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COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

PETITION TO AMEND INTERIM INSTREAM FLOW STANDARDS FOR HONOPOU, HUELO (PUOLUA), HANEHOI, WAIKAMOI, ALO, WAHINEPEE, PUOHOKAMOA, HAIPUAENA, PUNALAU/KOLEA, HONOMANU, NUAAILUA, PIINAAU, PALAUHULU, OHIA (WAIANU), WAIOKAMILO, KUALANI, WAILUANUI, WEST WAILUAIKI, EAST WAILUAIKI, KOPILIULA, PUAKAA, WAIOHUE, PAAKEA, WAIAAKA, KAPAULA, HANAWI, AND MAKAPIPI STREAMS	Case No. CCH-MA13-01 **HAWAIIAN COMMERCIAL & SUGAR COMPANY'S REBUTTAL BRIEF; CERTIFICATE OF SERVICE**

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HAWAIIAN COMMERCIAL & SUGAR COMPANY'S RESPONSIVE BRIEF

I. INTRODUCTION

Hawaiian Commercial & Sugar Company ("***HC&S***") submits this Rebuttal Brief pursuant to Minute Order No. 12.

II. ARGUMENT

A. Nā Moku Continues to Misstate Applicable Legal Standards.

Nā Moku's Responsive Brief continues to misstate the legal standards applicable to this proceeding. The foundational premise underlying Nā Moku's articulation of legal standards is that the CWRM must accord identified public trust uses (e.g., resource protection and traditional and customary practices)[1] a position of absolute priority above all other categories of water use. As HC&S' Responsive Brief pointed out, the Hawai'i Supreme Court rejected such a hierarchy in *Waiāhole I* and its progeny. In *Waiāhole I*, the Hawai'i Supreme Court stated that "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." *In re Water Use Permit Applications*, 94 Hawai'i 97, 142, 9 P.3d 409, 453 (2000) ("***Waiāhole I***").

Nā Moku's formulation of the "reasonable-beneficial" standard suffers from the same erroneous assumption that identified public trust uses command absolute priority. Nā Moku

[1] Mindful that the purposes of the public trust evolve over time, *see Waiāhole I*, 94 Haw. at 136, 9 P.3d at 448, HC&S employs the term "identified public trust uses" to refer to the four water uses that the Hawai'i Supreme Court has identified as public trust uses thus far, namely (1) resource protection, (2) domestic uses, (3) protection of traditional customary native Hawaiian rights, and (4) reservations of water for the Department of Hawaiian Home Lands. *See id.* at 136-38, 9 P.3d at 448-450; *In re Wai'ola O Molokai, Inc.*, 103 Hawai'i 401, 429, 431, 83 P.3d 664, 692, 694 (2004).

contends that the reasonable-beneficial standard requires HC&S to prove that its use of East Maui stream water does not harm stream biota and ecosystems or interfere with Nā Moku's use of the streams for native Hawaiian traditional and customary practices. However, this is a proceeding to set IIFS. Unlike a proceeding to decide Water Use Permit applications ("***WUPAs***"), the burden of proof does not fall on any particular party in an IIFS-setting proceeding. Rather, it is CWRM's duty to establish IIFS that "protect instream values to the extent practicable" and "protect the public interest." *In re 'Īao Ground Water Management Area High-Level Source Water Use Permit Applications*, 128 Hawai'i 228, 253, 287 P.3d 129, 154 (2012) ("***Nā Wai 'Ehā***") (internal quotation marks omitted) (quoting *In re Water Use Permit Applications*, 105 Hawai'i 1, 11, 93 P.3d 643, 653 (2004); HRS § 174C-71(2)(A)).

Nā Moku is thus incorrect to argue that a noninstream use is a "reasonable-beneficial" use only if it can be shown to not have deleterious effects on identified public trust uses. Aside from the logical impossibility of proving a negative, Nā Moku's proposed standard of proof improperly grants absolute priority to identified public trust uses and runs contrary to the holding in *Nā Wai 'Ehā* that the burden of proof does not rest on any particular party in an IIFS-setting proceeding.

Moreover, to the extent the public interest is germane to the inquiry of whether the reasonable-beneficial use standard is satisfied, the "public interest" does not equate to Nā Moku's interests.[2] Nā Moku continues to engender confusion by conflating ***public trust purposes*** with the ***public interest***. The two are not identical. Protection of the public interest is the CWRM's ultimate aim in setting IIFS. *See* HRS § 174C-71(2)(A) ("Any person with the

[2] The Water Code defines "reasonable-beneficial use" as follows: "'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 (emphasis added).

proper standing may petition the commission to adopt an interim instream flow standard for streams in order to protect the public interest pending the establishment of a permanent instream flow standard[.]"); *Nā Wai 'Ehā*, 128 Hawai'i at 251, 287 P.3d at 152 (citing HRS § 174C-71(2)(A)); *Waiāhole I*, 94 Hawai'i at 133, 9 P.3d at 445 ("The ultimate objective of the Commission is to ensure that all uses of the streams at issue, whether instream or offstream, public or private, promote the best economic and social interests of the people of the state."). Public trust uses, on the other hand, are concerns the CWRM is duty-bound to weigh in setting IIFS, but they do not embody the entirety of the public interest. The CWRM should give public trust uses "special consideration or scrutiny" but must not assign them a position of "categorical priority." *Waiāhole I*, 94 Hawai'i at 145-46, 9 P.3d at 457-58. Instead, CWRM is to weigh competing interests and strike the balance among them that best serves the public interest.

In performing that balancing exercise, CWRM must duly consider the public benefits of allowing use of water for commercial purposes. The Hawai'i Supreme Court has taught that "private commercial use for economic development, although not a cognizable trust objective, 'may produce important public benefits and . . . must figure into any balancing of competing interests of water.'" *In re Wai'ola*, 103 Hawai'i at 432, 83 P.3d at 695 (quoting *Waiāhole I*, 94 Hawai'i at 138, 9 P.3d at 450, ellipses in original). Nā Moku omits this piece of analysis from its legal framework. In its endeavor to portray HC&S as an enterprise driven singularly by profits, Nā Moku glosses over the human and environmental interests that hinge upon the continued viability of the business. Approximately 750 HC&S employees and their families will be directly impacted if HC&S lacks an adequate supply of East Maui surface water to continue its operations in a financially viable manner. *See* Declaration of Rick Volner dated 12/30/14 at ¶ 34. Closure of HC&S' operations would also have ripple effects on the economy of the

County of Maui and State of Hawai'i because HC&S expends $115 million annually, a majority of which is spent on Maui. *See id.* In terms of environmental benefits, the continued operation of HC&S keeps 35,000 acres in agricultural use instead of urban development or allowing such lands to fall into disuse, which would convert the green fields of Central Maui into an arid and windswept landscape prone to fire hazards. *See* Ex. C-65 at 7, 16. The County of Maui Department of Water Supply relies on the EMI ditch system to deliver water to its customers in Upcountry Maui; continued operation and maintenance of the ditch system would be impracticable if HC&S were to cease operations. *See* Declaration of David Taylor dated 12/30/14 at ¶ 7. These are just some of the public benefits at stake that must factor into CWRM's balancing analysis.

B. The Factual Record Contradicts Nā Moku's Propaganda-Driven Narrative Regarding the Progressive "Dewatering [of] the 27 Streams" by EMI.

An extensive body of historical and scientific evidence has been developed by CWRM in these IIFS proceedings and by the BLNR in the Lease Proceeding that largely discredits Nā Moku's propaganda-driven narrative regarding EMI's progressive "dewatering [of] the 27 Streams." In its Responsive Brief, Nā Moku nonetheless persists in falsely characterizing the EMI Ditch System as "dewatering the 27 streams."[3] Never mind that EMI does ***not even divert*** several of these streams and does not ***"dewater"*** the remainder. In the face of nearly 100 years of ditch flow records and other evidence to the contrary – Nā Moku continues to promote the politicized fiction that "EMI has ***progressively taken more water*** from East Maui for decades."[4] Like the wildly exaggerated taro acreages claimed in Nā Moku's Opening Brief, this overreaching style of advocacy taints all of Nā Moku's submissions.

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[3] *See* Nā Moku's Responsive Brief at 5.

[4] *See id.* at 26.

1. The 27 streams are not "dewatered."

EMI does not "dewater" the 27 streams that are the subject of Nā Moku's IIFS petitions. Waianu and Kualani have never been diverted by EMI. Waikani is just another name for Wailuanui. Waiokamilo has not been diverted since 2007. Palauhulu's low flows have not been diverted since 2010, with no effect on the stream where it crosses the Hana Highway because of the sinkholes between the Koolau Ditch and Store Spring. While EMI does operate diversions that affect the remaining 23 streams, resulting in temporarily dry reaches at times, many of these streams naturally have dry reaches during periods of low rainfall, and none are completely "dewatered." *See* Rebuttal Declaration of Garret Hew ("***Hew Rebuttal Decl.***") at ¶ 2.

2. EMI's diversion of water has decreased – not increased – since 1923.

Exhibit C-124 is a chart that displays in graphical format the same historical data summarizing EMI deliveries to HC&S that is included Exhibit C-34. It shows that these deliveries have trended down over time, thus disproving the assertion by Nā Moku on page 26 of its Responsive Brief that "EMI has progressively taken more water from East Maui for decades." Exhibit C-125 is the same chart as C-34, but with another column added to reflect the annual totals in mgd. *See* Hew Rebuttal Decl. at ¶ 3.

The reference cited by Nā Moku to an increase in capacity of the Wailoa Ditch from 160 to 195 mgd sometime after 1923 is misunderstood and misapplied. As is evident from Exhibit C-124, it did not result in an increase in the total amount of water being diverted. Instead, it allowed EMI to retain more water at the elevation of the Wailoa Ditch, enhancing the flexibility of HC&S to distribute the water within the plantation as needed once it was received at Maliko Gulch. *See* Hew Rebuttal Decl. at ¶ 4.

As originally constructed, the Wailoa Ditch had a capacity of 200 mgd between Kolea Stream and Alo Stream, at which point water could be dropped to the New Hamakua Ditch

below. Sometime after 1923, probably during the 1960's, a modification was made that increased the amount of water conveyed in the Wailoa Ditch across Maliko Gulch to 195 mgd. Previously, when more than 160 mgd was in the Wailoa Ditch, it had to be dropped to a lower ditch west of Honopou. The current capacities of each ditch section are all shown on Exhibit C-33. *See* Hew Rebuttal Decl. at ¶ 5.

In practical terms, this increased capacity of the westernmost section of the Wailoa Ditch has not affected the aggregate amount collected by EMI because it is used to maximize the elevation at which water is brought in, not to increase the total amount of water that is collected. Since it can only come into play when Wailoa Ditch flows exceed 160 mgd, it has no effect whatsoever on the amount of water taken from the streams during low flows. *See* Hew Rebuttal Decl. at ¶ 6.

3. The decline in taro cultivation in Keanae and Wailua was not caused by EMI.

In 1985, there were many more taro farmers and much more taro being cultivated in Wailua than there is today. Exhibit C-126 is a copy of Exhibit A-54 from the Water License CCH, which is an 1985 aerial photograph of the Wailua area upon which yellow highlighting was superimposed to identify the areas that were in taro cultivation in 2005, as also shown on Exhibits C-115 and C-116. It is apparent from Exhibit C-126 that a much larger area was being cultivated in 1985 that in 2005. This is also consistent with the personal observations of Garret Hew regarding the gradual withdrawal of acreage from production from 1985 to 2005 as taro farmers aged and retired without being replaced in equal numbers by younger family members. *See* Hew Rebuttal Decl. at ¶ 7.

As shown on Exhibits C-34, C-124 and C-125, there was no increase from 1985 to 2005 in the amount of water diverted by EMI. Further, as a result of EMI's cessation of its diversion

of Waiokamilo Stream in 2007, and the USGS stream flow measurements taken below, it has now been demonstrated that Waiokamilo Stream, the source for most of this area, is dry between the Koolau Ditch and Akeke Springs during low flows. Historically, therefore, the water taken by EMI from Waiokamilo Stream since the completion of the Koolau Ditch had little or no effect on the base flow of Waiokamilo Stream or the ability to cultivate taro in Wailua. *See* Hew Rebuttal Decl. at ¶ 8.

This was previously addressed thoroughly by the BLNR in its Findings of Fact Nos. 85 through 90 in the 2007 Interim Relief Order as follows:

> 85. Even after the Koolau Ditch was completed in 1904 and well into the 1930's, there was much more taro cultivation in the Wailuanui-Ke'anae area than there is today. Petitioners' Direct Expert Testimony of Davianna Pomaikai McGregor, Ph.D. ("McGregor Direct Testimony") at 9; Tr. 10/11/05 at 112:23-113:8, 118:20-119:9; Exhibit B-123 at Figure 16.
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> 86. Approximately 30 to 50 acres of lo'i were also cultivated in the 'ili of Kupa'u up until the 1950's. The 'ili of Kupa'u is above Lakini and below Akeke Springs and shares the same stream source as Wailuanui valley, which is Waiokamilo Stream. Exhibit B-123 at 64.
>
> 87. Accordingly, Waiokamilo Stream provided sufficient water to sustain 50-100 acres of taro in Wailuanui-Ke'anae for many years after EMI began diverting Waiokamilo Stream in 1904. McGregor Direct Testimony at 9; Tr. 10/11/05 at 112:23-113:8, 118:20-119:9; Exhibit B-123 at 64 and Figure 16.
>
> 88. Beginning in the 1880's and continuing through the 1920's, many taro patches in Wailuanui below the Hana Highway were converted into rice paddies. By 1895, there was a sizable area in Wailuanui devoted to rice cultivation. The conversion of taro lands into rice preceded the completion of the Koolau Ditch, which diverts Waiokamilo Stream, in 1904, and thus does not appear to have been caused by the diversion of water into the Koolau Ditch. Tr. 10/11/05 at 77:20-78:10, 99:5-100:4, 102:21-104:3; Exhibit B-123 at 112 and Figure 9.
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> 89. The conversion of taro lands into rice is also attributable to socioeconomic factors such as the extraction of young men from the Ke'anae-Wailuanui area due to World War II; the decline in available labor; the progressive effect of taking taro fields that are configured in an interlinking

fashion out of service; and a decline in the market for taro. Tr. 10/11/05 at 105:18-106:7, 121:15-122:20; Exhibit B-123 at 112-13.

90. Contrary to the position advanced by Na Moku, ***it is clear from the historical evidence submitted that the decline in taro production in Wailuanui valley over the last century is not attributable to any shortage of water caused by the diversion of water by EMI.*** Tr. 10/11/05 at 124:2-4.

See Ex. C-83 at 29-30 (emphasis added). The record references in the 2007 Interim Relief Order to "Exhibit B-123" are to "Kalo Kanu O Ka `Aina, a Cultural Landscape Study of Ke`anae and Wailuanui, Island of Maui," which was co-authored by Nā Moku's expert witness, Davianna McGregor, Ph.D., and published in July, 1995 (the "1995 Cultural Landscape Study"). Exhibit C-127 is a copy of this publication, as submitted by Nā Moku in the Water License CCH. Exhibits C-128 through C-132 are copies of the transcripts of the live testimony received in the Water License CCH.

In Keanae, the decline in cultivation has been less dramatic. Since September of 2010, however, when EMI opened its sluice gate at the Koolau Ditch on Palauhulu Stream, it has been demonstrated that the base flow of Palauhulu Stream where it crosses the Hana Highway is also not affected by EMI's diversion at the Koolau Ditch due to losing reaches between the Koolau Ditch and Store Spring. This explains why taro cultivation in Keanae, as well as in Wailua, continued for most of the last century, notwithstanding the 1904 completion of the Koolau Ditch. *See* Hew Rebuttal Decl. at ¶ 9.

4. Native Hawaiian traditional and customary practices thrived in Keanae and Wailua for decades following the 1923 completion of the EMI Ditch System

Importantly, it was Nā Moku who submitted the 1995 Cultural Landscape Study as an exhibit in the Water License CCH – but not in the current proceeding. This is unsurprising inasmuch as the interviews given for this study, published before the current IIFS petitions were filed, spoke much more glowingly of the condition of the aquatic wildlife in this area than the

conclusory declarations submitted in this proceeding. The following are excerpts from statements collected and published in the 1995 Cultural Landscape Study:

PAGE	NAME	STREAM	STATEMENT
102	Charmaine Day		Life is easier here than the outside world. Here, can hunt, can fish, can farm.
102	Enos Alcina		Over here, I got free things to eat ... That's how we live over here, 'opae, o'opu, hihiwai, 'opihi. The sea clear, we go get 'opihi, fish.
102	Kaipo Kimokeo		We're lucky. This is the place. We're blessed, we took such good care of everything we had. Awapuhi said, and till today I remember the word she used is "selfish". The word selfish is for the people over here, to protect the area. Selfish doesn't mean that we going to make money, selfish is because the area, we don't want it to get spoiled. This is the difference between selfish and stingy. We have to be selfish
103	Mary Kaauamo		Wailuanui they have everything. They have the taro patch, they have the fishing ground, they have the 'opae, they have the o'opu, they have the shell in the patch, you know, they have everything what you want. It's that, you have to do it yourself, you see... you got to work hard for everything that you want.
104-105	Awapuhi Carmichael		All mauka for 'opae. And then below have the o'opii and the prawns, they introduced the prawns, and hihiwai. Above the road is more the 'opae. Above the road is where all the 'opae are. Above the main highway. And then below the road has hihiwai, o'opu, you know.
107	Moki Day		You can consider all the shoreline area between here and Kaupo as breeding grounds for all these shoreline species of fish. They come into our rivers here because we have the fresh water, and they come in here and breed here and lay their eggs here. You go around here in certain seasons or certain times of the year and you see them, they come out in schools.
111	Awapuhi Carmichael		Fishes need water too. Certain fishes need water to spawn. That's why we're lucky, we have enough water for the fishes.

PAGE	NAME	STREAM	STATEMENT
114	Paul Sinenci, Jr.,	Hanawi	Got hiliiwai, 'opae, taro, dryland taro, the kind 50 pounds. Hanawi spring is a big spring.
114	Awapuhi Carmichael	Hanawi	Even Hanawi, we use Hanawi for gathering rights ... definitely, the Hanawi stream. Big springs is right here, ya. Here's the gate. Here's the pump. The trail would be right around there and right down to Hanawi. Hanawi, all the way down. From the ridge, then you go down to the stream. This would be the big waterfall, so you stop over here. There's a high waterfall. Here you also collect hihiwai, till you get down to the beach. When you get down to the beach, you can have your gathering rights for 'opihi, and then you go fishing over there too. In fact this whole place over here, they use it for gathering rights. All along the shoreline, use for gathering rights. Too bad my dad is not you know, they were the only ones, our family used to walk from the mountain to the shoreline in all of these places.
114	Charmaine Day	Honomanii	People use it for everything. You can get anything in there. They gather pepeiao. The stream doesn't have much ... cause sometimes we get water in the stream ... and sometimes we don't get water in the stream. And then there's pohole. And they fish. Moki guys fish overthere . . . and 'opihi. They launch over there, surround akule in that bay.
114	Paul Sinenci, Jr.	Honomanii	This side, got fern, get kukui nut, with the kukui nut we make inamona.
114	Awapuhi Carmichael	Honomanii	They fish there. And have gathering rights.
115	James Hueu	Honomanu	Honomanu they go up too. O'opu. I think there's more 'opae than o'opu. I don't know if Honomanu has hihiiwai. In there easy to get up. Maybe the people who go tenting they go up.
115	Charmaine Day	Keanae	Get kupe'e down at Ke'anae side . .. still get everything - hihiwai, 'opihi, whatever. Got to keep people from outside away, so that we can still have all these things.

PAGE	NAME	STREAM	STATEMENT
115	Paul Sinenci, Jr.	Keanae	Ke'anae point is also a good fishing spot.
115	Paul Sinenci, Jr.	Kopiliula	We go gathering there. We fish, get hihiwai. Good diving grounds. The stream branches. Got hihiwai, 'opae, bananas up Wailuaiki.
115	Moki Day	Kopiliula Waiohue	Kopili'ula is one of the places that has big hihiwai. Waiohue is another place. This is where my family has gone for generations. And I find myself chasing the general public out from these areas. I've chased Filipinos out.
116	Paul Sinenci, Jr.	Moku Mana Islet	Go fishing, get 'opihi. Hahaha Bay - that bay got plenty 'opihi too.
116	Paul Sinenci, Jr.	Nua'ailua	Get awa, fern, opae. Go surfing. Gather.
117	James Hueu	'Ohi'a Spring	Watercress is cultivated here by the daughter of James Hueu.
117	Paul Sinenci, Jr.	Pi'ina'au	Pi'ina'au flows all the time. Get 'opae, hihiwai.
118	Paul Sinenci, Jr.	Waihinepee	Go along the stream to gather, also go along the ditch to gather. Lots of 'opae in the tunnels.
120	Paul Sinenci, Jr.	Wailuaiki	We go by trail, over the rocks to surf and its a fishing spot too.
120	James Hueu	Wailuaiki	But way down at the end, a person by the name of Adams has his land now. There are a lot of terraces. And they have a little creek there. They have o'opu, they have 'opae, and hihiwai in there.
120	James Hueu	Wailuanui	Wailuanui has hīihīwai

PAGE	NAME	STREAM	STATEMENT
121	James Hueu	Waiohue	Fishing, 'opae. All the streams got 'opae, but us, we go to certain places, you got to move too. O'opu, yeah. All of these streams. Got fishing all along the shoreline. This is where they breed - by the stream water and the open water. The brackish water is where they breed. O'opu, mullet, moi, aholehole, the silver fishes, oama, they all go up stream too. Special kind of place over here. All the bays.
122	Paul Sinenci, Jr.	Makaiwa	Fishing, very good gathering.

It is no coincidence that Nā Moku did not appeal either the 2007 Interim Relief Order or CWRM's 2008 decision on the 8 Prioritized IIFS Petitions and did not submit the 1995 Cultural Landscape Study as an exhibit in this proceeding. Nā Moku knows full well that the facts do not support Nā Moku's revisionist narrative that EMI caused the demographic changes in Wailua associated with the decline of taro cultivation, or that further modifications to the IIFS for the 8 Prioritized IIFS Petitions are needed.

C. Nā Moku's Positions on Flow Restoration For the Purpose of Enhancing Stream Biota and Habitat Are Extreme and Misinformed.

Nā Moku's Responsive Brief makes three basic points pertaining to restoration of flow for the purpose of enhancing stream biota and habitat.

First, Nā Moku opposes the setting of IIFS on a seasonal basis. HC&S addressed this argument in its responsive brief.

Second, Nā Moku objects to CWRM adopting a regional approach to stream restoration. As shown below, Nā Moku's opposition has no basis in law or science. The Water Code does not prohibit CWRM from taking a regional approach, and in fact, expresses a preference for

comprehensive water management and regulation. Moreover, there is no scientific justification for precluding CWRM from setting IIFS on a regional basis.

Third, Nā Moku maintains that protection of native stream animals demands that the IIFS be set in a manner that returns full flow to all 27 streams. Below, HC&S demonstrates why such an approach is neither necessary nor beneficial to the public interest.

1. Nā Moku's objections to the adoption of a regional approach to restoration are not legally supported.

Nothing in the Water Code precludes CWRM from taking a region-wide perspective in setting IIFS and analyzing the impacts of flow restoration on stream ecology and biota. The text of the Water Code provides that IFS shall be established "on a stream-by-stream basis," and that IIFS may be "adopted on a stream-by-stream basis or may consist of a general instream flow standard applicable to all streams within a specified area[.]" HRS §§ 174C-71(1), -71(2)(F). Nā Moku construes the phrase "stream-by-stream basis" as a prohibition against CWRM taking a regional approach to setting IIFS, but that language neither precludes CWRM from evaluating instream and offstream needs and uses on a regional basis, nor requires CWRM to restore flow in each stream. The Water Code simply states that each stream is to have its own IFS and may have its own IIFS.

Other Water Code provisions further endorse a regional approach to water planning. In describing the components and characteristics of the Hawaii Water Plan, the Water Code provides that certain rivers and streams are meant to be preserved as wild and scenic rivers, other streams may be designated for the protection of the environment or the procreation of fish and wildlife, while others may be reserved as a particular source of supply. *See* HRS §§ 174C-31(c)(4), (k), (l). Such designations would be impracticable if each stream is considered in isolation because reserving the stream for one use would mean denying all other uses of the

stream. The Water Code also requires county water use and development plans to include "[r]egional plans for water developments." *Id.* § 174C-31(f)(3).

Additionally, *Waiāhole I* affirmed CWRM's regional approach to water regulation. There, the Hawai'i Supreme Court upheld CWRM's "consolidated approach" to regulating the Waiāhole Ditch infrastructure as a unified system "demonstrate[d] due regard for the direct and inevitable interrelationship among the waters collected by the ditch system," which "comports entirely with the Commission's function of comprehensive water planning and management." *Waiāhole I*, 94 Hawai'i at 175, 9 P.3d at 487. Analogously, in setting the IIFS for the 27 East Maui streams at issue, CWRM is not legally bound to weigh instream and offstream values and uses pertinent to each individual stream in isolation from that of other streams.

2. The available scientific data on habitat and biota in East Maui streams do not compel a stream-by-stream approach to setting IIFS.

Nā Moku's opposition to a regional approach to stream restoration is based on the assumption that each stream is closed system that hosts native amphidromous animals across their life cycle—*i.e.*, at the larval stage and, after downstream migration to the ocean, when they recruit upstream to reproduce. However, Nā Moku point to no data validating that assumption. Scientific studies actually indicate that the life cycle of individual native amphidromous animals species do not necessarily occur in a single stream. Hawaiian amphidromous species are part of statewide metapopulations, and there is a lack of evidence that these species return to their natal stream after hatching. *See* Ex. C-133 (Richard Blob et al. (2010)) at 1186 (("Evidence indicating that these fishes home to their natal streaming is lacking . . . ."); Ex. C-134 (J. Michael Fitzsimons et al. (2007)) at 17 ("Because of their amphidromous life cycle, every fish in every Hawaiian stream is a migrant and may or may not have begun life in the stream where it is observed, and there is no certainty that young animals are the offspring of adults in the same

stream."); Ex. C-135 ('O'opu 'Akupa Fact Sheet) at 1 ("Post-larvae [of 'o'opu 'akupa] are found in oceanic waters, but little is known of its oceanic distribution, but post-larvae do not show natal stream fidelity."). Population-genetic data actually suggest the opposite: Fish hatched on one island may recruit to the other islands. *See* Ex. C-133 at 1186. There is, however, evidence that amphidromous fish larvae in the ocean tend to stay within the vicinity of their natal streams. *See* Ex. C-134 at 16.

Hence, the available scientific data reinforce the prudence of adopting a regional approach to stream restoration. The Department of Land and Natural Resources, Division of Aquatic Resources ("***DAR***"), in its prior recommendations to the CWRM regarding the 19 IIFS East Maui Petitions, supported restoration of flow in fewer streams rather than a large number of streams in order to achieve higher ecological impact. *See* Testimony of Glenn Robert Higashi ("***Higashi Testimony***") at ¶ 12. DAR reasoned that return of H_{min} flow rates in nine streams would provide the "biggest bang for the buck" in terms of habitat restoration. *See id.* at ¶ 24. DAR expressed its preference that one or two streams be restored to H_{min} flows, as opposed to restoration of more streams to lower flow rates, because those are the streams where larvae will be produced and, with time, the propagules will spread along the coastal areas and return in other streams as well. *See id.* at ¶ 25. Now that IIFS reflecting a regional approach to restoration have been implemented and studied, it appears that DAR continues to support the regional approach in these proceedings.

3. Full restoration of all streams would be harmful to the public interest and has not been demonstrated to be necessary to support populations of native stream species or consumptive use of such species in traditional and customary practices.

Nā Moku argues that each stream should be restored to full flow because that would provide maximum benefits in terms of stream habitat and biota. DAR did indeed observe that

full stream restoration would yield the most ecological and biological benefits, but DAR did not go so far as to recommend full restoration of all streams. Even DAR recognized it is unrealistic to stop all diversions in light of the competing demands for valuable water resources. *See* Higashi Testimony at ¶ 25. As discussed above, cessation of all existing diversions of the East Maui streams would distress the economies of the State and County of Maui, threaten public health and safety, and degrade the environment, among other things. DAR thus took the comparatively measured approach of recommending restoration of H_{min} flow in a limited number of streams. This would still yield positive effects on stream ecology because 100% complete animal connectivity is not required to have some biological viability. *See id.* at ¶ 14. And, indeed, the Monitoring Report prepared by DAR is supportive of that view, as the data indicate that the return of flow resulting from implementation of the IIFS set in 2010 has positively impacted stream animals.

Nā Moku further attempts to justify full stream restoration by arguing that, apart from the benefits to native stream animals gained by restoration, Nā Moku's members would benefit from an increase in their ability to engage in consumptive use of stream animals. Na Moku asserts that current metapopulations of native stream animals, though healthy, are insufficient to support ongoing and future gathering practices and thus need to be supplemented. Nā Moku provides no scientific evidence to support this assertion. Nor does Nā Moku estimate the amount of native stream animals its members intend to gather. Nā Moku is silent about the harvestable yields of native stream animals it deems necessary to support the gathering practices of its members, and makes no attempt to quantify the population size that would produce such yields. Although CWRM need only "reasonably estimate" offstream demands in setting IIFS, *see Nā Wai 'Ehā*, 128 Hawai'i at 258, 287 P.3d at 159. Nā Moku has not provided CWRM with adequate

information to satisfy this standard in regards to the amount of water allegedly needed to support Nā Moku's gathering practices.

D. HC&S' Water Needs, as Clarified Herein, Are Reasonable-Beneficial.

1. Average Daily Evapotranspiration

Nā Moku complains that HC&S has failed to provide average daily evapotranspiration data and that, without this, HC&S's actual usage rates are irrelevant because there is no breakdown between the amount of water needed and applied to the crop versus lost to seepage, evaporation and other system losses. Nā Moku also cites to a 2008 calculation of sugarcane water requirements performed by CWRM staff utilizing the Irrigation Water Requirement Estimation Decision Support System, which resulted in a requirement of from 1,400 to 6,000 gpad. *See* Rebuttal Declaration of Rick W. Volner, Jr. ("***Volner Rebuttal Decl.***") at ¶ 2.

HC&S has, however, previously supplied evapotranspiration data and such data is contained and reflected in Exhibits C-71, C-72, C-73 and C-74. HC&S has also previously explained its development and use of a modified Penman equation to calculate the water needs of its sugarcane, particularly in Exhibit C-73. HC&S' use of this method was recently validated in a study published online in the Journal of Water Resource and Protection in an article entitled, "Influence of Potential Evapotranspiration on the Water Balance of Sugarcane Fields in Maui, Hawaii." Exhibit C-136 is a copy of this article. As noted in the abstract on the first page, "The HC&S method was demonstrated to be the most accurate PET method compared to the other commonly used PET equations, with less than 10% error." *See* Ex. C-136 at 1; Volner Rebuttal Decl. at ¶ 3.

2. Updated Breakdown of HC&S Water Usage

Exhibit C-137 is a spreadsheet that was prepared to reflect in as much detail as possible an accounting of HC&S's water needs and usage for the six year period from 2008 through 2013.

Column J is the average irrigation requirement calculated by the HC&S water balance model utilizing the modified Penman equation that was validated in Exhibit C-136. Column K is the average usage per acre calculated by the HC&S water balance model utilizing run time and flow rates through the drip tubing used to irrigate the fields. *See* Volner Rebuttal Decl. at ¶ 4.

Column G represents the difference between the gross volume of water delivered by EMI and pumped by HC&S after accounting for all other uses. This reflects seepage, evaporation and miscellaneous other system losses that cannot be directly measured. For the six years in question, the annual average was 15,206 million gallons, which amounts to 41.66 mgd, or 22.7% of surface and well water combined. *See* Volner Rebuttal Decl. at ¶ 5.

The 22.7% rate of overall system losses reflected in Exhibit C-137 compares well with the expected range of seepage and evaporation losses estimated in Exhibit C-139, which is explained in the Rebuttal Declaration of Garret Hew (*see* Hew Rebuttal Decl. at ¶¶ 10-14). Most of this system loss consists of seepage from HC&S's reservoirs. But it must be remembered that this seepage is greatest during periods of high ditch flows. During low ditch flows, when streams are running near their base flows, the reservoirs are not being heavily utilized, if at all. Due to the timing of when this seepage occurs, it cannot reasonably be considered to be "available" for restoration of base flows in the streams. When stream flows are higher, the seepage is greater but is correspondingly less "needed" for stream restoration. At that point, it becomes an important source of recharge to the aquifers serving HC&S's brackish water wells, which is the only available alternative to water collected by EMI from the East Maui streams. *See* Volner Rebuttal Decl. at ¶ 6. This was recognized in the recently published USGS Scientific Investigations Report 2014-5168, entitled, "Spatially Distributed Groundwater Recharge

Estimated Using a Water-Budget Model for the Island of Maui, Hawai`i, 1978-2007," on page 34 as follows:

> About 20 percent of the recharge for the Central aquifer sector comes from direct recharge, most of which is from reservoir seepage. Irrigation in the Central aquifer sector is also substantial and is about 43 percent of the total.

Ex. C-140 at 34.

It would therefore be neither prudent nor economic for HC&S to expend the significant capital resources required to line all of these reservoirs. Apart from the obvious financial impact to HC&S, HC&S would be deprived of this valuable source of recharge of the underlying aquifers with no resulting benefit to the streams, since there is essentially no reservoir seepage to mitigate when stream and ditch flows are low and the reservoirs are mostly empty. *See* Volner Rebuttal Decl. at ¶ 6.

Column I of Exhibit C-137 shows average irrigated acres. HC&S does not engage in a regular practice of leaving fields "fallow." To the extent fields are temporarily removed from cultivation, this is reflected in the irrigated acres in this column. *See* Volner Rebuttal Decl. at ¶ 7.

Nā Moku asserts that HC&S should have provided detailed usage and other data on a per field basis going back to 1986. This would be a monumental and tedious undertaking that would not yield useful information because HC&S's agronomic water management practices have changed over time. Data from 1986 would not be representative of current practices, the efficiency of which has markedly improved, particularly in the last few years. *See* Volner Rebuttal Decl. at ¶ 8.

3. HC&S' usage of well water

Nā Moku contends that HC&S has not adequately explained why 12,000 acres are not capable of being irrigated with well water, since infrastructure was in place at one time that

could serve all but 5000 of these acres. The infrastructure to provide water to the additional 7,000 acres is a shared pipeline that serves as a penstock line for a hydroelectric unit for the majority of the year. When this pump system was installed, it was envisioned as an emergency source of water for high elevation fields in the event of extreme drought. It was never built or intended to be a primary source of water. The electrical requirements are extremely high and would displace pumping at lower elevations. The system is also just a booster pump system, meaning primary groundwater that is currently being used at the Lowrie Ditch level would be diverted to a higher elevation, reducing overall groundwater availability on a per acre basis for the plantation. *See* Volner Rebuttal Decl. at ¶ 9.

As to the 17,000 acres that HC&S does irrigate with well water, it would not be practicable to rely solely on well water to irrigate these fields because during periods of high evapotranspiration, the needs of all these fields could not be supplied with well water alone. Over the long term, moreover, there would be a persistent loss of recharge of the aquifers underlying these wells. *See* Volner Rebuttal Decl. at ¶ 10.

4. Water for hydropower generation and mill use

Surface water from EMI is not diverted or imported specifically for hydropower generation. Irrigation water from EMI is exploited for hydropower generation when it is dropped from a higher to a lower elevation before it is applied to the fields. *See* Volner Rebuttal Decl. at ¶ 11.

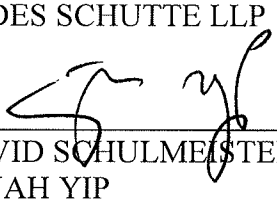
Plant operation uses include: cooling water for bearings and pumps, heat exchange for the turbines and generators, boiler makeup water, herbicide mixing, cane washing, sugar drying, sanitation, fire protection, seed tank dipping, fertilizer solutionizing, etc. Much of this water is sourced from wells located near the Puunene mill rather than water delivered by EMI. *See* Volner Rebuttal Decl. at ¶ 12.

III. CONCLUSION

HC&S reserves the right to make further comments and arguments in these contested case proceedings as to the appropriate IIFS for the 27 East Maui Streams.

DATED: Honolulu, Hawaii, February 10, 2015.

CADES SCHUTTE LLP



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COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

PETITION TO AMEND INTERIM INSTREAM FLOW STANDARDS FOR HONOPOU, HUELO (PUOLUA), HANEHOI, WAIKAMOI, ALO, WAHINEPEE, PUOHOKAMOA, HAIPUAENA, PUNALAU/KOLEA, HONOMANU, NUAAILUA, PIINAAU, PALAUHULU, OHIA (WAIANU), WAIOKAMILO, KUALANI, WAILUANUI, WEST WAILUAIKI, EAST WAILUAIKI, KOPILIULA, PUAKAA, WAIOHUE, PAAKEA, WAIAAKA, KAPAULA, HANAWI, AND MAKAPIPI STREAMS	Case No. CCH-MA13-01 **CERTIFICATE OF SERVICE**

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on this date, a true and correct copy of the foregoing document was duly served on the following parties as stated below:

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