

ATTACHMENT

Part A – GENERAL INFORMATION
(Required for all applications)

A-1 Applicant

Applicant: Hui O Nā Wai `Ehā
Contact: Duke Sevilla
Address: 702 Ka`ae Place
Wailuku, Hawai`i 96793
Phone: (808) 244-4790

Applicant: Maui Tomorrow Foundation, Inc.
Contact: Ron Sturtz
Address: P.O. Box 791180
Pā`ia, HI 96779
Phone: (808) 891-0425
(808) 891-0269

D. KAPUA`ALA SPROAT #7182
ISAAC H. MORIWAKE #7141
EARTHJUSTICE
223 South King Street, Suite 400
Honolulu, Hawai`i 96813-4501
Telephone No.: (808) 599-2436

Attorneys for Petitioners:
Hui o Nā Wai `Ehā and
Maui Tomorrow Foundation, Inc.

BEFORE THE COMMISSION ON WATER RESOURCE MANAGEMENT
OF THE STATE OF HAWAII

In the Matter of:)
)
PETITION TO AMEND INTERIM) HUI O NĀ WAI `EHĀ AND MAUI
INSTREAM FLOW STANDARDS) TOMORROW FOUNDATION, INC.'S
) PETITION TO AMEND THE INTERIM
) INSTREAM FLOW STANDARDS FOR
) WAIHE`E, NORTH AND SOUTH
) WAIEHU, `ĪAO AND WAIKAPŪ
) STREAMS AND THEIR TRIBUTARIES;
) DECLARATION OF D. KAPUA`ALA
) SPROAT; EXHIBITS 1-16; CERTIFICATE
) OF SERVICE
)
_____)

HUI O NĀ WAI `EHĀ AND MAUI TOMORROW FOUNDATION, INC.'S PETITION TO
AMEND THE INTERIM INSTREAM FLOW STANDARDS FOR WAIHE`E, NORTH &
SOUTH WAIEHU, `ĪAO, AND WAIKAPŪ STREAMS AND THEIR TRIBUTARIES

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. STATUTORY FRAMEWORK.....	2
III. PETITIONERS' INTERESTS IN THE NATURAL AND CULTURAL RESOURCES OF NĀ WAI `EHĀ'S STREAMS AND COASTAL WATERS	5
IV. FACTUAL BACKGROUND.....	7
A. Historical Background of Nā Wai `Ehā	7
B. Nā Wai `Ehā's Historical and Cultural Significance	9
C. Nā Wai `Ehā's Public Trust Uses and Values	10
D. Plantation Agriculture's Impact on Nā Wai `Ehā	12
V. STREAM FLOW DATA	15
VI. EXISTING INSTREAM AND OFFSTREAM WATER USES	19
A. Instream Uses of Water	19
1. Maintenance of Fish and Wildlife Habitats	20
2. Outdoor Recreational Activities	21
3. Maintenance of Ecosystems, such as Estuaries, Wetlands, & Stream Vegetation	22
4. Scenic Beauty and Water Quality	22
5. Conveyance of Irrigation Supplies to Downstream Points of Diversion	23
6. Protection of Traditional and Customary Native Hawaiian Rights	23
B. Offstream Uses of Water	24

	<u>Page</u>
VII. ANTICIPATED BENEFITS OF STREAM RESTORATION AND BASIS FOR SUCH IMPACTS	25
A. Benefits to Aquatic Life and Related Ecosystems	26
1. Migration	27
2. Reproduction	27
3. Food Chain and Overall Stream Ecology	28
B. Other Benefits	29
VIII. CONCLUSION	29

TABLE OF AUTHORITIES

Page

PUBLISHED CASES

Waiāhole Ditch Combined Contested Case Hearing,
94 Haw. 97, 9 P.3d 409 (2000) passim

UNPUBLISHED CASES

In re Waiāhole Ditch Combined Contested Case Hearing,
No. 24873 (Haw. June 21, 2004) 4

STATE STATUTES

Haw. Rev. Stat. § 174C-3 passim
Haw. Rev. Stat. § 174C-13 4, 14
Haw. Rev. Stat. § 174C-63 5
Haw. Rev. Stat. § 174C-71 1, 2
Haw. Rev. Stat. § 174C-71(2)..... 1, 2
Haw. Rev. Stat. § 174C-71(2)(A) 2
Haw. Rev. Stat. § 174C-71(4)..... 2
Haw. Rev. Stat. § 174C-101 5, 23
Haw. Rev. Stat. § 174C-101(c)-(d)..... 5

HAWAII CONSTITUTION

Haw. Const. Art. XII, § 7..... 23

HAWAII ADMINISTRATIVE RULES

Haw. Admin. R. § 13-168-7(b)..... 18
Haw. Admin. R. § 13-169-40..... 1

HAWAII ADMINISTRATIVE RULES (cont.)

Haw. Admin. R. § 13-169-48.....	1, 2
Haw. Admin. R. § 13-169-48(1).....	3

MISCELLANEOUS

Carol Wilcox, <u>Sugar Water</u> (University of Hawai'i Press 1996).....	12, 14
Department of Planning, Maui County Council, <u>Kihei-Makena Community Plan</u> (1988)	25
E.S. Craighill Handy & Elizabeth Green Handy, <u>Native Planters in Old Hawai'i Their Life, Lore and Environment</u> (Bishop Museum Press 1991)	9, 23
George Yamanaga & C.J. Huxel, Jr., USGS, <u>Preliminary Report on the Water Resources of the Wailuku Area, Maui</u> (Circular C61, 1970)	passim
Harold Steins & Gordon MacDonald, USGS & Territory of Hawai'i, <u>Geology and Ground-Water Resources of the Island of Maui, Hawai'i</u> (Bulletin 7, 1942).....	8, 9
Hawai'i Cooperative Park Service Unit, National Park Service, <u>Hawaii Stream Assessment</u> ("HSA") (1990)	passim
Mark Eric Benbow, Endemic Amphidromous Postlarval Recruitment and Migration Patterns in West Maui Streams (1999-2000) (unpublished preliminary report).....	26, 27
Mark Eric Benbow et al., <u>A Note on Cascade Climbing of Migrating Goby and Shrimp PostLarvae in two Maui Streams</u> , 34(2) <i>Micronesica</i> 243 (2002)	27
McIntosh et al., <u>Effect of Water Removal on Introduced Caddisflies from a Tropical Mountain Stream</u> , 39(4) <i>International Journal of Limnology</i> 297 (2003).....	28
Mcintosh et al., <u>Effects of Stream Diversion on Riffle Macroinvertebrate Communities in a Maui, Hawai'i, Stream</u> , 18 <i>River Research and Applications</i> 569 (2002).....	26, 27, 28
Patricia Shade, USGS, <u>Water Budget for the `ao Area, Island of Maui, Hawai'i</u> (WRI 97-4244, 1997).....	12, 14, 15
Richard A. Fontaine, USGS, <u>Availability and Distribution of Base Flow in Lower Honokohau Stream, Island of Maui, Hawai'i</u> (WRI 03-4060, 2003)	16

MISCELLANEOUS (cont.)

Robert Nishimoto, DAR, <u>Hawaiian Streams: The Mauka to Makai Connection</u> http://www.hawaii.gov/dlnr/dar/hawn_streams.htm	21
Ross Cordy, Clayton Hee, & Marion Kelly, <u>Cultural Reconnaissance of Hydroelectric Power Plant Sites: Waihe`e Valley, Maui: Lumahai Valley, Kaua`i</u> (Bishop Museum 1978).....	9, 12
<u>Sites of Maui</u> (Elspeth Sterling ed., Bishop Museum Press 1998)	23, 24
William Meyer & Todd K. Presley, USGS, <u>The Response of the `Iao Aquifer to Ground- Water Development, Rainfall, and Land-Use Practices Between 1940 and 1998,</u> Island of Maui, Hawai`i	7, 13
W.F. Martin & C.H. Pierce, USGS, <u>Water Resources of Hawai`i 1909-1911</u> (Water Supply Paper 318, 1913)	16, 17, 18

I. INTRODUCTION

Pursuant to Hawai`i Revised Statutes § 174C-71(2) and Hawai`i Administrative Rules § 13-169-40, Hui o Nā Wai `Ehā (“Hui”) and Maui Tomorrow Foundation, Inc. (“Maui Tomorrow”), through their counsel Earthjustice, petition the Commission on Water Resource Management to amend upward the interim instream flow standards for Waihe`e, North and South Waiehu, `Īao, and Waikapū streams and their tributaries (collectively, “Nā Wai `Ehā”). Haw. Rev. Stat. § 174C-71(2) (1993); Haw. Admin. R. § 13-169-40 (effective May 27, 1988). Although this Commission adopted an interim instream flow standard (“IIFS”) for each of these streams via Hawai`i Administrative Rules § 13-169-48 (effective December 10, 1988), those standards lack any scientific basis. The current IIFSs governing these streams, therefore, do little more than maintain the status quo and wholly fail to protect native stream life, fish and wildlife habitats, traditional and customary Native Hawaiian practices, outdoor recreational activities, aesthetic and scenic values, and other beneficial instream uses, in complete disregard of the mandates of our State Water Code. Haw. Rev. Stat. §§ 174C-3, 71 (1993). Restoring flow to Nā Wai `Ehā, the four great waters of West Maui, is necessary for these streams to live again and to support the myriad public trust uses that the streams once sustained.

After briefly describing the statutory framework of the State Water Code (Part II, infra), petitioners will demonstrate that both the Hui and Maui Tomorrow have standing to petition this Commission for restored stream flows. See Part III, infra. Petitioners will also provide relevant factual background regarding the streams of Nā Wai `Ehā, the invaluable instream uses that they have the potential to support, and the impacts of plantation agriculture’s offshore diversions. See Part IV, infra. Petitioners will summarize available United States Geological Survey (“USGS”) and other streamflow data, further detail existing

instream and offstream water uses, and describe the benefits of stream restoration. See Parts V-VII, infra. Based on this information and the Commission’s own affirmative public trust duty to protect and promote the public interest in instream flows, this petition establishes that the only appropriate action for this Commission is to begin promptly the process of amending upward the IIFSs for the streams of Nā Wai `Ehā and to order the immediate restoration of all stream flows not currently put to beneficial use, pending the outcome of this process.

II. STATUTORY FRAMEWORK

The State Water Code (“Code”) requires this Commission to “establish and administer a statewide instream use protection program.” Haw. Rev. Stat. § 174C-71; see also id. § 174C-71(4) (requiring the Commission to “[e]stablish an instream flow program to protect, enhance, and reestablish, where practicable, beneficial instream uses of water”). As an “integral part” of this program, the Code requires the Commission to establish an IIFS for all streams. Id.; § 174C-71(2) (1993), construed in In re Waiāhole Ditch Combined Contested Case Hearing, 94 Haw. 97, 147, 9 P.3d 409, 459 (2000) (“Waiāhole”). The Code also provides that “[a]ny person with the proper standing may petition the Commission to adopt an IIFS for streams in order to protect the public interest pending the establishment of a permanent [IFS]” Haw. Rev. Stat. § 174C-71(2)(A).

Effective December 10, 1988, the Commission adopted as the IIFS for West Maui streams “that amount of water flowing in each stream on the effective date of this standard, and as that flow may naturally vary throughout the year and from year to year without further amounts of water being diverted offstream through new or expanded diversions, and under the stream conditions existing on the effective date of the standard” Haw. Admin. R. § 13-169-48. As the Commission has recognized elsewhere, these standards do “nothing more than ratify the major diversions already existing.” Waiāhole, 94 Haw. at 150, 9 P.3d at 462.

The rule, by its terms, provides that “[b]ased upon additional information or a compelling public need, a person may petition the [Commission] to amend the [IIFS] to allow future diversion, restoration, or other utilization of any streamflow.” Haw. Admin. R. § 13-169-48(1). The Hawai`i Supreme Court has recognized the validity of this provision for amending an IIFS, maintaining that “[i]nterim standards must respond to interim circumstances.” Waiāhole, 94 Haw. at 151, 9 P.3d at 463.

Although the Code empowers members of the public to petition for instream flows, the Hawai`i Supreme Court has made clear that it “do[es] not believe that the ultimate burden of justifying interim standards falls on the petitioner.” Id. at 153, 9 P.3d at 465 (emphasis added); see also id. (cataloguing the Commission’s statutory duties regarding instream use protection). Rather, the constitution and Code place that burden squarely on this Commission. As the Court has extensively explained:

- The Commission has an affirmative public trust duty under both the Hawai`i Constitution and the Code to protect and promote instream public trust uses. Id. at 141-43, 146, 153, 9 P.3d at 453-55, 458, 465. The instream uses protected by the public trust include “resource protection, with its numerous derivative public uses, benefits, and values,” as well as the “exercise of Native Hawaiian and traditional and customary rights.” Id. at 136-37 & n.34, 9 P.3d at 448-49.
- The public trust dictates that “any balancing between public and private purposes must begin with a presumption in favor of public use, access, and enjoyment” and “establishes use consistent with trust purposes as the norm or ‘default’ condition.” Id. at 142, 9 P.3d at 454 (emphasis added). “In practical terms, this means that the burden ultimately lies with those seeking or approving [private diversions] to justify them in light of the purposes protected by the trust.” Id.
- Under the public trust, the Commission “must not relegate itself to the role of mere umpire passively calling balls and strikes for adversaries appearing before it, but instead must take the initiative in considering, protecting, and advancing public rights in the resource at every stage of the planning and decisionmaking process.” Id. at 143, 9 P.3d at 455 (emphasis added).
- The IFS is the Commission’s “primary mechanism” to fulfill its public trust “duty to protect and promote the entire range of public trust purposes dependent upon instream flows.” Id. at 148, 9 P.3d at 460 (emphasis added). “[T]he

Commission must designate instream flow standards as early as possible, during the process of comprehensive planning, and particularly before it authorizes offstream diversions potentially detrimental to public instream uses and values.” Id. at 148, 9 P.3d at 460. The statutory directive to establish “proper,” meaningful IFSs “continues notwithstanding existing diversions.” Id. at 150, 9 P.3d at 462.

- “[T]he Code envisions the establishment of bona fide ‘permanent’ [IFSs] as an ultimate objective in its mandated ‘instream use protection program.’” Id. at 150, 9 P.3d at 462. Nonetheless, interim standards “must still provide meaningful protection of instream uses,” or in the Commission’s words, “[t]he fact that the interim standard is adopted more quickly does not alter the Commission’s duty to protect instream uses.” Id. at 151 & n.55, 9 P.3d at 463 (emphasis added). In sum, under the constitution and Code, petitioners for IIFS amendments do not bear

the ultimate burden of justifying stream restoration. Instead, the presumption or default favors the petitioners, and the Commission and/or the private parties diverting stream flows for commercial gain bear the burden of justifying any ongoing diversions blocking stream restoration. “The Water Commission is . . . duty-bound to place the burden on the applicant to justify the proposed water use in light of the trust purposes and ‘weigh competing public and private water uses on a case by case basis,’ requiring a higher level of scrutiny for private commercial water usage.” In re Waiāhole Ditch Combined Contested Case Hearing, No. 24873, slip. op. at 26 (Haw. June 21, 2004). The Commission bears the ultimate responsibility of establishing “meaningful,” “proper,” and “bona fide” instream flow standards, as early as possible, whether such standards are “interim” or “permanent” in nature.

The Code contains a specific provision against waste, requiring the Commission to investigate and “take appropriate action” against allegations of waste. Haw. Rev. Stat. § 174C-13 (1993); Waiāhole, 94 Haw. at 172, 9 P.3d at 484. The Commission has recognized, and the Hawai`i Supreme Court has agreed, that water not actually used for permitted, reasonable-beneficial use should be kept in streams to avoid unlawful waste. See Waiāhole, 94 Haw. at 118, 156, 9 P.3d at 430, 468.

In addition to the constitutional and statutory duties to restore streams and uphold instream public trust uses, the Code provides specific protections for Native Hawaiian and appurtenant rights. Section 174C-101 of the Code provides in relevant part:

(c) Traditional and customary rights of ahupua`a tenants who are [Native Hawaiian] shall not be abridged or denied by this chapter. Such traditional and customary rights shall include, but not be limited to, the cultivation or propagation of [kalo] on one's own kuleana and the gathering of hihiwai, opae, o`opu, limu, thatch, ti leaf, aho cord, and medicinal plants for subsistence, cultural, and religious purposes.

(d) The appurtenant water rights of kuleana and [kalo] lands, along with those traditional and customary rights assured in this section, shall not be diminished or extinguished by a failure to apply for or to receive a permit under this chapter.

Haw. Rev. Stat. § 174C-101(c)-(d) (1993). Section 174C-63 of the Code likewise declares that “[a]ppurtenant rights are preserved. Nothing in this part shall be construed to deny the exercise of an appurtenant right by the holder at any time. A permit for water use based on an existing appurtenant right shall be issued upon application.”

III. PETITIONERS' INTERESTS IN THE NATURAL AND CULTURAL RESOURCES OF NĀ WAI `EHĀ'S STREAMS AND COASTAL WATERS

Petitioners have substantial interests in the natural and cultural resources of Nā Wai `Ehā exceeding that of the general public. Hui o Nā Wai `Ehā is a community-based organization established to promote the conservation and appropriate management of Hawai`i's natural and cultural resources, including streams, oceans, estuaries, native flora and fauna, and related traditional and customary Native Hawaiian practices, educational opportunities, and scientific activities. Hui supporters live, work, and play in the areas surrounding Nā Wai `Ehā and rely on, routinely use, or hope to use Nā Wai `Ehā and their nearshore marine waters for fishing, swimming, agriculture, aquaculture, research, photography, educational programs, aesthetic

enjoyment, traditional and customary Native Hawaiian practices, and other recreational, scientific, cultural, educational, and religious activities.

Maui Tomorrow, a community based-organization with over 1000 supporters, is dedicated to protecting Maui's precious natural areas and prime open space for recreational use and aesthetic value, promoting the concept of ecologically sound development, and preserving the opportunity for rural lifestyles on Maui. In pursuit of this purpose, Maui Tomorrow works with government decisionmakers and citizens to teach and promote growth management strategies, implement sustainable development policies for Maui, and to preserve irreplaceable open space and natural areas. Maui Tomorrow and its supporters conduct community forums and workshops, provide input and testimony regarding various county planning and decisionmaking processes, make educational materials available, and carry out litigation as necessary to advance Maui Tomorrow's goals and purposes. Maui Tomorrow's supporters rely on, routinely use, or hope to use Nā Wai `Ehā and their nearshore marine waters for fishing, swimming, agriculture, aquaculture, research, photography, educational programs, aesthetic enjoyment, traditional and customary Native Hawaiian practices, and other recreational, scientific, cultural, educational and religious activities.

Hui o Nā Wai `Ehā, Maui Tomorrow, and their respective supporters' above-described scientific, educational, economic, recreational, conservation, aesthetic, appurtenant, riparian, cultural and religious rights and interests have been, are being, and, unless the relief prayed herein is granted, will continue to be adversely affected and irreparably injured by insufficient IIFSs, as is more fully set forth below. The individual interests of petitioners' supporters, as well as both groups' organizational interests, are thus directly and adversely affected by the Commission's failure to establish scientifically based IIFSs that protect, enhance, and restore beneficial instream uses of water.

Many of petitioners' supporters have legal interests in land in the area, including:

Burt Sakata	TMK #3-2-05-(011), (013), (015), (017), (019), (039)
Gordon Schwartz	TMK #3-2-02-(002), (007), (011)
John Varel	TMK #3-2-01-005
Patricia Bragg	TMK #3-2-02-(003), (004), (005), (007), (008), (009), (010)
Duke Sevilla	TMK #3-3-01-(054), (041)
Giovanni Rosati	TMK #3-3-01-007
John V. & Rose Marie H. Duey	TMK # 3-5-03-(011), (018)
Colin Kailiponi	TMK #3-6-05-019, 3-6-06-024
Jinsei Miyashiro	TMK #3-6-06-027

The following supporters have declared their water uses pursuant to Section 174C-26(a) of the State Water Code:

Duke Sevilla	TMK #3-3-01-(054), (041)
Burt Sakata	TMK #3-2-05-(011), (013), (015), (017), (019), (039)
Gordon Schwartz	TMK #3-2-02-(002), (007), (011)

IV. FACTUAL BACKGROUND

A. Historical Background of Nā Wai `Ehā

Nā Wai `Ehā, or “the four great waters of Maui,” refers to Waihe`e, Waiehu, `Īao, and Waikapū streams, all of which are located in the Wailuku District of West Maui.¹ Ancient Hawaiians gave the streams and the area surrounding them this name to honor the streams' life giving waters.

Waihe`e Stream flows in a long, deep, and narrow valley, and drains the wet Northeast slopes of Pu`u Kukui, the summit of West Maui mountain. George Yamanaga & C.J. Huxel, Jr., USGS, Preliminary Report on the Water Resources of the Wailuku Area, Maui 22 (USGS Circular C61, 1970); William Meyer & Todd K. Presley, USGS, The Response of the `Īao

¹ The names `Īao and Wailuku have been used interchangeably over time to refer to the same stream and valley. Petitioners will use `Īao in this petition to refer to the stream and valley, and Wailuku to refer to the larger land and political district that encompasses all of Nā Wai `Ehā.

Aquifer to Ground-Water Development, Rainfall, and Land-Use Practices Between 1940 and 1998, Island of Maui, Hawai`i 8 (Water Resources Investigations Report (“WRI”) 00-4223, 2001). Waihe`e is the Northernmost of Nā Wai `Ehā’s four waters and the largest stream in the Wailuku area, with an average discharge of about 50 million gallons per day (“mgd”). Yamanaga & Huxel, supra, at 22. Early records indicate that only 25 mgd was available in Waihe`e Stream 95 percent of the time. Harold Sterns & Gordon MacDonald, USGS & Territory of Hawai`i, Geology and Ground-Water Resources of the Island of Maui, Hawai`i 45-6 (Bulletin 7, 1942).

Waiehu Stream, which lies South of Waihe`e, is formed by the confluence of North and South Waiehu streams. The perennial flow of North and South Waiehu is fed by dike-impounded ground water. Yamanaga & Huxel, supra, at 21. These streams are comparatively smaller than other Nā Wai `Ehā streams and do not extend to the summit of Pu`u Kukui, as they are cut off by the more extensive and rapidly developed valleys of Waihe`e to the North and `Īao to the South. Id. North and South Waiehu are significantly smaller than Waihe`e. USGS records from 1910 to 1917 indicate average flows of about 5.5 mgd for North Waiehu Stream (6080) and about 7 mgd for South Waiehu (6100). Id. Early records indicate that only 3 mgd and 2 mgd, respectively, were available in North and South Waiehu Streams approximately 95 percent of the time. Sterns & MacDonald, supra, at 45-6.

To the South of Waiehu, `Īao Stream “drains a large amphitheater-headed valley and is one of the principal sources of water” in the Wailuku district. Yamanaga & Huxel, supra, at 20. The head of `Īao Valley has shifted over time and increased in width; therefore, “some water that flowed toward the ocean on the Lahaina side now flows into Iao Stream.” Id. The valley also captures some water that would otherwise drain into Waikapū and South Waiehu streams. Id. at 21. `Īao is the second largest of Nā Wai `Ehā’s streams and USGS records from 1910-15

indicate an average discharge of about 50 mgd over that period. Id. Early records also indicate that only 11 mgd of the flow of `Īao Stream was available 95 percent of the time. Sterns & MacDonald, supra, at 45-6.

Waikapū Stream derives its base flow from breached high-level, dike-impounded ground water near the head of Waikapū Valley, and is the Southernmost of the four large, deep valleys of the Nā Wai `Ehā area. Yamanaga & Huxel, supra, at 20. USGS records from 1911-17 indicate an average discharge of 10 mgd. Id. Early records for Waikapū Stream indicate, however, that only 3 mgd was available 95 percent of the time. Sterns & MacDonald, supra, at 45-6. Early records indicate that the four great waters of Nā Wai `Ehā had an average combined flow of approximately 122.5 mgd.

B. Nā Wai `Ehā's Historical and Cultural Significance

Ola i ka wai: in water there is life. In pre-European contact times, Nā Wai `Ehā were “famed in song and story” and sustained one of five centers of population on Maui, which was abundant in lo`i kalo or wetland kalo cultivation. E.S. Craighill Handy & Elizabeth Green Handy, Native Planters in Old Hawai`i Their Life, Lore and Environment 272 (Bishop Museum Press 1991). Traditional songs about the area, such as “Nā Wai Kaulana” by Alice Namakelua, encourage listeners to “e `ike i nā wai `ehā . . . `o nā wai kaulana ia a o ku`u `āina,” “behold the four great streams . . . which are the famous waters of my home.”

In ancient times, the area from Waihe`e to `Īao Valley “was the largest continuous area of wet-[kalo] cultivation in the islands” and likely resembled the vast lo`i of Hanalei Valley on the island of Kaua`i. Handy & Handy, supra, at 496. This considerable expanse of lo`i supported a substantial population of Native Hawaiians. Missionary census data from 1831-32 indicate that 827 people resided in Waihe`e, 355 in Waiehu, 2,256 in `Īao, and 733 in Waikapū, very substantial populations for this time period. Ross Cordy, Clayton Hee, & Marion Kelly, Cultural

Reconnaissance of Hydroelectric Power Plant Sites: Waihe`e Valley, Maui: Lumahai Valley, Kaua`i 59 (Bishop Museum 1978).

Waihe`e valley provides an example of the host of natural and cultural resources that once flourished in the greater Nā Wai `Ehā area:

All indications are that Waihe`e Valley was traditionally, a rich, fertile valley supporting a substantial population. Hawaiians constructed extensive lo`i (irrigated [kalo] terraces) and elaborate `auwai systems to provide water for the lo`i. In addition to [kalo], they probably grew sweet potatoes, bananas, wauke, `ie`ie, and other life-sustaining crops. Across the lower portion of the stream, they built at least one dam, which no longer functions today because of the lack of water in the river. Many lo`i can be seen today, although most are not in use.

According to informants, Waihe`e Stream once had a rich biota. Residents of the valley used to catch the `o`opu nakea and the `o`opu nopili for food. There are apparently no `o`opu in the stream today, apparently because Waihe`e Stream is almost dry below the [ditch] intakes, and the `o`opu must be able to return to the sea to spawn. There are some `opae in the stream mauka of the intakes. The stream was once rich in hihiwai, a freshwater limpet.

Id. at 21, 24 (italics omitted). “[T]he bulk of Maui’s communities had only one heiau. Waihe`e had ten. Clearly, the number of heiau at Waihe`e indicate the valley was politically important.”

Id. at 62. Only two communities on Maui – Keanae and `Īao – had more heiau than Waihe`e. Id. at 63.

C. Nā Wai `Ehā’s Public Trust Uses and Values

In 1990, this Commission, in cooperation with the National Park Service and experts from various state, federal, and private entities, completed a preliminary appraisal of Hawai`i’s stream resources. See Hawai`i Cooperative Park Service Unit, National Park Service, Hawaii Stream Assessment (“HSA”) (1990). This Hawai`i Stream Assessment (“HSA”) was the first step in identifying “streams and rivers with significant natural and cultural qualities that may be appropriate for protection[.]” Id. at ii(a). The HSA is an invaluable resource for this Commission because it summarizes data available at the time of its publication and documents

historic and potential instream uses and values. Id. at xix. The HSA study team determined that “existing information, while limited, was sufficient to conclude that the state’s surface water resources are limited, fragile, and in need of protective management now.” Id. at iii (emphasis added). Fifteen years later, Nā Wai `Ehā’s streams and the animal and human communities that depend on them have yet to receive the protection guaranteed by the law in the form of scientifically based IIFSs or an instream use protection program.

Out of the 376 perennial streams sprinkled throughout our island chain, the HSA identified only 44 candidate streams for protection. HSA, supra, at 272. Importantly, each of the four great waters of Nā Wai `Ehā earned the distinction of being a candidate stream for protection, even though only nine streams were selected from the entire island of Maui. Id. All four streams of Nā Wai `Ehā were also designated as “blue ribbon resources,” meaning that they stood out as the very best in their respective resource areas. Id.

Waihe`e was selected due to its outstanding aquatic, cultural, and recreational resources.² Id. Waihe`e also boasts blue ribbon cultural and recreational resources, including important archeological remains, historical significance as one of the important centers for Hawaiian royalty, hiking, swimming, fishing, hunting, and scenic views. Id. at 212, 272; see also Part VI(B), infra.

Waiehu Stream features blue ribbon cultural resources, due to its historical significance and extensive wetland kalo cultivation. Id. at 221, 272. Like Waihe`e, Waiehu was one of only six streams from the entire island chain known to have more than 50 acres in wetland kalo cultivation. Id. at 214.

The HSA recognized vast `Īao Stream for its blue ribbon recreational resources, meaning that it has some of Hawai`i’s very best hiking, fishing, swimming, parks, nature study, and scenic

² Nā Wai `Ehā’s aquatic resources are further detailed in Part VI(A), infra.

views. Id. at 252. `Īao was one of only 18 streams from throughout Hawai`i, and one of only three streams on Maui to be designated as outstanding for recreation. Id. at 243. `Īao was also the only valley on Maui to earn the distinction of a National Natural Landmark (due to the `Īao Needle), which was established to protect the best examples of physical and natural landmarks. Id. at 109. The native people of `Īao cultivated between 10-50 acres of kalo in pre-contact European times. Id. at 214.

The HSA identified Waikapū Stream as a blue ribbon riparian resource. Id. at 272. Waikapū, a haven for rare native plants and threatened and endangered birds, is the only stream on Maui that the HSA identified as having waterbird recovery habitat. Id. at 175, 186.³ In pre-contact European times, Waikapū had between 10-50 acres of kalo in cultivation. Id. at 214.

D. Plantation Agriculture's Impact on Nā Wai `Ehā

Irrigated plantation agriculture has been the dominant land use in the Wailuku district since Wailuku Sugar was formed in 1875. Patricia Shade, USGS, Water Budget for the `Īao Area, Island of Maui, Hawai`i 1 (WRI 97-4244, 1997). For more than a century, much to all of the flow from each of Nā Wai `Ehā streams has been diverted to support offstream uses, principally sugar cane, pineapple, and macadamia nuts. Id.; see also Carol Wilcox, Sugar Water 124-25 (University of Hawaii Press 1996). These diversions have continued even as plantation agriculture and its water uses come to a decline on Maui.

Two major and nine smaller ditches were built in the early 1900s in the Iao aquifer area; however, only six of the ditches are still in use. The ditches divert springs, tunnel water, and streams. The Spreckels Ditch and the Waihe`e Ditch,

³ Since the HSA was completed, more land has come into private ownership and will be managed as habitat for native waterbirds. As just one example, Maui Coastal Land Trust recently purchased the former Waihe`e Dairy site, which currently hosts Hawaiian Gallinules (*Fallinula chloropus sandvicensis*). See Maui Coastal Land Trust, The Future of the Waihe`e Preserve: Preparing the Next Generation at <http://www.mauicoastallandtrust.org/>.

the two major ditches in the area, divert and capture an average of about 40 Mgal/d from Waihee River and from tunnels driven into the valley walls above the stream, and about 6 Mgal/d from diversions on the two forks of Waiehu Stream. Two smaller ditches, the Maniania Ditch and the Iao-Waikapu Ditch, carry about 18 Mgal/d from diversions in the Iao Stream and from tunnels driven in the Iao Stream valley. A third small ditch, the Kama Ditch, diverts water from Iao Stream at a lower elevation than the shared diversion of the Maniania and Iao-Waikapu Ditches. In Waikapu Stream valley, the South Side Waikapu Ditch carries about 3 Mgal/d from a diversion in the Waikapu Stream and from tunnels. A second ditch in Waikapu Valley, the Everett Ditch, is no longer in use because of blockage from rock slides.

Meyer & Presley, supra, at 8 (citations omitted). Together, “the ditches usually take all available streamflow during low-flow periods.” Yamanaga & Huxel, supra, at 20.⁴

Waihe`e is the “principal source of water” in the Wailuku district. Id. at 22. “Wailuku Sugar Co. derives about 22 mgd of irrigation water and Hawaiian Commercial and Sugar Co. [“HC&S”] about 18 mgd from the stream by diversion through the Waihee and Spreckels ditches, which the companies operate on a cooperative basis.” Id. at 22. Even during their heyday, plantation interests acknowledged and returned small amounts of water for “the prior rights for irrigation of [kalo] lands downstream.” Id.

Both HC&S and Wailuku Sugar also divert water from Waiehu, with HC&S taking about 3 mgd from South Waiehu and Wailuku Sugar taking another 3 mgd from North Waiehu. Id. at 21. Despite these diversions, kalo cultivation persisted below the sugar companies’ diversions. Id.

On `Iao Stream, Wailuku Sugar historically diverted “an average of about 18 mgd (the entire flow during dry weather) through the Maniania and Iao-Waikapu ditches. During high-water periods, water, in excess of the capacity of the ditches, flows downstream where some of it is diverted by Hawaiian Commercial and Sugar Co.” Id. at 21. HC&S has an intake, which is

⁴ More recently, the use of the Kama Ditch has been discontinued. The kuleana lands formerly supported by Kama Ditch now receive water through a pipeline from the Waihe`e Ditch.

fed by a spring mauka of the dam on the Waihe`e side of `Īao stream. During dry weather, this diversion does not even allow water from the spring to flow into `Īao Stream.

About 3 mgd was usually taken from Waikapū Stream on a regular basis for sugarcane irrigation. Id. at 20. “The 3 mgd figure represents all dry-weather flow of the stream and, consequently, the stream is usually dry at the highway crossing downstream of the diversion point. Partly as a result of this condition, the channel is not well developed in the lower reaches of the stream – below the highway crossing – and floodwaters have, at times, caused significant damage to bordering canefields in this area.” Id.

Although Wailuku Agribusiness (formerly Wailuku Sugar Company) irrigated roughly 2,445 acres of sugar from the 1920s through the 1970s using approximately 25 mgd, it closed the doors on its sugar production in 1988. Shade, supra, at 4; Wilcox, supra, at 125. Despite stopping all sugar cultivation (which used the bulk of the diverted water), the ditches continue to take water from Na Wai `Ehā.

Figures from the late 1980s and early 1990s demonstrate that, at that time, Wailuku Agribusiness cultivated roughly 1,320 acres of macadamia nuts acres and about 380 acres of pineapple. Shade, supra, at 10. Macadamia nuts were irrigated by micro-sprinklers for a total use over all acreage of less than 1 mgd, and total pineapple acreage was irrigated at about .7 mgd for that time period. Id. It is petitioners’ understanding that only a portion of the water that continues to be taken from the streams of Nā Wai `Ehā each day is actually used for irrigation or other purposes, and the vast majority of that water is simply wasted. See Haw. Rev. Stat. § 174C-13; Waiāhole, 94 Haw. at 172, 9 P.3d at 484.

In 2003, Wailuku Agribusiness provided estimates of its water use to this Commission. See Exh. 14. For 2001, Wailuku Agribusiness reported taking a monthly average of 24.97 mgd via the Waihe`e Ditch, 10.45 mgd via the Spreckles Ditch, 2.19 mgd via the Maniania Ditch, and

14.39 mgd via the `Īao-Waikapū Ditch. Id. at 256B. For 2002, Wailuku Agribusiness reported taking a monthly average of 37.15 mgd via the Waihe`e Ditch, 9.58 mgd via the Spreckles Ditch, 3.08 mgd via the Maniania Ditch, and 16.13 mgd via the `Īao-Waikapū Ditch. Id. Wailuku Agribusiness also estimated diversions from its two smallest ditches (South Waikapū and North Waiehu) to be five mgd. Letter from Avery Chumbley to Ernest Lau (Oct. 20, 2003), attached as Exh. 14 at 254.

In February 2004, Wailuku Agribusiness reported that it “collects water from five sources, Waihee, Spreckles, North Waiehu, Iao and South Waikapu intakes.” Letter from Avery Chumbley to Peter Young (Feb. 6, 2004), attached as Exh. 14 at 250. That water served both Wailuku Agribusiness and other users, for a total of 382.1 acres of macadamia nuts, 106.4 acres of pineapple, 59 acres at Maui Tropical Plantation, 315 acres at Waikapu Mauka Golf Course, 260.3 acres of diversified farming and 1,080.9 acres of sugar. Id.

The amounts of water diverted from the streams of Nā Wai `Ehā reflect significantly more water than Wailuku Agribusiness is using or delivering to other users. Petitioners urge this Commission to order the immediate return of all water that is not in actual and reasonable-beneficial use by Wailuku Agribusiness or other users pending determination of proper IIFSs for these precious streams. See Waiāhole, 94 Haw. at 118, 156, 9 P.3d at 430, 468. See also Shade, supra, at 4-10.

V. STREAM FLOW DATA

Petitioners have attached for this Commission’s review all historical stream flow records available from USGS. Exh. 9-13. These records indicate that all of the streams of Nā Wai `Ehā previously enjoyed significant and healthy flows. Id. The flow data provided demonstrates that the majority to all of the flow of each of Nā Wai `Ehā’s streams has been and continues to be

diverted for offstream use, leaving the streams totally dry below the diversions. Id.; see also Parts IV(A, D), supra.

USGS gaged Waihe`e Stream from approximately November 1910 to June 1917. See Exh. 1, 7-8. Although pre-diversion data has not been located, USGS records reveal that “[t]he discharge at [the canal] station [USGS station no. 6130] added to that of the station on Waihee Stream at the dam [USGS station no. 6120] gives the total discharge of Waihee Stream.” W.F. Martin & C.H. Pierce, USGS, Water Resources of Hawai`i 1909-1911 202 (Water Supply Paper 318, 1913). This data shows that for this period, Waihe`e stream flow ranged from a minimum of 21 mgd in April 1913 to a maximum of 553 mgd during January 1916. Exh. 1 at 3-4. During the same period, mean flow figures ranged from 26.9 mgd in October 1913 to 118 mgd in June 1914. Id.

In 1983, USGS installed a gage at Waihe`e Stream at the dam (station no. 6140). See Exh. 1, 7-8. This gage has been operated continuously since its installation and has recorded median daily stream flows ranging from 27.13 (in both 1984 and 1996) to 45.87 mgd (in both 1986 and 1987). Exh. 1 at 7. Recent studies have demonstrated that base flow for streams in West Maui approximate the Q70, or the flow in the stream that is equaled or exceeded 70 percent of the time. See Richard A. Fontaine, USGS, Availability and Distribution of Base Flow in Lower Honokohau Stream, Island of Maui, Hawai`i 13 (WRI 03-4060, 2003). Over this period of record, the Q70 for Waihe`e ranged from 21.96 mgd in 1984 to 40.05 mgd in 1994. Exh. 1 at 7. Over the same period, the Q75 or the flow that is equaled or exceeded 75 percent of the time ranged from 20.03 mgd in 1984 to 38.76 mgd in 1994. Id. The Q90, or flow that is equaled or exceeded 90 percent of the time, was 24.55 mgd.⁵ Id.

⁵ This Commission’s Water Resources Protection Plan (“WRPP”) has recognized that in order to “preserve a stream environment in a perennial stream, some level of minimum flow is necessary.” WRPP at V-37. In attempting to calculate that minimum level of flow, the WRPP

USGS also gaged North Waiehu Stream from roughly December 1910 to December 1915. See Exh. 3, 10. These records specify that the total flow of North Waiehu Stream can be obtained by adding the discharge at station no. 6095 on the stream to the discharge at station no. 6090 on the North Wai`ehu Ditch. Martin & Pierce, supra, at 213. This data establishes that over this period, North Waiehu stream flow ranged from a minimum of 1.6 mgd in March 1915 to a maximum of 245 mgd in September 1914. Exh. 3 at 14-15. Mean flows for the same period ranged from 2.75 mgd in January 1913 to 18.2 mgd in September 1914. Id. Over this period of record, the Q75 ranged from 2.5 to 5 mgd, and the Q90 ranged from 2.5 to 4 mgd. Id. at 16.

USGS maintained station no. 6100 on South Waiehu Stream from November 1910 until March 1917. See Exh. 4, 7, 11. “The discharge at this station gives the total flow of the stream.” Martin & Pierce, supra, at 215. These records establish that for this period South Waiehu Stream flows ranged from a minimum of 1.5 mgd in July 1913 to a maximum of 100 mgd in January 1916. Exh. 4 at 17-18. Mean flows for this period ranged from 1.91 mgd in July 1913 to 28.4 mgd in May 1914. Id. Over this period of record, the Q75 ranged from 2 to 6 mgd, and the Q90 ranged from 2 to 5 mgd. Id. at 19.

USGS operated station no. 6040 on `Īao Stream from May 1910 to June 1915 and station no. 6045 from 1983 to the present. See Exh. 2, 7, 9. Both stations were/are located above all diversions and thus reflect the total flow of the stream. Martin & Pierce, supra, at 218. Data from 1910-1913 shows a range in flows from a minimum of 5 mgd in October 1913 to a maximum of 499 mgd in December 1910. Exh. 2 at 8-9. Mean flow from 1910-1915 ranged from 12.1 mgd in February 1914 to 426 mgd in September 1914. Id. Since gage 6045 was installed at Kepaniwai Park in 1983, it has recorded median daily streamflow ranging from 14.86

has stated that a value or range between the 14 day low and the Q90 or Q75 “would be a reasonable compromise.” Id. at V-38. Again, more recent studies have demonstrated that in West Maui, base flow approximates the Q70 of a stream. See Fontaine, supra, at 13.

in 1984 to 37.47 in 1994. Exh. 2 at 12. Over that period of record, the gage recorded a range in Q70 of 11.63 in 1984 to 24.55 in 1994; a range in Q75 of 10.34 in 1984 to 22.61 in 1994; and a range in Q90 of 8.40 in 1984 to 24.55 in 1994. Exh. 2 at 12.

USGS gaged Waikapū Stream and the ditches that divert it from November 1910 until June 1917. See Exh. 5, 12. These records indicate that the discharge at station no. 6500 on Waikapū Stream “gives the flow of the stream below the South Side and Palolo ditches.” Martin & Pierce, supra, at 225. The total flow of the stream can therefore be obtained by adding the discharge at station no. 6500 to the discharge at the South Side Waikapū Ditch station no. 6480 and the Palolo ditch station no. 6490. Exh. 5 at 20-24. This data indicates a range in mean stream flow from 4.48 to 28.43 mgd. Id. Over this period of record, the Q75 ranged from .1 mgd to 1.5 mgd, and the Q90 ranged from .1 mgd to 1 mgd. Id. at 25; Exh. 7.

USGS also takes miscellaneous measurements from time to time at various locations throughout Maui. Petitioners have provided available figures for this Commission’s review and consideration. Exh. 13. In addition to available USGS records, Wailuku Agribusiness “operates gaging stations on their main supply ditches – Waihee, Spreckels, North Waiehu, Maniania, Iao-Waikapu, Everett and South Waikapu ditches.” Yamanaga & Huxel, supra, at 20. Although not truly indicative of streamflow, these records can provide additional information that will be useful to this Commission in establishing scientifically based interim instream flow standards. Despite the Water Code’s clear mandate that operators of all stream diversions submit monthly discharge reports to the Commission, HC&S has failed to provide such information. See Haw. Admin. R. § 13-168-7(b) (“The owner or operator of any well or stream diversion works or battery of such water sources shall file a report of total water usage on a regular monthly (calendar or work schedule) basis to the commission[.]”). Such data would also prove useful to the Commission in establishing scientifically based IIFSs for these streams.

VI. EXISTING INSTREAM AND OFFSTREAM WATER USES

There is a compelling public need to amend the IIFSs for the streams of Nā Wai `Ehā. These four streams and their tributaries are environmentally, culturally, and economically significant to the Wailuku community, the residents of Maui, and the history of our Hawaiian Islands, and support invaluable instream uses.⁶ As detailed in Part IV, supra, existing offstream diversions operated by plantation interests continue to take massive amounts of water from these streams even though the majority of this water is no longer being used.

A. Instream Uses of Water

Nā Wai `Ehā's streams are limited in their ability to support instream uses in their present, diverted state. Hawai'i's Water Code defines an instream use as "beneficial uses of stream water for significant purposes, which are located in the stream and which are achieved by leaving the water in the stream." Haw. Rev. Stat. § 174C-3. The Code provides several examples of instream uses, including: (1) the maintenance of fish and wildlife habitats; (2) outdoor recreational activities; (3) maintenance of ecosystems such as estuaries, wetlands, and stream vegetation; (4) aesthetic values such as waterfalls and scenic waterways; (5) maintenance of water quality; (6) the conveyance of irrigation and domestic water supplies to downstream points of diversion; and (7) the protection of traditional and customary Native Hawaiian rights. Id. The complex system of rivers and tributaries that comprise the larger Nā Wai `Ehā watershed supports each of the beneficial uses identified above and Hui and Maui Tomorrow supporters continue to utilize these waters to the extent possible. Unfortunately, decades of excessive

⁶ Petitioners have attached as Exh. 15 a list of known existing uses of water and the tax map key numbers for those uses. Petitioners have also attached as Exh. 16 a list of declarations of water use for Nā Wai `Ehā streams, with the understanding that some of those uses may no longer exist.

offstream diversions to subsidize plantation agriculture have severely impaired and threaten to wipe out the remaining beneficial instream uses that persist in Nā Wai `Ehā. Amended IIFSs for Waihe`e, Waiehu, `Īao, and Waikapū Streams and their tributaries are necessary to protect and restore all of these beneficial uses.

1. Maintenance of Fish and Wildlife Habitats

Water must be returned to the streams of the Nā Wai Eha watershed to ensure the continued existence of the endemic fish and wildlife in the streams and near-shore marine waters by maintaining the habitats necessary to sustain viable populations of these stream and nearshore marine animals. The lack of any regular flow in these streams is lethal to native stream life and their habitats. Many of Hawai`i's native stream animals are amphidromous, meaning that their life cycle involves both fresh and salt water. HSA, supra, at 133. These species live their entire adult lives in fresh water and their early larval periods out at sea. Id. Without a direct and continuous connection between mauka and makai, our native stream animals cannot survive. Id.

The HSA concluded that Waihe`e Stream had outstanding and blue-ribbon aquatic resources, while Waiehu, `Īao, and Waikapū had substantial aquatic resources. Id. at 153. To assess and compare the biological quality of individual streams, the HSA “developed a ranking system based primarily on the presence and abundance of the four native species believed to be indicators of potentially outstanding habitat.” Id. at 137; see also id. at 136 (four native indicator species were: `o`opu nakea (Awaous stamineus), `o`opu hi`ukole and alamo`o (Lentipes concolor), hīhīwai (Neritina granosa) and `o`opu nopili (Sicyopterus stimpsoni)). Waihe`e Stream contained `o`opu alamo`o, nakea and nopili, but no hīhīwai. Id. at 153. Waiehu, `Īao, and Waikapū streams contained both `o`opu nakea and `o`opu nopili, but no hīhīwai or `o`opu alamo`o. Id. All four of these streams also had other native species, such as more common types of `o`opu or `ōpae (Atyoida bisulcata and Macrobrachium grandimanus). Id. at 136, 153.

The Department of Land and Natural Resources' Division of Aquatic Resources ("DAR") maintains that the single most important requirement for protecting native stream life in Hawai'i is ensuring the natural patterns of water flow between streams and the ocean. See Robert Nishimoto, DAR, Hawaiian Streams: The Mauka to Makai Connection at http://www.hawaii.gov/dlnr/dar/hawn_streams.htm. Unfortunately, the systematic diversion and channelization of the streams of Nā Wai `Ehā has interrupted and, in many instances, totally stopped the flow of fresh water into the ocean. These streams are dry during much of the year, often running only after rain events. As the streams dry up, petitioners and other concerned community members are forced to try to gather the native stream animals before the last remaining pools disappear and transport these creatures, by bucket, to areas above the diversions where water still flows in the streams. Many of these native streams animals cannot be saved and die when the streams dry up. As a result, current fish populations in the streams and near-shore marine waters of Nā Wai `Ehā are no longer sufficient to support continued fishing or other traditional gathering practices. Amending the IIFS for each of these streams to provide for the continuous flow of water in the streams will help to ensure that the web of life is able to continue in Na Wai Ehā's streams and nearshore marine waters.

2. **Outdoor Recreational Activities**

"Water-related recreation is a part of life in Hawai'i." HSA, supra, at 232. The waters of Nā Wai `Ehā support important outdoor recreational activities, such as hiking, fishing, swimming, parks, and nature study. Id. at 252; see also Part IV(C), supra. As this Commission has already recognized, "[s]treams ranked highly for recreation tend to be correlated with high flow rates[.]" HSA, supra, at 244. Although only Waihe`e and `Īao qualified as blue ribbon recreational resources, meaning that they provide the very best recreational resources that the

state has to offer, Waiehu and Waikapū still support some recreational activities and could support even more uses if flow was restored to these streams. Id. at 252. All of these uses, however, are impaired by reduced stream flows. As just one example, a popular swimming hole on `Īao Stream is directly below Wailuku Agribusiness' intake. As demonstrated in Part IV, supra, Wailuku Agribusiness often diverts the entire flow of the stream, especially during times of low flow. Community members who would like to go swimming are, therefore, forced to cover the grate to Wailuku Agribusiness' intake so that water will bypass the intake and instead fill the swimming hole so that the community can once again utilize this public trust resource.

3. **Maintenance of Ecosystems, such as Estuaries, Wetlands, & Stream Vegetation**

Water must also be restored to the streams of Nā Wai `Ehā to maintain ecosystems, such as estuaries, wetlands, and stream vegetation. Haw. Rev. Stat. § 174C-3. Current levels of flow are insufficient to maintain healthy wetlands, stream vegetation, and estuaries. All four streams of Nā Wai `Ehā possess wetlands recognized by the United States Fish and Wildlife Service. HSA, supra, at 186. As detailed earlier, Waikapū Stream is the only stream on Maui, which serves as recovery habitat for threatened and endangered species. Id. at 179; see also Part IV(C), supra. Waikapū also flows into an estuary that provides important habitat for terrestrial, marine, and aquatic species. HSA, supra, at 110, 112. All four of the streams also boast between 20-30% native forest along the length of the stream. Id. at 176, 186. These features must be preserved as they are critical to the quality of the streams and their ability to support other instream uses and values. Id. at 169.

4. **Scenic Beauty and Water Quality**

Visitors and residents alike enjoy the scenic beauty of Nā Wai `Ehā. Waihe`e, `Īao, and Waikapū stood out as having spectacular scenic views. HSA, supra, at 252. `Īao Valley is also a

popular tourist destination with natural wonders such as the `Īao Needle. Regular stream flow is necessary to maintain both scenic beauty and water quality. Id. at xxii.

5. Conveyance of Irrigation Supplies to Downstream Points of Diversion

Flow must also be restored to Nā Wai `Ehā so that water can be conveyed to downstream points of diversion. Haw. Rev. Stat. § 174C-3. Many of petitioners' supporters are riparian landowners. Yet, with the streams dry much of the time, petitioners are able to use very little, if any, flow of the streams for cultivation on riparian land. As just one example, John V. and Rose Marie H. Duey and their extended `ohana own approximately 18 acres in `Īao Valley, a portion of which underlies `Īao Stream. They cultivate wetland kalo and other crops on their property, but they are severely limited in the use of their `auwai because `Īao stream is often dry, except when it rains. Current flow levels in Nā Wai `Ehā are insufficient to support desired levels of downstream irrigation, including kalo cultivation.

6. Protection of Traditional and Customary Native Hawaiian Rights

Traditional and customary Native Hawaiian rights are actively practiced throughout the Nā Wai `Ehā watershed, although current stream flows are insufficient to support desired levels of wetland kalo cultivation and other traditional and customary practices. Cultural practitioners, hula halau, and local residents continue to rely on these waters to provide populations of culturally significant plants and stream animals sufficient to support traditional and customary practices. Kalo cultivation is a recognized Hawaiian cultural practice protected by both the Hawai`i State Constitution and the Water Code. Haw. Const. Art. XII, § 7; Haw. Rev. Stat. § 174C-101. In ancient times, lo`i kalo blanketed the valleys from Waihe`e to Waikapū. As detailed in Part IV, supra, this was the largest continuous area of wetland kalo cultivation in all of the Hawaiian Islands. See Handy & Handy, supra, at 496; Sites of Maui 65 (Elsbeth Sterling

ed., Bishop Museum Press 1998). Although the Commission's declarations of water use are limited, they provide a snapshot of the uses along Nā Wai `Ehā. See Exh. 16; note 6, supra. Approximately 20 residents in this area, the overwhelming majority of all who filed declarations, claimed to manage lo`i kalo that rely on the water of the `Īao, Waihe`e, Wai`ehu, and Waikapū streams.

In addition, the Nā Wai Eha watershed is home to several significant heiau. Of particular significance are Haleki`i and Pihana Heiau, located between Waiehu and `Īao Streams. See Sites of Maui, supra, at 64. These heiau were re-consecrated in 1776 as an offering before the famous battle between Hawai`i and Maui. Id. It is said that Kalanikaukooluaole, a high chiefess and daughter of Kamehamehanui, bathed in the stream water near the heiau. Id. at 76. Today, cultural practitioners continue this practice by bathing in the waters of Wai`ehu and `Īao Streams before entering these heiau. This is impossible to do when there is little or no water in the stream.

Oral history from the Nā Wai `Ehā area identify a spring named Waiola, which was renowned for its healing and purifying powers, on what is now the Sevilla family property. See Part III, supra. Native Hawaiians traditionally used this spring to purify themselves before entering heiau. Waiola is now dry and runs only after unusually heavy rains. Cultural practitioners from the area, including petitioners, previously used and would like to once again use this spring on a regular basis for traditional, cultural, and spiritual purposes.

B. Offstream Uses of Water

Since the beginning of commercial sugar cultivation on Maui, offstream agricultural demands for water in West Maui have changed the character of the streams and the communities that relied and continue to rely on them. As documented in Part IV, supra, extensive off-stream use of water by Wailuku Agribusiness and HC&S drained the majority of the water from Nā

Wai `Ehā's streams, withdrawing at least 6 mgd from Waiehu, 5 mgd from Waikapū, 40 mgd from Waihe`e, and 20 mgd from `Īao. HSA, supra, at 88-89; Yamanaga & Huxel, supra, at 20-21. Although Wailuku Agribusiness has eliminated its sugar cultivation, the streams of Nā Wai `Ehā have yet to receive any of the water that continues to be taken by these private interests. See Part IV(D), supra. Moreover, water taken from these streams continues to service only a limited acreage of sugar. Id. For example, HC&S announced long range plans to convert 618 acres of sugar to a housing development in the Central Maui region when it requested project district zoning in the Kihei-Makena community plan, approved by the Maui County Council in 1998. See Department of Planning, Maui County Council, Kihei-Makena Community Plan 45, 69 (1988) available at <http://www.co.maui.hi.us/departments/Planning/pdf/kihei.pdf>.

VII. ANTICIPATED BENEFITS OF STREAM RESTORATION AND BASIS FOR SUCH IMPACTS

As detailed in Part VI, supra, amending upward the IIFSs for Nā Wai `Ehā will protect and restore instream uses, including the maintenance of fish and wildlife habitats and ecosystems, improved scenic views, water quality, and outdoor recreation, while also increasing opportunities for traditional and customary Native Hawaiian practices. This very Commission “found a positive correlation between good aquatic resources and larger streams and lack of stream modification.” HSA, supra, at xxi. It also concluded that “[e]xtensive development of water is incompatible with outstanding aquatic resources.” Id. at 139. Both the Commission and the Hawai`i Supreme Court have also recognized the “positive effect[s]” of stream restoration. Waiāhole, 94 Haw. at 146, 9 P.3d at 458.

In the Commission’s view, generally, the higher the volume of instream flow and the closer the streamflow approaches its natural pre-diversion levels, the greater the support for biological processes in the stream and its ecosystem. Thus, in general, it is expected that additional flows to the streams would increase the native biota habitat.

Id. (citations and quotations omitted). This Commission has also acknowledged the need for high base flows:

High base flow is important for the estuary ecosystem as well as the stream itself. The flows generated during storm events perform a function different from that of base flows. The estuary does not assimilate a great deal of nutrients from flood events, because the water moves through the system so rapidly. Those flows flush out the estuarine system. The base flow carries the steady load of nutrients that is essential for estuarine productivity, and is essential to sustain the nutrient levels throughout the year.

Id. at 158, 9 P.3d at 470 (emphasis added). Petitioners expect increased stream flows in Nā Wai `Ehā to have a direct, positive impact on the streams, their nearshore marine waters, and the important instream uses that depend on them. See also Part VI(1), supra.

A. Benefits to Aquatic Life and Related Ecosystems

Recent studies in Nā Wai `Ehā have further documented the adverse effects of reduced stream flow on aquatic life. For example, Wailuku Agribusinesses' diversion on the upper reaches of `Īao Stream reduces stream flow by 92-97% and reduces the width and depth of the stream channel. McIntosh et al., Effects of Stream Diversion on Riffle Macroinvertebrate Communities in a Maui, Hawai`i, Stream, 18 River Research and Applications, 569, 576 (2002) ("McIntosh et al. (2002)"). Such reductions in flow in streams with diversions (such as `Īao) compound the negative impacts of drought. Mark Eric Benbow, Endemic Amphidromous Postlarval Recruitment and Migration Patterns in West Maui Streams (1999-2000) (unpublished preliminary report) ("Benbow (1999-2000)"). Stream diversions also reduce or eliminate the effect of short-term floods, which play a role in native species reproduction and migration. McIntosh et al. (2002), supra, at 575.

Restoring continuous flow to Nā Wai `Ehā would reduce the negative impacts of diversions on the: (1) migration of amphidromous stream animals; (2) reproduction of native

species; and (3) density, biomass, and in at least one instance, the body size of the aquatic insects that comprise the food supply for native fish.

1. **Migration.**

Increased stream flows improve the migration of amphidromous stream animals such as `o`opu. A 1999-2000 study examined migratory patterns of these species and observed a direct correlation between migration and stream flow. Benbow (1999-2000). Data collected over two years revealed that stream animals in streams with the greatest flow had the greatest rates of migration, even during periods of naturally occurring drought. Id. To the contrary, streams with reduced flow impaired the migration of native stream animals. Id. For instance, scientists documented zero migration of `o`opu and `ōpae in `Īao Stream over the course of their study in 1999-2000. Id. In another study where migration did occur, these species were still adversely affected by reduced flow in that documented climbing rates for `o`opu and `ōpae were the lowest in stream reaches with lower flows. Mark Eric Benbow et al., A Note on Cascade Climbing of Migrating Goby and Shrimp PostLarvae in two Maui Streams, 34(2) *Micronesica*, 243, 247 (2002).

2. **Reproduction.**

Restored stream flows also facilitate native species reproduction. Existing studies suggest that “adult reproduction and larval drift are correlated with stream flow and a long term reduction in flow will eliminate (1) reproduction, (2) larval drift to the ocean and (3) post larval migration back into the stream.” Benbow (1999-2000); Way et al. (1998); Lindstrom (1998).

3. Food Chain and Overall Stream Ecology.

Amending upward the IIFS will also improve the food web and energy flow in each petitioned stream while at the same time increasing native species populations and improving overall stream ecology. While further studies are necessary to detail the precise relationship between biota, habitat, and stream flow characteristics, studies on `Īao, Waihe`e, and other West Maui streams demonstrate that diversions adversely impact the food supply and habitat for native fish.

These studies evaluated macroinvertebrates, which are an excellent indicator of watershed quality and the effect of stream flows on fish due in part to the role of macroinvertebrates in the food chain. McIntosh *et al.*, Effect of Water Removal on Introduced Caddisflies from a Tropical Mountain Stream, 39(4) *International Journal of Limnology* 297, 297-98 (2003) (“McIntosh *et al.* (2003)”). Studies addressing the reduction of stream flow on these creatures demonstrate that increased stream flow improves stream ecosystems and the viability of native species by improving habitat quality and increasing food supply. A growing amount of research now reveals that diversions reduce the density of aquatic insect communities by 46%. See McIntosh *et al.* (2002), *supra*, at 573. See also Kido (1996) and Wolff (2000). Diversions also reduce species diversity, as clearly demonstrated in `Īao Stream where three species, two of which are native, were not found below the diversion. *Id.* Further, diversions reduce the biomass of two kinds of macroinvertebrates that are essential food sources for native fish, and may reduce the body size of one species, which is an essential food source for native fish. McIntosh *et al.* (2003), *supra*, at 297, 298; Kido (1997a). These studies confirm that in Nā Wai `Ehā, “additional flow to the streams would increase the native biota habitat[.]” Waiāhole, 94 Haw. at 157, 9 P.3d at 469.

B. Other Benefits

As detailed in Part VI, supra, Nā Wai `Ehā's streams are presently limited in their ability to support many beneficial instream uses of water, including outdoor recreation (especially swimming and other recreational pastimes in `Īao stream), aesthetic values (such as waterfalls and scenic waterways), maintenance of water quality, conveyance of irrigation and domestic water supplies to downstream points of diversion, and protecting and restoring traditional and customary Native Hawaiian rights and practices. Restoring flow to the streams of Nā Wai `Ehā will re-establish and protect each of these beneficial uses. More specifically, petitioners will be able to: (1) expand the cultivation of agricultural crops, including wetland kalo, on their lands in Waihe`e, Waiehu, `Īao, and Waikapū; (2) increase the practice of Native Hawaiian traditions and customs, including traditional gathering practices, in the streams, riparian corridors, and nearshore marine waters of Nā Wai `Ehā; and (3) appreciate and utilize improved recreational opportunities, water quality, and aesthetics.

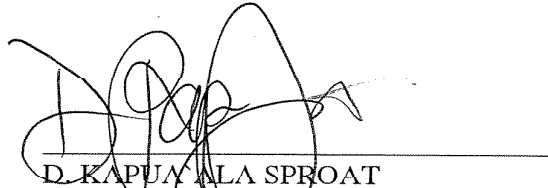
VIII. CONCLUSION

“[I]nstream flow standards serve as the primary mechanism by which the Commission is to discharge its duty to protect and promote the entire range of public trust purposes dependent upon instream flows.” Waiāhole, 94 Haw. at 148, 9 P.3d at 460. This Commission, “obviously, cannot ‘implement’ or ‘protect’ standards that do not exist. Id. For all of the reasons detailed herein, Hui o Nā Wai `Ehā and Maui Tomorrow respectfully urge this Commission to promptly establish scientifically based IIFSs for Waihe`e, North and South Waiehu, `Īao, and Waikapū streams and their tributaries, and to order the immediate restoration of all stream flows not currently put to beneficial use, pending the outcome of this process.

DATED: Honolulu, Hawai`i, June 25, 2004.

D. KAPUA`ALA SPROAT
ISAAC H. MORIWAKE
EARTHJUSTICE
223 South King Street, Suite 400
Honolulu, Hawai`i 96813-4501

By:



D. KAPUA`ALA SPROAT
Attorneys for Hui o Nā Wai`Ehā
and Maui Tomorrow