20, 2020. $18.11 \text{ million gallons per day} \times 20 \text{ days} = 362.2 \text{ million gallons}$. Exhibit Y-1 and Exhibit Y-8. There is no way that the remainder of the water (10 remaining days \times $18.11 \text{ mgd} = 181.1 \text{ million gallons}$) could have been used. Except for the water used for dust control (no more than 100,000 gallons), all that water was either lost due to seepage and evaporation, or simply wasted. 12/09/21 Audio 2:03:25-2:07:33 (Howe). This same pattern

repeated in December 2020, January 2021, February 2021, March 2021, April 2021, and May 2021. Exhibit Y-1; Exhibit Y-9; Exhibit Y-10. The amount of water not used (whether classified as “waste” or “system loss”) far exceeded the amount of water that was actually used.

72. It is logical to conclude that given the maximum capacity of Mahi Pono’s reservoirs, a minimum of 15.91 million gallons of water were lost per day on average in December 2020, January 2021, February 2021, March 2021, April 2021 and May 2021. That means that more than half the water diverted from east Maui streams was lost. The amount of water lost is far higher than the 22.7% authorized by CWRM. *See* Exhibits Y-1, Y-5-Y-11 and X-13. Such loss is neither reasonable nor beneficial.

73. Whether the water that A&B has not used is labelled as “waste” or “lost”, the amount not used is far higher than 22.7% system losses and is not acceptable.

74. A&B was required to submit to the Department “a plan for their proposed upgrades, including an implementation timeline, to the irrigation system intended to address CWRM’s concerns no later than June 30, 2021.” Exhibit Y-22 at 13. The requirement was not tied into the issuance of a lease. Exhibit Y-22. Mahi Pono’s June 2021 “plan” is one page long includes no information as to the “implementation timeline” for the “future lining of reservoirs to reduce seepage loss.” Exhibit Y-16. It provides no information as to when the “analysis” of the operational significance of the existing reservoirs will be completed. It lacks detailed information regarding cost estimates and timeframes. 12/13/21 Audio 11:11-12:35 (Manuel).

75. While Mahi Pono has described some of the effort and money spent on water efficiency upgrades, it has failed to provide any data that quantifies its achievements. 12/8/21 Audio 1:11:37-1:12:51. (Vaught), 3:32:40-3:32:47 (Nakama); Exhibit Y-16.

76. Mahi Pono has not spent any of the \$20 million of efficiency upgrades lining or

covering any of the reservoirs. 12/8/21 Audio 1:12:52-1:12:59 (Vaught) 3:32:46-3:32:52 (Nakama).

77. It appears that in the future, Mahi Pono may be able to use water far more efficiently than it has been. Mahi Pono claims that it has become much more efficient in its use of water for irrigation. 12/9/21 Audio 2:22:50-2:23:17 (Howe). It hopes to decrease its use of reservoirs. 12/09/21 Audio 2:24:22-2:26:07, 2:31:22-2:31:41 (Howe). And Mahi Pono now has the ability to divert from the east Maui streams only when the water can be used on the farm for irrigation. Howe Declaration ¶ 21; 12/9/21 Audio 1:59:43 – 1:59:59 (Howe). Given that, it is reasonable to expect system losses by Mahi Pono of less than 22.7% in 2022.

Dozen Huelo Streams

78. “There is universal agreement that more water and better connectivity in streams is a good thing for native habitat restoration.” Exhibit Y-46 at 21 (v).

79. In November 2009, DLNR’s Division of Aquatic Resources collaborated with the Bishop Museum to produce a seminal report on the impacts of stream diversions in east Maui: “The Use of Hawaiian Stream Habitat Evaluation Procedure to Provide Biological Resource Assessment in Support of Instream Flow Standards for East Maui Streams.” The report concluded:

- “Stream diversions decrease the size of the freshwater plume and therefore make it harder for recruiting animals to detect the freshwater from their offshore larval development areas.” Trial Exhibit S-19 at 8.
- “In addition to the size of the freshwater plume, in many streams, a stream mouth berm is created when deposition from wave action is greater than erosion by stream flow. . . . [I]ncreased stream flow will decrease the amount of time that stream remains closed by a

berm and therefore blocked to recruitment.” *Id.*

- “From a management perspective, the maintenance of adequate stream flow from upstream adult habitat to the stream mouth is critical for amphidromous animals. Given the vagaries of the timing recruitment and the short development window for upstream movement, minimizing the time that barriers to upstream movement exist will increase the chance that suitable upstream habitat will be colonized by newly recruiting animals.”

Id. at 14-15.

- “In the most extreme cases, the diverting of 100% of the water can result in the elimination of all habitats downstream of the diversion by dewatering the downstream sections.” *Id.* at 15.

- “Typical stream diversion structures divert 100% of the water at low to moderate flows. Under these conditions, 100% of downstream moving individuals would be entrained by the diversion.” *Id.* at 19.

- “In general, the diversions were engineered to capture low to moderate stream flows and results in 100% removal of water approximately 70 to 80% of the time (Gingerich 2005). The removal of 100% of flow blocks upstream passage and entrains downstream moving animals.” *Id.* at 29.

- “The streams of northeast Maui in this analysis had a range of surface water diversions affecting their stream flow and, therefore, the amount of instream habitat for native amphidromous animals. . . . In most cases where diversions did occur, the diversions blocked the stream and captured 100% of the stream flow at low and moderate rates of discharge.” *Id.* at 78.

80. Current research indicates that the minimum viable flow necessary to provide

suitable habitat conditions for recruitment, growth and reproduction of native stream animals is 64% of median base flow. Exhibit Y-46 at 19 (iii); Exhibit Y-35; Trial Transcript 8/7/20 at 117 (Higashi).

81. Taking all the baseflow from any stream is a bad idea. 12/13/21 Audio 1:51:36-1:53:00 (Kido); Exhibit Y-37 at 20.

82. CWRM's 2018 decision amending instream flow standards for approximately two dozen east Maui streams did not address a dozen Huelo streams that are also diverted by the East Maui Irrigation Ditch System: Kōlea Stream, Punalu'u Stream, Ka'aiea Stream, 'O'opuola Stream (Makanali tributary), Puehu Stream, Nailiilihaele Stream, Kailua Stream, Hanawana Stream (Ohanui tributary), Hoalua Stream, Waipi'o Stream, Mokupapa Stream, and Ho'olawa Stream (Ho'olawa ili and Ho'olawa nui tributaries. Exhibit Y-46 at 40-41 (FOF 58); Exhibit X-2 at pdf 43-46.

83. The 1988 interim instream flow standard for these 12 streams was not based on the biological, ecological or recreational value of those streams. Trial Transcript 8/17/20 a.m. at 76-77 (Strauch). This "status quo" standard is "not adequate to protect streams." Trial Exhibit S-78 at 1. *See also In Re Water Use Permit Applications*, 94 Hawai'i 97, 150 and n.54, 9 P.3d 409, 462 and n.54 (2000) ("*Waiāhole*"). There are no meaningful instream flow standards for these 13 east Maui streams. *Id.* Exhibit Y-47; Exhibit Y-44; Exhibit Y-46 at 40-41 (FOF 58).

84. According to A&B's EIS,

The diversions and aqueduct system were built to capture 100% of normal low flow plus some smaller amount of storm runoff. . . . When low flow conditions persist and overall diversion amounts do not exceed the conveyance capacity of the aqueduct, the streams can be dewatered below the diversions resulting in negative impacts on species habitat and passage.

Exhibit X-2 at pdf 12.

85. In the CWRM proceeding that concluded in 2018, CWRM assumed that all the water from a dozen Huelo streams that were not the subject of the proceeding would be available for non-stream uses even though CWRM did not evaluate the ecological or recreational value of those dozen streams. Exhibit D-2 at pdf 21; 12/09/21 Audio 1:19:09-1:20:17, 1:21:32-1:22:00 (Strauch); Trial Transcript 8/17/20 p.m. at 47-48 (Case); Trial Transcript 8/11/20 at 16 (Ching); Exhibit Y-46.

86. A&B's own FEIS reveals that full diversion of the dozen streams unaddressed by the 2018 CWRM order (Kōlea Stream, Punalu'u Stream, Ka'aiea Stream, 'O'opuola Stream (Makanali tributary), Puehu Stream, Nailiilihaele Stream, Kailua Stream, Hanawana Stream (Ohanui tributary), Hoalua Stream, Waipi'o Stream, Mokupapa Stream, and Ho'olawa Stream (Ho'olawa ili and Ho'olawa nui tributaries) reduces the available habitat units by more than 88%. Exhibit X-2 at PDF 14 and 73.

87. Such a reduction in habitat is significant. Exhibit Y-31 at 30; Exhibit Y-37 at 41; Exhibit Y-36 at 31-32.

88. The difference between the existing full diversion of the dozen Huelo stream and their natural condition is 433,627 habitat units (491,409-57,782). Exhibit X-2 at table 13 pdf 73. In comparison, CWRM's full restoration of nine streams created 179,347 habitat units (685,723-506,376) (although A&B's EIS states that the figure might be high). *Id.* at tables 6 and 7 pdf 66 and 67. Similarly, CWRM's restoration of 64% of the baseflow to five streams created 48,391 habitat units (185,302-136,911). *Id.* at table 8, pdf 68.

89. There would be recreational and biological benefits to restoring more streamflow to some of these dozen streams. 12/09/21 Audio 1:10:00 -1:10:15 (Strauch).

90. In 2020, the Division of Aquatic Resources determined that restoring four of the

streams in the Huelo area (O‘opuola, Nailiilihaele, Kailua, and Ho‘olawa streams) should be a high priority given the presence of native species and potential habitat. Exhibit Y-40.

91. ‘O‘opu-nakea have been observed in Ho‘olawa Stream; ‘ōpae kala‘ole have been spotted in O‘opuola Stream as well as Nailiilihaele Stream. Declaration of Michael Kido at 7; 12/13/21 Audio 1:33:12-1:33:27 (Kido); Exhibit D-1 at 13.

92. DLNR’s Division of Aquatic Resources identified one of those 12 streams, Kōlea Stream, as having “a large amount of potential habitat in the middle and upper reach” for native species. Exhibit J- Y-34 at 8 (6).

93. DLNR’s Division of Aquatic Resources concluded that restoration of water flow to Kōlea Stream would “greatly improve the productivity of the stream and increase the availability of potential habitat for native species.” *Id.*

94. An increase in the amount of water diverted out of east Maui streams today as compared to the last 3 years, would have an adverse effect on native species, their habitat and ecosystem health. Exhibit Y-37 at 24.

95. The existence of overhanging barriers on the tributaries on Ho‘olawa Stream should not serve as a basis for not restoring stream flows below the New Hamakua Ditch. 12/09/21 Audio 46:53-48:01 (Strauch).

96. Recreational uses are made of the dozen streams unaddressed by the 2018 CWRM order. Declaration of Lucienne de Naie; Declaration of Lurlyn Scott; 8/6/20 Trial Testimony 8/6/20 p.m. at 7-10 (de Naie); Trial Testimony 8/6/20 a.m. at 14-16 (Camp), 38-41, 51 (Powers), 83-84 (Weltman)

97. Traditional and customary practices take place on Ho‘olawa Stream. Declaration of Lurlyn Scott.

98. People live along some of these streams and depend on them, sometimes having to truck in water. 12/09/21 Audio 53:24-53:34 (Strauch).

99. The conclusions and recommendations in the October 2020 Instream Flow Standard Assessment Summary, Exhibit D-1, should not be relied upon. 12/09/21 Audio 53:42-53:55, 54:10-54:19, 54:45-55:06, 1:14:13-1:14:28, 1:16:35-1:17:36, 1:17:50-1:18:23 (Strauch). A lot of field work has taken place since that summary was prepared. 12/09/21 Audio 21:41-56 (Strauch).

100. In 2008, both Ho‘olawanui and Ho‘olawaliilii hosted populations of the endangered damselfly *Megalagrion pacificum*. Exhibit Y-41 at 6. *Megalagrion pacificum* breeds in stream pools and side channels, with adults patrolling the margins of the stream corridor.” Exhibit X-3 at 8. *Megalagrion pacificum* “suffers from direct impacts from loss of habitat linked to diminished stream flows.” *Id.* “Higher rates of diversion will therefore lead to higher rates of direct impact on all these listed species.” *Id.* The U.S. Fish and Wildlife Service concluded that the tributaries to Ho‘olawa Stream “represents suitable habitat for this and other damselfly species.” Exhibit Y-41 at 6. Given the recorded existence of an endangered species above Wailoa Ditch, and the harm that the diversions cause to the habitat in which the damselfly breed, steps need to be taken to restore stream flows to protect an endangered species.

101. The U.S. Fish and Wildlife Service has observed that the “long history of stream diversions by the EMI system on East Maui has created an array of impacts to trust resources, including both the native stream biota, other species which inhabit the adjacent upland forests, and nearshore marine ecosystems that rely on streams for nutrient inputs.” Exhibit X-3 at 8.

102. “Among the major threats to the survival in the wild of the listed [as endangered] forest bird species is mortality caused by avian malaria, which is vectored by the introduced

mosquito *Culex quinquefasciatus*. This mosquito species breeds in stagnant pools free from fish in dewatered stream beds, and is by contrast uncommon along stream channels with continuous flow and healthy fish populations. By converting continuously flowing streams into nearly dry beds with scattered small pools, the current EMI diversions create corridors of habitat by which *Culex* mosquitoes can penetrate uphill more deeply into the native forest, and more readily reach susceptible native forest populations. This represents a significant, although indirect, impact of the proposed diversions to this set of listed species.” Exhibit X-3 at 10; *see also* Exhibit Y-41 at 14 and Exhibit X-1 at 4-89—4-90. It is likely that infectious mosquitoes are blown from low elevation to high elevations where they infect native birds. Exhibit Y-42 at 6. Declaration of Michelle Reynolds; 12/13/21 23:50-24:44, 33:25-34:31, 41:20-41:46 (Fretz); 1:48:43-1:49:58 (Kido).

103. Stagnant pools created by the EMI diversion system create breeding grounds for mosquitos, which jeopardize endangered forest bird species. 12/13/21 Audio 33:25-34:32 (Fretz).

104. EMI has the ability to decrease or increase the amount of water taken out of the Huelo streams in 2022. 12/08/21 Audio at 1:39:51-1:40:07, 1:41:02-1:41:44, 1:44:25-1:45:51 (Vaught).

105. The Sierra Club has filed a petition to amend the instream flow standards for the dozen Huelo streams. Exhibit Y-50; Exhibit Y-51.

106. It is not clear when CWRM will be able to address the Sierra Club’s petition, but it is not likely to do so within 180 days after it was filed on September 29, 2021. 12/13 Audio at 7:24 -7:44 (Manuel).

Cap

107. The court's cap of 25 million gallons per day has not had a detrimental impact on Mahi Pono's operations. 12/08/21 Audio at 1:49:28-1:49:42 (Vaught) 3:48:26-3:48:36 (Nakama).

108. Given the impact of the diversions on the dozen Huelo streams, their substantially unprotected status, and the pending IIFS petition, there is no basis to increase the current 25 million gallon per day cap until the Sierra Club's IIFS petition is resolved. Mahi Pono should not be risking money in dramatically increasing its cultivated acreage and increasing its water needs until substantive instream flow standards are set for the dozen Huelo streams.

109. The 25 million gallon cap for 2022 would not adversely affect Mahi Pono given its speculative plans for 2022, the availability of groundwater, its use of streams west of Honopou, and the amount of water that has not been used over the past two years.

110. A&B has not demonstrated that it needs more than 25 million gallons per day as averaged monthly in 2022 on average.

- a. On average, the County needs no more than 2.66 million gallons per day for the Kula Agricultural Park and for Upcountry Maui domestic uses combined. Exhibit Y-1.
- b. A&B has failed to demonstrate that it needs even 100,000 gallons per day for the Historical/Industrial uses.
- c. Mahi Pono's proposed dramatic increase in its irrigation requirements are not credible.
- d. It is not reasonable to allow 5.67 million gallons of water to flow into unlined reservoirs where almost all the water seeps into the ground or evaporates. Moreover, Mahi Pono claims that it has become far more efficient in its

irrigation practices, with the ability to divert from the east Maui streams only when the water can be used, thereby reducing the need to store vast amounts of water in its reservoirs. 12/9/21 Audio 1:59:43 – 1:59:59, 2:22:50-2:23:17, 2:24:22-2:26:07, 2:31:22-2:31:41 (Howe). Howe Declaration ¶ 21.

- e. Nevertheless, a cap of 25 million gallons per day (as averaged monthly) would allow Mahi Pono to use up to 16 mgd for irrigation on average (far more than what it used in any month in 2021; and not including any groundwater that it can use; and not including millions of gallons of water available from west of Honopou), with 5 million gallons of water lost per day due to seepage and evaporation, 100,000 gallons for historic/industrial uses, and 2.66 million gallons of county use on average.

Alternative sources

111. A&B can pump groundwater to irrigate its fields. Exhibit X-13; Exhibit Y-22 Staff Submittal Nov. 2020 at PDF 36.

112. Mahi Pono can pump groundwater for many of its fields if there is insufficient water to meet Mahi Pono's water needs. 12/8/21 Audio 46:29-46:51 (Vaught).

113. The vast majority of Mahi Pono's currently cultivated fields can be served by pumped groundwater. The exceptions are fields 300, 301 and 303 as well as fields that Mahi Pono is not cultivating itself, fields 407, 408 and 409. Exhibit X-12; Exhibit Y-11 at 10-11; 12/8/21 Audio 42:15-42:53 (Vaught).

114. A&B's FEIS states that the sustainable yield for groundwater is 32 mgd. Exhibit X-1 at 3-3.

115. Ten wells are available to irrigate approximately 17,200 acres, and groundwater

can be used on another 5,000 upper elevation acres. Exhibit X-1 at 2-22 and 2-25.

116. Mahi Pono pumped 4.2 million gallons per day on average in September 2021 and 5.81 mgd of groundwater on average in October 2021. Exhibit X-13.

117. Mahi Pono was unable to say that its pumping of groundwater in September 2021 or October 2021 had any adverse impacts. 12/8/21 Audio 40:04-40:31 (Vaught) and 3:31:44-3:32:02 (Nakama).

118. Pumped groundwater would cost Mani Pono about 52 cents per 1,000 gallons, which is still less than farmers in Central O’ahu pay for water from the Waiāhole ditch. Exhibit X-2 at PDF 1817.

119. A&B has provided no data that it cannot pump 10 mgd to irrigate its crops.

120. No evidence was presented that any of the fields which are currently cultivated or are planned to be cultivated in 2022 are fields that groundwater pumping cannot reach.

121. No evidence was presented that the groundwater used in 2021 is actually too salty for Mahi Pono’s crops. 12/09/21 Audio 2:35:52-2:36:13 (Howe).

122. Mahi Pono has also made use of water from streams west of Honopou. Exhibit X-13. A&B’s EIS states, “The EMI Aqueduct System is estimated to divert an additional 4.37 mgd from the point that it leaves the License Area at Honopou Stream and collects water from streams on privately owned land to its last diversion at Maliko Gulch.” Exhibit X-1 at vii. On the other hand, CWRM concluded that streams west of Honopou can provide more than 8 mgd. Exhibit Y-46 at pdf 38 and 158 ¶52 and ¶519 (7% of 126 mgd).

Other Practical Mitigation Measures to Reduce Water Taken from East Maui

123. EMI has the ability to reduce the amount of water that is currently flowing from east Maui. 12/8/21 Audio 27:34-27:52 (Vaught).

124. The County currently does not inform EMI that it will need more water at the Kamole Weir. 12/8/21 Audio 28:19-28:37 (Vaught).

125. It takes about a day for EMI to make adjustments to its system to bring in more or less water. 12/8/21 Audio 1:52:00-1:52:48 (Vaught).

126. Mahi Pono has the ability to divert from the east Maui streams only when the water can be used on the farm for irrigation. Howe Declaration ¶ 21; 12/9/21 Audio 1:59:43 – 1:59:59 (Howe).

127. Lining reservoirs reduces the amount of water lost due to seepage. Trial Transcript 8/13/20 at 25-26 (Nakama); Trial Transcript 8/14/20 at 25 (Pearson).

128. EMI/Mahi Pono could use reservoir #23, which is lined and has a capacity of 13 million gallons (more than Mahi Pono is currently using on all of its fields), instead of reservoirs #22, #33, #35, #40, #42 to irrigate fields 501, 509, 510, 511, 512. Using a lined reservoir would help conserve water. 12/8/21 Audio 1:02:36 – 1:05:54 (Vaught).

129. Excess groundwater winds up in reservoirs #25, #61, #81 and #90. 12/8/21 Audio 41:27-42:04 (Vaught).

130. Lining reservoirs #25, #61, #81 and #90 would have the added benefit of preventing both east Maui stream water and pumped groundwater from seeping back into the ground.

131. Reservoirs #25, #33, #40, #61 and #90 typically receive the most water. 12/8/21 Audio 1:06:05-1:06:44. Lining one or more of them would likely save more water than lining other reservoirs given how much water flows into them.

132. A&B and Mahi Pono failed to provide any evidence that lining one, two, or three reservoirs over the next year would be cost prohibitive. 12/8/21 Audio 1:10:30-1:10:57 (Vaught).

133. Aside from any permitting issues, one reservoir could be lined and covered in approximately six months. 12/8/21 Audio 1:10:58-1:11:19 (Vaught).

134. Lining portions of the EMI ditch system can reduce seepage, thereby increasing the yield of water taken from east Maui streams. Exhibit Y-65. The 2012, USGS study titled Measurements of Seepage Losses and Gains, East Maui Irrigation Diversion System, Maui, Hawai‘i observes:

- 11 miles of the EMI ditch system consists of unlined ditches;
- 2.5 miles are only partially lined;
- The partially-lined Ko‘olau ditch has seepage losses of 3 cubic feet per second per mile, constituting losses of up to 32.2%;
- Ko‘olau Ditch and Spreckels Ditch at Pāpa‘a‘ea generally had seepage losses; and
- Discharge measurements in the open-ditch seepage-run measurement reaches—lined and unlined—generally indicated seepage losses

Exhibit Y-65.

135. EMI has not lined any of the EMI ditches within the revocable permit area since at least 1998. 12/8/21 Audio 1:27:06-1:28:14 (Vaught).

Abandoned structures and equipment

136. A&B still has left equipment and structures (gate houses) on land with the revocable permit area that is not being used and serves no purpose. This includes pipes. 12/8/21 Audio 1:30:21-1:30:04, 1:31:42 -1:32:30, 2:04:08-18 (Vaught); 12/13/21 Audio 32:45-33:19 34:44-35:28, 48:50-49:28 (Fretz); 12/13/21 Audio 2:55:27-2:55:59, 2:56:30-2:56:45 (de Naie).

137. Structures and equipment that are no longer in use are a blight on the landscape, create mosquito breeding ground, and alter stream flow patterns. Trial Exhibits 19 and 20; 12/13/21 Audio 50:13-50:38 (Fretz)

138. A&B has not removed any debris, abandoned structures or abandoned pipes from the revocable permit area in 2021. 12/8/21 Audio 1:29:41-1:30:19 (Vaught).

139. A&B has not implemented its policy of removing unused equipment and structures in 2021. 12/8/21 Audio 2:04:18-2:05:32 (Vaught).

Forest Management

140. Invasive species are a problem in east Maui. Invasive species in the revocable permit area degrade the watershed, thereby reducing filtration rates of water, degrading the quality and quantity of water. Invasive species can suppress native species. Mosquitos threaten the recovery of endangered bird species. Exhibit Y-31 at 61; Exhibit Y-32 at 8-9. 12/13/21 Audio 21:59-24:44, 33:25-34:32 (Fretz).

141. DLNR's Division of Forestry and Wildlife, together with East Maui Partnership and the Maui Invasive Species Committee, spend approximately \$800,000 annually (not including fencing) managing the forest in east Maui. 12/13/21 Audio 24:45-25:30 (Fretz). More money would allow more to be done to address invasive species in the revocable permit area. Audio 25:30-26:06 (Fretz); Exhibit Y-31 at 64; Exhibit Y-32 at 15.

142. More funding would allow the community to participate in invasive species control at lower elevations. 12/13/21 Audio 28:15-28:57 (Fretz).

143. EMI has not been contributing financially to forest management or invasive species control in east Maui. 12/13/21 Audio 44:42-45:29 (Fretz).

144. Within or near the revocable permit area live the endangered crested honey creeper ('akohekohe) and the endangered Maui parrotbill (kiwikiu), seven endangered insects, and more than a dozen endangered plants. Exhibit X-3 at 8-9; Exhibit X-1 at 309. Declaration of Michelle Reynolds.

145. If BLNR charged ten cents per 1,000 gallons taken out of the watershed and used

the money to manage the watershed, if A&B took 25 mgd, it would generate \$912,500 annually (= \$2,500 x 365 days).

Access

146. Access to the revocable permit parcels can be challenging because in many areas, EMI land lies between the highway and the revocable permit area. Exhibit Y-66. The existing permits do not require that A&B provide DLNR personnel access, or the public, across EMI land to access the revocable permit parcels. Trial Exhibits J-1—J-4; 12/08/21 Audio 4:31:56-4:32:42 (Hirokawa).

147. There are many trails and old government roads within the revocable permit area. Exhibit X-1 at pdf 342-344.

148. The revocable permits do not appear to require hiker access to public trails in the revocable permit area. Trial Exhibits J-1—J-4; 12/08/21 Audio 4:36:54-4:37:54 (Hirokawa).

149. DLNR's Na Ala Hele Trails & Access Program Maui Island Advisory Council has stated that it is "deeply concerned about restrictions of public access." Exhibit X-3 at pdf 75.

150. It would be in the public interest to facilitate enhanced controlled access to the revocable permit area. 12/13/21 Audio 35:32-46 (Fretz).

Rental Amount

151. The revocable permit rental amount does not fairly represent its fair market value. 12/08/21 Audio 4:22:33-4:22:48 4:24:05-4:24:30 4:26:22-4:27:53 (Hirokawa). There does not appear to be any basis for the amount that is currently charged. *Id.*

152. The rental value of the revocable permits has increased by the consumer price index for the past three years. For this year, the increase should be 6.4%. 12/08/21 Audio

4:28:16-4:28:53 (Hirokawa).

Impact to Mahi Pono of Additional Requirements

153. Imposing additional conditions will not impose a hardship on Mahi Pono. Mahi Pono gets water at a far cheaper rate than other farmers. It costs Mahi Pono 4.8 cents per 1,000 gallons. Exhibit X-2 at PDF 1817. “Farmers in Central O’ahu— who compete with Maui farmers in the Honolulu and export markets—are charged 58 cents per 1,000 gallons for surface water from Waiahole Ditch.” *Id.* Mahi Pono’s competitors pay more than ten times more for water. More than two decades ago, many farmers paid between 60 cents to \$2.47 per thousand gallons of water. *Waiāhole*, 94 Hawai’i at 165, 9 P.3d at 477. If Mahi Pono’s water costs doubled, tripled, quadrupled, or quintupled, it would still be paying far less than any of its competitors.

154. A&B provided no evidence to contradict the 4.8 cents per 1,000 gallon figure in its EIS. 12/8/21 Audio 3:47:26-3:48:17 (Nakama).

155. Mahi Pono has spent more than \$30 million planting citrus that will not produce fruit before 2023 even though it has no assurance that it will receive any water from east Maui streams after 2022. 12/9/21 Audio 1:38:54-1:40:15 (Howe); 12/8/21 Audio 3:33:18-3:33:33 (Nakama). In other words, Mahi Pono has been willing to risk more than \$30 million without any assurance that it will continue to receive east Maui stream water. It cannot, therefore, complain about any expenditures it would need to make to comply with an order requiring the lining and covering of one to three reservoirs as a condition of a one year revocable permit.

CONCLUSIONS OF LAW

1. This contested case hearing is being conducted pursuant to the environmental court’s May 28, 2021 and August 23, 2021 orders as well as BLNR’s August 13, 2021 decision.
2. A&B has the burden of proving that its proposed water use is justified in light of

the purposes of the public trust.

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. The applicant must demonstrate the absence of a practicable alternative water source.

c. If there is a reasonable allegation of harm to public trust purposes, then the applicant 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, Inc. v. Planning Comm'n of the Cnty. of Kaua'i, 133 Hawai'i 141, 174-75, 324 P.3d 951, 984-85 (2014).

3. A&B has failed to demonstrate that 40 million gallons per day (as averaged monthly) is required to be taken from east Maui streams. *See* Howe Declaration.

a. Mahi Pono's request for a cushion, or buffer, of an additional 4 million gallons of water daily (as averaged monthly) is inconsistent with the law. *See* Declaration of Ceil Howe III, ¶20(f); 12/9/21 Audio 1:59:25 – 1:59:41 (Howe); *In Re Water Use Permit Applications*, 94 Hawai'i 97, 155-56, 9 P.3d 409, 467-68 (“*Waiāhole*”) (“the notion of a buffer freely available for unidentified offstream uses, while instream flow standards still await proper designation, offends the public trust and the spirit of the instream use protection scheme. . . . [W]here the Commission has yet to designate proper instream flow standards, a buffer stands the constitution and Code on their heads, allowing diversions of instream flows before the completion of the requisite procedure and analysis for instream use protection.”)

b. Mahi Pono's request for 1.1 million gallons of east Maui stream water for uses in the Historic/Industrial Use category are unsupported and exaggerated.

- c. System losses and non-use of water greater than 22.7% of the total amount of water diverted is not a reasonable or beneficial use of water. Given Mahi Pono's claims that of increased efficiency, it is reasonable to expect losses of less than 20%.
- d. The use of more than 2,500 gallons per acre per day in 2022 for irrigation is not justified given (i) the Commission on Resource Management's 2021 Nā Wai 'Ehā decision (COLs 95 and 193) limiting the use of stream water for irrigation to 2,500 gallons per day, , Exhibit Y-18 and Y-19; (ii) the November 2019 Stipulation and Order Regarding SWUPA 2206 Mahi Pono entered into limiting its use to 2,500 gallons per acre per day, Exhibit Y-17; (iii) Mahi Pono's usage over the past few months which has averaged less than 2500 gallons per acre per day; (iv) CWRM's conclusion that 2,500 gallons per cultivated acre per day was a reasonable amount of water to be used for agriculture in Central O'ahu. *In re Water Use Permit Applications*, 105 Hawai'i 1, 7 and 21, 93 P.3d 643, 649 and 663 (2004) (*Waiāhole II*), and (v) Mahi Pono's failure to provide a robust explanation of the basis of its claim regarding how much water is needed to irrigate its crops.

4. Water taken from a stream that is not needed is wasted. *See Hawaiian Commercial & Sugar Co. v. Wailuku Sugar Co.*, 15 Haw. 675, 690 (1904). The Hawai'i Supreme Court described "nonuse" of water as "the perceived biggest waste of all." *Waiāhole*, 94 Hawai'i at 140, 9 P.3d at 452. The court recognized that "the policy against waste dictates that any water above the designated minimum flows and not otherwise needed for use remain in the streams in any event." *Id.* at 156, 9 P.3d at 468. "The value of diverting water, only to lose the water due to

avoidable or unreasonable circumstances is unlikely to outweigh the value of retaining the water for instream uses." *In re 'Iao Ground Water Mgmt. Area High-Level Source Water Use Permit Applications*, 128 Hawai'i 228, 257, 287 P.3d 129, 158 (2012).

5. Whether characterized as “waste” or “system loss”, far too much of the water diverted from east Maui streams did not need to be diverted in 2020 and 2021.

6. A&B has failed to meet its burden to demonstrate the absence of practicable alternative water sources (including groundwater and water from sources west of Honopou Stream). It has failed provide any evidence that the groundwater would be too brackish for any of the proposed crops. No evidence was provided that its existing pumpage rates have harmed its crops in any way.

7. The Supreme Court has mandated that decisions involving the use of stream water “must include provisions that encourage system repairs and limit losses.” *Waiāhole II*, 105 Hawai'i at 27, 93 P.3d at 669 (2004). A&B has failed to provide any data that would not be practical to line or “make repairs” to the ditch system of any kind. *Cf. Waiāhole*, 94 Hawai'i at 173, 9 P.3d at 485.

8. A&B failed to demonstrate that it cannot use one of its lined reservoirs and cannot line another reservoir in 2022.

9. Because A&B has failed to demonstrate that it needs any to develop, divert or use any water from the Keanae, Nahiku or Honamanu license areas in 2022, there is no basis to continue three of the four revocable permits in 2022.

10. Protection of free-flowing streams is in the public interest. *Reppun v. Board of Water Supply*, 65 Haw. 531, 560 n.20, 656 P.2d 57, 76 n.20 (1982) (“can it be said that there is no public interest in a free-flowing stream for its own sake?”); *Waiāhole*, 94 Hawai'i at 137, 9

P.3d at 449 (“public interest in a free-flowing stream for its own sake”); *Kauai Springs*, 133 Hawai‘i at 172, 324 P.3d at 982 (“the maintenance of waters in their natural state constitutes a distinct ‘use’ that the public trust protects”).

11. Ensuring that Maui County continues to receive water is in the public interest.

12. “[A]lthough interim standards are merely stopgap measures, they must still protect instream values to the extent practicable.” *Waiāhole*, 94 Hawai‘i at 155, 9 P.3d at 467. “[I]nterim standards must still provide meaningful protection of instream uses.” *Waiāhole II*, 105 Hawai‘i at 11, 93 P.3d at 653. In this case, however, the interim standards provide no protection of instream values.

13. BLNR “must apply a presumption in favor of public use, access, enjoyment, and resource protection.” *Kauai Springs*, 133 Hawai‘i at 173, 324 P.3d at 983.

14. The BLNR has a trust duty to protect streams from any and all diversions until substantive instream flow standards are established. In other words, substantive instream flow standards must be established before increased diversions are authorized.

The tentative grant of water use permits without any determination of instream flow standards, conversely, presents the least desirable scenario: no assurance that public rights are receiving adequate provision, no genuine comprehensive planning process, and no modicum of certainty for permit applicants and grantees. Cf. *Concerned Citizens of Putnam County for Responsive Gov’t v. St. John’s River Water Management Dist.*, 622 So.2d 520, 523 (Fla.Ct.App.1993) (“[I]t is difficult . . . to imagine how the water supply can be managed without the establishment of minimums.”).

Waiāhole, 94 Hawai‘i at 149, 9 P.3d at 461. An agency must “take the initiative in planning for the appropriate instream flows before demand for new uses heightens the temptation simply to accept renewed diversions as a foregone conclusion.” *Id.* Meaningful instream flow standards should be established before authorizing increased diversions. Failure to do so could “leave a diverted stream dry in perpetuity, without ever determining the appropriate instream flows.” *Id.*

at 158, 9 P.3d at 471. Early designation of instream flow standards fulfills the BLNR's duty of protection under the constitution, "ensuring that instream uses do not suffer inadvertent and needless impairment." *Id.* at 148, 9 P.3d at 460.

15. In 2003, Judge Hifo ordered that "before authorizing the diversion" of water from east Maui streams, BLNR would have to either conduct an investigation as to how much water in the streams was excess, or wait for CWRM to do so. Trial Exhibit J-10. *Maui Tomorrow v. State of Hawaii*, Civ. No. 03-1-0289-02. "If the BLNR believes it does not have the requisite expertise to investigate, then it should wait until the CWRM has acted or make its own application to establish instream flows reflecting the diversion it proposes to make, before authorizing the diversion." *Id.* at 5. Removing the cap (i.e. allowing for an increase in diversions) at this time would not be prudent.

16. HRS § 171-58, HRS §§ 205A-4, 205A-5, 205A-2(b)(4)(A), 205A-2(c)(4)(A), and 205A-2(c)(4)(D) and the public trust doctrine all authorize BLNR to impose conditions on the continuation of the revocable permit(s) in the public interest.

17. It is in the public interest to require, as a condition of the revocable permit(s), that (a) A&B provide up to 5 million gallons of water per day to the County (for current upcountry Maui domestic uses and the Kula Agricultural Park) and (b) the water be provided to the County for free.

18. In 2003, the legislature determined that

the silent invasion of Hawaii, by insects, disease-bearing organisms, snakes, weeds, and other pests is the single greatest threat to Hawaii's economy and natural environment and to the health and lifestyle of Hawaii's people. . . . The present problem is severe. The future, though, may be even more dire. Slow, piecemeal action will not be sufficient. Drastic improvements must be made now to stem the tide of invasive species.

Act 85, 2003 Sess Laws of Haw. 157.

19. The legislature has also declared:

All indigenous species of aquatic life, wildlife, and land plants are integral parts of Hawaii's native ecosystems and comprise the living heritage of Hawaii, for they represent a natural resource of scientific, cultural, educational, environmental, and economic value to future generations of Hawaii's people.

To insure the continued perpetuation of indigenous aquatic life, wildlife, and land plants, and their habitats for human enjoyment, for scientific purposes, and as members of ecosystems, it is necessary that the State take positive actions to enhance their prospects for survival.

HRS § 195D-1.

20. The legislature has mandated that DLNR “shall” use its authority to “carry out programs for the conservation, management and protection of such [indigenous and endangered] species and their associated ecosystems.” HRS § 195D-5(a).

21. BLNR shall carryout programs for the protection of threatened and endangered species and take such action as may be necessary to ensure that actions it authorizes do not jeopardize the continued existence of threatened or endangered species. HRS § 195D-5(b).

22. It is in the interest of the State to ensure that the watershed is properly managed. A charge to manage the forests in east Maui is consistent with HRS § 171-58(c), 171-58(e) and (f) and the public trust.

23. The legislature determined that “inland recreational areas under the jurisdiction of the State are inaccessible to the public due to the absence of public rights-of-way . . . and that the absence of public access to Hawaii's shorelines and inland recreational areas constitutes an infringement upon the fundamental right of free movement in public space and access to and use of coastal and inland recreational areas.” HRS § 115-1. More specifically,

Prior to the disposition of any public lands, the board of land and natural resources shall lay out and establish over and across such lands a reasonable number of rights-of-way from established highways to the public beaches, game management areas, public hunting areas, and **public forests and forest reserves** in order that the right of the people to utilize the public beaches, game management areas, public hunting areas, **and public**

forests and forest reserves shall be protected.

HRS § 171-26.

24. Allowing for controlled community access to the revocable permit area is in the public interest and is consistent with HRS § 171-26.

ORDER

Pursuant to the above Findings of Fact and Conclusions of Law, and with good cause shown, it is hereby ordered that revocable permit S-7264 (Huelo) is authorized to be continued for another year under the following conditions pursuant to HRS §§ 171-58, 205A-4, 205A-5, 205A-2(b)(4)(A), 205A-2(c)(4)(A), 205A-2(c)(4)(D), and the public trust doctrine:

1. Revocable permits S-7263 (Honomanu), S-7265 (Keanae) and S-7266 (Nahiku) are terminated.
2. Given the impact of the diversions on the dozen Huelo streams, their substantially unprotected status, the pending IIFS petition, the lack of persuasive evidence that more than 25 mgd needs to be diverted from the east Maui streams, the current 25 million gallon per day cap on the total amount of water diverted by the East Maui Irrigation System from the revocable permit area S-7264 (as measured at Honopou Stream and as averaged monthly) shall not be increased until the Sierra Club's IIFS petition is resolved:
 - a. A yearly average of 2.66 mgd shall be provided to the County (recognizing that on some days, the County may need up to 5.81 million gallons of water for both the Kula Agricultural Park and the Kamole water treatment plant, and that in some months the County's needs will be more than an average of 2.66 mgd, but that the County has not needed more than 4.9 mgd as averaged in any month in

- the past five years);
- b. a monthly average of up to 100,000 gallons per day can be used in the category labelled Historical/Industrial uses;
 - c. up to 16 mgd may be used for irrigation (so long as the cap is not exceeded);
 - d. a monthly average of no more than 5 million gallons of water can go into reservoirs, or the category labelled “Reservoir/Fire Protection/ Evaporation/Dust Control/Hydroelectric/ Seepage/System Loss.”
3. All diverted water shall be for reasonable and beneficial uses. There shall be no waste of water. System losses shall be limited to 20% of all water taken. All water diverted shall be put to beneficial agricultural use or municipal use. All interim instream flow standards and orders from CWRM shall be complied with.
 4. EMI/Mahi Pono shall use reservoir #23, which is lined, to irrigate fields 501, 509, 510, 511, 512.
 5. EMI/Mahi Pono shall ensure that reservoir #25, #61, #81, **or** #90, which receive excess groundwater and typically receive the most water, is lined by the end of 2022 (with a possible extension if government agencies cause delays in any necessary permitting).
 6. A&B shall provide water to the County of Maui for its existing domestic uses in Upcountry Maui and for the Kula Agricultural Park free of charge. A&B shall ensure that a minimum of 7 million gallons per day flow in the Wailoa Ditch past the Kamole Weir.
 7. Diverted water taken in excess of what the County of Maui actually needs on any given day shall not be wasted. It may be used to irrigate Mahi Pono’s crops, but shall

not be left un-used.

8. The County shall give EMI notice when it is possible that it will need to draw more water at the Kamole Weir Treatment Plant than its average use. At a minimum such notice will be provided whenever the Piiholo reservoir levels drop to 35 million gallons.
9. A&B can pump at least 6 million gallons of groundwater per day in conjunction with the use of east Maui water (particularly on those days when the County needs more water than average). If the Board, Department or CWRM determine that pumpage of that quantity of water is not sustainable, the pumpage shall be reduced accordingly.
10. A&B shall provide to BLNR and CWRM each month contemporaneous data as to the salinity of each well from which groundwater is pumped and scientific literature that discusses the salt tolerance of the crops that are being irrigated with east Maui stream water that could be irrigated with groundwater.
11. A&B shall provide quarterly reports to all parties in the contested case hearing on the 15th day after the end of each quarter in the following format:

Water Used in mgd

Month	East Maui water @ Honopou	County DWS	County Ag Park	Diversified Ag (including to 3 rd parties)	Industrial / Historic Uses*	Other miscellaneous uses (e.g. dust control)*	All non-productive uses including seepage, evaporation, other losses, storage
Quarterly Average							

* Industrial, historic and miscellaneous uses shall specify the character and purpose of water use and the user of the water.

Sources of Water Used for diversified agriculture (including 3rd parties) in the Quarter

Month	Water from RP area mgd	Water from streams west of Honopou mgd	Groundwater pumped mgd
Quarterly Average			

Acres of irrigated agricultural land using east Maui water per month:

Crop	Acres	Water Used mgd	Field	groundwater available?
Total			-	-

In addition, A&B and EMI shall provide retroactive revisions of the reports submitted over the past two years in the above format.

12. A&B’s quarterly reports shall also describe and document the debris, abandoned equipment and structures removed that quarter.
13. A&B’s quarterly report shall also provide a quarterly status update as to the artificial structures on each stream within the revocable permit area (which ones have been removed, which ones have been modified, which ones remain to be modified, what remains to be done until they are modified, and when the modifications are expected to be completed).
14. A&B shall deposit \$500,000 into the forest stewardship fund, HRS § 195F-4, for the control of invasive species in the east Maui watershed, or contribute \$500,000 to the

East Maui Watershed Partnership to hire two additional staff members to reduce the spread of invasive species within the revocable permit area.

15. Within ninety days, A&B shall start lining EMI ditches to reduce loss of water.
16. Within sixty days, A&B shall submit a detailed plan for system upgrades to reduce seepage and evaporation. The plan shall include dates and estimates as to how much each upgrade will reduce seepage and/or evaporation.
17. A&B shall maintain an email-based system by which community groups and organizations can obtain keys and access to hiking trails and streams within the revocable permit area.
18. Each quarter DLNR shall host a meeting to discuss water usage issues as well as issues related to diversion structures. The committee shall consist of members representing Alexander & Baldwin, East Maui Irrigation, Mahi Pono, the Office of Hawaiian Affairs, the Native Hawaiian Legal Corporation, the Haiku Community Association, the Sierra Club, the Huelo community, and the County of Maui.
19. A&B shall cleanup unused equipment and structures (including unused parts and pipes) from revocable permit areas. Within thirty days, A&B shall submit a written plan for removing abandoned structures, and equipment from ceded lands that includes an increase in staffing and time devoted to the removal of debris. Within thirty days, A&B shall apply for any and all necessary permits so that it can resume the activities that took place in 2020 to remove abandoned structures and equipment on state land.
20. A&B shall pay \$21,134.73 ($\$19,863.47 \times 1.064$) per month for the use of these lands and waters.

21. All standard BLNR conditions are incorporated.

Dated: Honolulu, Hawai'i, December 22, 2021.

/s/ David Kimo Frankel
Attorney for the Sierra Club

BOARD OF LAND AND NATURAL RESOURCES

STATE OF HAWAI'I

In the Matter of a Contested Case Regarding) DLNR File No. CCH-LD-21-01
the Continuation of Revocable Permits (RPs))
for Tax Map Keys (2) 1-1-001:044 & 050;) Certificate of Service
(2) 2-9-014:001, 005, 011, 012 & 017; (2) 1-)
1-002:002 (por.) and (2) 1-2-004:005 & 007)
for Water Use on the Island of Maui to)
Alexander & Baldwin, Inc. and East Maui)
Irrigation Company, LLC for the remainder)
of the 2021 RPs, if applicable, and for their)
continuation through the end of 2022)

Certificate of Service

Pursuant to Minute Order No.s 1 & 5, a copy of the foregoing is being served via email today to:

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Dated: Honolulu, Hawai'i December 22, 2021

/s/ David Kimo Frankel
Attorney for the Sierra Club