COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

In re Petitions to Amend Interim Instream Flow Standards for Honopou, Huelo (Puolua), Hanehoi, Waikamoi, Alo, Wahinepe'e, Puohokamoa, Haipua'ena, Punalau/Kōlea, Honomanu, Nu'ailua, Pi`ina`au, Palauhulu, Ohia (Waianu), Waiokamilo, Kualani, Wailuanui, West Wailuaiki, East Wailuaiki, Kopili'ula, Puaka`a, Waiohue, Pa`akea, Waiaka`a, Kapa`ula, Hanawī and Makapipi streams.	Case No. CCH-MA13-01 DECLARATION OF LUCIENNE DE NAIE ON BEHALF OF SIERRA CLUB MAUI

DECLARATION OF LUCIENNE DE NAIE

1. My name is Lucienne de Naie. I am a resident of Huelo, Maui in the state of Hawaii. I am a Sierra Club Member and a supporter of Maui Tomorrow.

2. This Declaration is based upon my personal knowledge, except where otherwise stated.

3. The Sierra Club Maui Group, a branch of Sierra Club Hawaii Chapter, was formed on Maui in 1976. At that time, a Sierra Club Maui Group Outings Committee was also formed, whose purpose was to provide recreational and educational nature hikes on public and private lands with lawful permission. Sierra Club Hawaii Chapter and Sierra Club Maui Group are both part of the Sierra Club, a California non-profit organization founded in 1892, whose headquarters is located at 85 Second St, 2nd Floor, San Francisco, CA 94105.

4. The Sierra Club Maui Group Outings Committee has been leading recreational and educational nature hikes to East Maui streams, pools and waterfalls for over thirty years. Many of these streams, pools and waterfalls are the subject of the current East Maui Stream contested case. All hikes and accesses have been conducted after securing permission from and providing participant waivers to East Maui Irrigation,Co or other appropriate landowners.

5. As Vice-Chair of the Sierra Club Maui Group Outings Committee, I have personally led hikes along the EMI ditch trail system that visited, crossed or followed many East Maui streams over the past 19 years. The streams included in the East Maui Interim Instream Flow Standards (IIFS) 2014 contested case that we have visited on these hikes include:

Honopou
Hanehoi
Puolua
Waikamoi/Alo
Wahinepee
Puohakamoa
Honomanu
Pi'ina'au
Palauhulu
West Wailuaiki
East Wailuaiki
E. and W. Wailuanui
Waiokamilo
Puaka'a
Waiohue
Pa'akea
Waiaka'a
Kapaula
Waikamoi

Hanawi and
Makapipi streams

6. Sierra Club Maui has offered extensive comments over the years on conditions in various East Maui streams which are the subject of this contested case, including specific remarks regarding various streams that were incorporated into the final drafts of the Stream Flow Assessments produced by the Water Commission, such as those found on pp. 60 and 66 of the December 2009 Waikamoi Interim Instream Flow Standard Assessment Report ("**IFSAR**") See Exhibit E-48.

7. In general, I have observed conditions in these streams below the EMI diversions to be very dry and unnatural during all but heavy rain events, while nearby EMI diversion ditches are carrying the stream water away. The ditches themselves have deteriorated over the nearly two decades I have walked these trails and they appear to be leaking and wasting water. I have observed ditch walls cracked by tree roots, ditches and intakes blocked by fallen trees and branches and ditches filled with debris.

8. Because the EMI ditches capture virtually all of the upstream flows, lack of water in many reaches of the streams limits recreational and aesthetic enjoyment of the streams and pools, limits nature study opportunities, and could lead to unhealthful conditions for those who seek to enjoy recreational use of the waters.

9. The healthful conditions of our streams are a public concern to me as a Sierra Club Hike leader and to the general public. Water Quality is also an important protected use under the State Water Code. The Water Commission staff acknowledged this in on p.6 of their Sept 24, 2008 staff submittal regarding the East Maui IIFS petition. The Staff report stated:

Public health.

"Public testimony indicates that the decrease in the ability to gather impacts nutrition. Stagnant water in the streams results in increased mosquitoes, which may lead to increased risk in dengue fever or other mosquito-borne illnesses. Stagnant water may also increase the risk of skin disease from the water."

The Staff Submittal is presented as Exhibit E-7.

10. As a Sierra Club hike leader, I concur that insufficient stream flows can create unhealthful conditions in the diverted streams of East Maui, encouraging mosquito breeding, and potentially put residents and visitors at risk.

11. I would like to comment on conditions we have observed in specific East Maui streams.

HANEHOI, HUELO & PUOLUA STREAM

12. HANEHOI, HUELO AND PUOLUA STREAM and their tributaries have their flows diverted by EMI diversion works at Lowrie ditch. There are a total of five (5) diversions on these three (3) streams along Lowrie Ditch. HANEHOI STREAM is also diverted by EMI diversion works at New Hamakua and Wailoa/Ko'olau ditches. HANEHOI and PUOLUA STREAMS have their flows diverted by EMI diversion works at New Ha'iku Ditch.

13. We have visited natural stream and pool areas along HANEHOI STREAM and PUOLUA STREAM on state and private land in the general locations shown on Exhibit E-24. These natural pools and stream areas have been used by Huelo community members for recreation for many generations.

14. Sierra Club hiking groups have visited stream, pool and waterfall areas along HANEHOI AND PUOLUA STREAMS for educational and recreational hikes for many years, both before and after the 2008 CWRM decision to set amended IIFS. We have observed these areas at times, over the past ten years with insufficient water levels,

slow moving stream flow, completely dry sections of stream and waterfalls reduced to a trickle.

15. It has been six years (September 2008) since the HANEHOI and PUOLUA STREAMS were granted partial restored flows, but those flow levels promised either were not delivered or do not appear to be adequate to ensure a healthy stream flow and clean, moving waters.

16. As a Sierra Club hike leader I am aware of another critical issue in our East Maui streams that must be addressed. We observe long dry stretches of stream beds on HANEHOI stream caused by the lack of sufficient flows making it past the diversions. These stretches are often overgrown by water hungry invasive species of noxious weeds such as various ficus species, Coix lacryma-jobi (Job's Tears), Clidemia hirta, Hedychium flavescens (yellow ginger), Tibouchina herbacea, and Ardisia elliptica (Inkberry). Experts agree that these weeds threaten the health and productivity of our watersheds. See Exhibit E-46 A-H showing overgrown sections of HANEHOI and PUOLUA STREAMS.

17. This overgrown condition is not natural or desirable. If only meager or inconsistent stream flows are released to HANEHOI STREAM, these alien weeds will drink up much of the water and impede any meaningful mauka-makai flows. The need for maintenance of the stream beds themselves was mentioned a number of times during the East Maui IIFS petition public hearings in 2008. Commission members asked staff how this critical issue would be addressed and it is discussed in the CWRM meeting minutes of September 24-25, 2008 on pp. 13-14. See Exhibit E-47.

18. The Commission was told that maintenance of the stream beds could be part of the adaptive management plan for the East Maui streams, such as HANEHOI since all owners of land along the stream have the responsibility to care for the stream beds. It does not appear that any effort has been made to incorporate this into the oversight of the instream flow restoration process, yet it is the most basic of solutions: open stream beds allow more flows.

19. Sierra Club volunteers used to participate in removal of invasive species along the East Maui streams. We have not heard of any State or EMI efforts to keep these streams clear, but observe that it is an important part of the overall Water Commission responsibility to protect our public trust resources. We would like to participate if the opportunity was offered.

20. Under current severely diverted conditions, our members who join the hikes to streams like HANEHOI and PUOLUA are deprived of a full aesthetic and recreational experience, due to inadequate stream flows that limit water levels in some pools, reduce waterfall volume and deprive the stream of native stream life for nature study.

21. We are also concerned that the endangered native Hawaiian damselfly Megalagrion Pacificum, which has been found above the diversions on Hanehoi stream, is being deprived of the vitally needed opportunity to expand its habitat range along the other nearby reaches of the stream, due to the extreme dewatering of HANEHOI below the upper diversions. If this rare damselfly had adequate natural habitat areas provided to allow it to survive at lower elevations, it would greatly enhance our opportunities for nature study and environmental education.

Restoration Potentials:

22. PUOLUA STREAM has a low diversion area on Lowrie Ditch that is poorly maintained and completely stops any migration of stream life. PUOLUA STREAM is edged with continuous kalo lo'i and other cultural sites for most of its length. This stream should have its full flow restored to support the water needs of the Huelo community where it joins HANEHOI STREAM and can help rewater it. A series of pictures of Puolua stream and the Lowrie diversion is submitted as Exhibit E-12 A-E.

EAST & WEST WAILUAIKI STREAMS

23. EAST & WEST WAILUAIKI STREAMS have their flows diverted by EMI diversion works at the Wailoa/Ko'olau ditch.

24. Sierra Club hikes have visited stream, pool and waterfall areas along EAST and WEST WAILUAIKI streams on State and EMI land in the general locations shown on Exhibit E-49. We have observed these areas being accessed by many local families and visitors for recreation and aesthetic enjoyment. Sierra Club hiking groups have visited stream, pool and waterfall areas along EAST & WEST WAILUAIKI STREAMS for educational and recreational hikes for many years, both before and after the 2010 CWRM decision to set amended IIFS. The stream areas often have long mostly dry stretches below diversions, which the IIFS have not addressed, caused by the lack of sufficient flows bypassing the diversions.

25. A small amount of water was set for the streams. An IIFS of two-hundred and sixty-thousand gallons a day (260,000 gpd) in EAST WAILUAIKI and one-hundred and-thirty thousand gallons per day (130,000 gpd) in WEST WAILUAIKI was stipulated to be released during the dry season in each stream in 2010. A small "splash path" for

native stream life appears to have been installed on EAST WAILUAIKI stream at the Ko'olau ditch intake. These amounts are found in the Water Commission's May 24, 2010 Staff submittal that was adopted by the Commission at their May 24 meeting and shown in Exhibit E-50.

26. Photographs taken in March, 2012, shows the splash path and the barely wetted surface and isolated pools below the EMI diversion on EAST WAILUAIKI STREAM. These are presented as Exhibit E-51 A-E. These are the conditions that recreational users find below the EMI diversions, even in the winter season. We feel that the lack of a natural mauka-makai stream flow impacts the recreational experience the streams could offer. Although the Commission specified that regular monitoring of conditions would occur, and adaptive strategies would be employed, they have not posted reports on their website on whether studies have been done to determine if the IIFS is effective for EAST or WEST WAILUAIKI STREAMS. Recently released CWRM Monitoring reports covering 2011 to 2014 have no flow data for EAST WAILUAIKI and very erratic data for WEST WAILUAIKI, with widely varying flow levels from day to day. It appears the flow levels are more connected with rain events rather than any released flows from diversions. These are presented as Exhibit E-52.

27. We also note that EAST WAILUAIKI STREAM is the last location in the world where the endangered flying earwig Hawaiian damselfly Megalagrion nesiotes was found in a 2002 survey below the Ko'olau diversion, near Hana Highway. USFWS Researchers reported that:

"Additional colonies could be present at intermediate elevations [on the same stream] , but these may have escaped detection because the topography of the area makes sampling difficult, as does the tendency of adults to fly low into tangled undergrowth when disturbed."

This information was in a USFWS Federal Register report (2007) to support listing the Earwig Damselfly as an endangered species and is presented in Exhibit E-53.

28. Hawaii's Comprehensive Wildlife Conservation Strategy Report issued in October 1, 2005 and included as Exhibit E-54, names EAST WAILUAIKI STREAM as a "key habitat" for the extremely endangered species of damselfly.This potential habitat includes areas of the stream that are subject to the EMI diversion structures, where the stream bed habitat needed by the endangered damsel flies can be virtually dry a great deal of the time. The damselflies are aquatic insects and depend upon flowing sections of the stream in their immature stages to survive.

29. Sierra Club hike leaders want to offer educational presentations and nature study opportunities for hike participants about native stream flora and fauna in the WAILUAIKI STREAMS, but the flack of continuous lows in portions of the EAST and WEST WAILUAIKI STREAMS are inadequate to support an abundance of native stream biota, limiting educational opportunities. Increased year round stream flows in EAST and WEST WAILUAIKI STREAMS could extend habitat range for the endangered earwig Hawaiian damselfly and provide the public with the recreational and educational enjoyment of the streams that our State Water Code protects.

Restoration Potentials

30. The IIFS for WEST WAILUAIKI STREAM was set in May 2010 by CWRM at 3.80 cfs (2.45 mgd) in the wet season and only .40 cfs (.26 mgd) for the dry season. The Commission should follow the DAR staff habitat guidelines and set IIFS for WEST WAILUAIKI STREAM at 6 cfs (3.87 mgd) and a minimum continuous flow of 1.4 cfs (.9 mgd).

31. IIFS for EAST WAILUAIKi stream was set in May 2010 was set by CWRM at 3.70 cfs (2.39 mgd) in the wet season and only .20 cfs (.13 mgd) for the dry season. The Commission should follow the DAR staff habitat guidelines and set IIFS for EAST WAILUAIKI STREAM at 5.75 cfs (3.71 mgd) with a minimum continuous flow of 1.4 cfs (.9 mgd). The "wetted path" created for the migration of native stream life appears to be a very artificial solution offered instead of actual continuous flow needed by the stream animals. The Commission should have factual data provided on its effectiveness to determine of greater flows are needed.

32. The Commission has a responsibility to protect Public Trust resources and these revisions in the IIFS can improve the recreational and educational potential and promote maximum habitat potential for these important stream which ranked number two (2) and four (4) overall of the eight streams DAR evaluated for restoration. See Exhibit E-55 DAR chart 2010.

WAIOHUE STREAM

33. Sierra Club hiking groups have visited stream, pool and waterfall areas along WAIOHUE STREAM for educational and recreational hikes for many years, both before and after the 2010 CWRM decision to set amended IIFS. We access WAIOHUE STREAM as part of our hikes along the Makapipi Trail in Ko'olau District. The approximate location of these hikes is shown on Exhibit E-56, a USGS map of the area. Virtually all of WAIOHUE STREAM is located on publicly owned land, from the mountains to the sea. Sierra Club hikers value the scenic and recreational attributes of WAIOHUE STREAM.

34. WAIOHUE STREAM flow is diverted by EMI diversion works on both its East and West branches and the water directed into EMI's Ko'olau Ditch. Maps in the CWRM 2009 IFSAR for WAIOHUE hydrological unit do not show that the stream has two branches, both diverted. The Waiohue 2009 IFSAR is presented as Exhibit E-57.

35. I have led Sierra Club hikes along the Ko'olau Ditch Trail which crosses WAIOHUE STREAM since 1996, and I have observed the diversions on both branches of the stream, and many other small EMI diversions in the general area as well. In figure 3.3 of the Dec 2009 CWRM Waiohue IFSAR on p. 36 shown as Exhibit E-57, a map shows the location of diversions on two branches of WAIOHUE STREAM and the IFSAR discusses them on pp. 95-96. See Exhibit E-57.

36. The extent to which multiple tributaries of WAIOHUE STREAM are being diverted is important for the Commission to consider because, under natural conditions, all of these flows would be contributing to the exceptional native stream life habitat that is struggling to survive in this stream.

37. As mentioned above, recreational users of the trails around WAIOHUE, observe how many of the stream's other smaller tributaries and nearby springs are also captured by cement troughs or pipes and diverted away from the stream and aquifer and into the EMI ditch. This is also shown in Exhibit E-57, which shows pp.97-99 of the 2009 CWRM Waiohue IFSAR (PR-2009-11) picturing the numerous "minor diversions."

38. As a result of this thorough and systematic dewatering, WAIOHUE STREAM bed below the Ko'olau ditch is often very dry under normal rainfall conditions, limiting opportunities for recreational use, scenic enjoyment and nature study for Sierra Club members and the general public.

39. WAIOHUE STREAM has been rated as having "Outstanding" recreational and aquatic stream life characteristics by the Hawaii Stream Assessment ("HSA") See Exhibit E-58 CWRM/NPS, 1990 study on pp. xxv and 265. It was more recently rated in USGS and Hawaii DAR stream studies as having a high variety of native stream life. This is shown as Exhibit E-57 Table 5-1 from p. 52 of the 2009 CWRM Waiohue IFSAR. The HSA identified opportunities for camping, hiking, fishing, swimming, parks, and scenic views related to Waiohue.

40. WAIOHUE STREAM passes through the very popular Pua'a Ka'a State Wayside Park along the Hana Highway. There are natural pools and waterfalls on WAIOHUE STREAM in Pua'a Ka'a Park that are easily and safely accessible. The pools are overlooked by the public picnic areas in the park, providing the potential for scenic enjoyment. This is practically the only natural pool that is visible, and easily and legally accessible to the public along the entire forty mile drive from Pa'ia to Hana. Since there are also comfort stations located at Pua'a Ka'a State Park, thousands of residents and visitors stop there every day. Water from WAIOHUE STREAM is also diverted, by means of a pipe in the stream, to a tank that provides non-potable water to the comfort stations. This is shown in the Waiohue IFSAR on p. 96 of Exhibit E-57.

41. Our Sierra Club hike participants use the pools in Pua'a Ka'a park for swimming when water levels permit and enjoy the scenic views of the pool and waterfall in the park when the waterfall has flows. We have observed the ponds in Pua'a Ka'a park being accessed by many local families and visitors for recreation and aesthetic enjoyment when water levels permit. The numerous diversions dewatering WAIOHUE STREAM and its tributaries limit the opportunities for recreational use of this stream.

42. This becomes clear when the popular pond areas on WAIOHUE STREAM are also described and "rated" on several internet sites. See Exhibit E-59. Visitors comment on the lack of water in the pool during the "dry season." A comment from the website "Trip Adviisor" is typical:

"This is our favorite stop along the Hana Highway for a picnic lunch, to take in the beauty of the rainforest with an opportunity to swim in the small natural pool under the waterfall although there was not enough water in the pool during our recent visit during the dry season. "

http://www.tripadvisor.com/Attraction_Review-g29220-d1020424-Reviews-Pua_a_Ka_a_State_Park-Maui_Hawaii.html

43. A similar comment was posted on http://www.world-of-waterfalls.com/hawaii-puaa-kaa-falls.html:

"Puaa Kaa Falls (or Pua'a Ka'a Falls; rolling pig) resides in the Pua'a Ka'a State Wayside Park, which made it one of the rare waterfalls on the Hana Highway where public access was welcome. There are two waterfalls in the park. It looked like it would've been a real nice place for a picnic, but I believe the water diversion from EMI ditches further upstream tends to keep the water flow low unless it has raining like it was during our visit."

44. It is ironic that the state expends public funds to promote visitors coming to Maui and seeking places of natural beauty, such as WAIOHUE STREAM, yet the guardians of the public trust did not allow enough water in the stream for those same visitors to enjoy what they came to find.

45. At the ocean is Waiohue Bay, where the WAIOHUE STREAM discharge. It is accessible by a narrow fishing trail trail from Wailuanui, labeled on maps as the "old Government makai road." Two other streams (Puakea and Paakea) discharge into Waiohue Bay and there is a small but productive estuary there for native stream life. The area is used by local residents for traditional fishing and gathering practices, which is

confirmed in the December 2009 CWRM Waiohue IFSAR. See Exhibit E-57 Fig 5-2, p. 55.

46. Our Sierra Club educational hikes follow the EMI's Ko'olau ditch trail, which crosses both branches of WAIOHUE STREAM. We too, have observed that the stream beds are virtually dewatered below the ditch by two major and five minor diversions that all drain into EMI's Ko'olau ditch. This affects water levels in the Pua'a Ka'a Park ponds and waterfalls as is noted by visitors.

Restoration Potentials

47. According to the DLNR Division of Aquatic Resources (DAR) studies referred to in the 2009 Waiohue CWRM IFSAR, the dewatering of WAIOHUE STREAM also impacts habitat availability for the large array of native species found in the stream. The Assessment offers an analyses of stream life habitat conditions for WAIOHUE STREAM based upon USGS studies and concluded: "Overall, less than 50 percent of the natural habitat for all species in Waiohue Stream was maintained below Koolau Ditch under diverted conditions." See Exhibit E-57 p.43. On p. 46 of the December 2009 CWRM Waiohue IFSAR another useful analyses was offered: "Since Waiohue Stream already has a great diversity of native stream animals under diverted conditions, it has the potential to carry a full compliment of native stream fauna if allowed continous (sic) mauka to makai flow." See Exhibit E-57.

48. We are concerned and disappointed that the CWRM 2010 East Maui stream IIFS decision stipulated a very small amount of water to be released during the dry season in the WAIOHUE STREAM and left status quo for the "wet season," by simply assuming that around 2 mgd of flow would be available and sufficient. CWRM

minutes show an entirely inadequate "dry season" IFS of 0.06 mgd (60,000 gpd) was adopted. See Exhibit E-60, May 25, 2010 CWRM minutes p. 52 .

49. We could find no monitoring reports, or biological studies of how the native stream life were responding to the IIFS decision made four years ago. With such minimal restoration, continued monitoring is imperative. The Commission did set a goal of regular monitoring as well as updated biological studies as part of the IIFS process in 2010. We did note that a pipe was installed on the diversion to provide a wetter path for stream life migration on the main branch of WAIOHUE STREAM. All efforts should be made to actively monitor conditions in this stream.

50. From our long experience hiking in this area, we believe that any future CWRM decision should adopt the 2010 DAR recommendation for WAIOHUE flow levels, which would be an IIFS of 3.6 mgd. The DAR August 2009 Waiohue study measured flows above the Ko'olau Ditch diversion at almost 5 mgd. Boosting flows by 1 mgd would better comply with the Commission's responsibility to protect Public Trust resources such as the recreational and biological value of this outstanding stream resource.

51. In summary, Sierra Club members come on our hikes to enjoy the natural watershed beauty, enjoy recreational opportunities and learn about native ecosystems. The recreational and educational resources in WAIOHUE STREAM are potentially outstanding, but they cannot be fully enjoyed by Sierra Club members and the public under the present highly diverted conditions of WAIOHUE STREAM.

HONOMANU STREAM

52. Sierra Club hiking groups have visited stream, pool and waterfall areas along HONOMANU STREAM for educational and recreational hikes for many years, both before and after the 2010 CWRM decision to review the IIFS for this stream. We access HONOMANU STREAM as part of our hikes along the Wahinepe'e trail in Ko'olau District, as well as in the coastal portion of the stream. See Exhibit E-61 for approximate locations. Around half of the extensive length of HONOMANU STREAM is located on publicly owned land, while portions flow through land owned by Haleakala Ranch and Alexander and Baldwin. Sierra Club hikers value the scenic and recreational attributes of HONOMANU STREAM and are concerned that these are being limited due to lack of adequate flow in the stream.

53. HONOMANU STREAM has been rated as having "Outstanding" recreational and riparian characteristics by the Hawaii Stream Assessment (HSA) on the p. 265 chart. See Exhibit E-58, CWRM/NPS, 1990. The HSA identified opportunities for "camping, hiking, fishing, hunting, swimming and scenic views related to Honomanu."

54. HONOMANU STREAM was more recently the subject of a 2007 Stream and Estuary study published in the Bishop Museum Bulletin in Cultural and Environmental Studies. The study concluded that the presence of coastal ground water springs and a coastal estuary "results in significantly higher hīhīwai counts and allows recruits to grow to larger sizes (>20 mm)." The same study however, concludes that: "Most hīhīwai will not survive beyond the estuary because of dry stream beds and the lack of consistent stream flow." See Exhibit E-62.

55. HONOMANU STREAM flow is diverted five (5) times by EMI's Spreckels (529 m. elevation) and Ko'olau (400 m. elevation) diversion works and once

by the County Department of Water Supply's (DWS) Lower Kula Pipeline (936 m). Haleakala Ranch also has two small diversions at higher elevations. This is represented by Fig. 13-19 on p. 148 of the December 2009, Honomanu IFSAR, which is presented as Exhibit E-63.

56. HONOMANU STREAM has four separate tributaries affected by EMI diversion works. EMI's Spreckels Ditch has 4 intakes on various branches of HONOMANU STREAM and EMI's Ko'olau Ditch has one. All EMI diversions are located on State owned public trust lands in the Honomanu water lease area as shown on the land ownwership map, Fig 12-3- on p. 100 of the 2009 IFSAR. See Exhibit E-63.

57. The stream's other smaller tributaries and nearby springs are also captured by cement troughs or pipes and diverted away from the stream and aquifer into EMI's Spreckels ditch. See Exhibit E-63 , Fig 13-2 pp 111-. As a result, HONOMANU STREAM bed below the Ko'olau and Spreckels Diversions all the way to the ocean is usually very dry under normal rainfall conditions, limiting opportunities for recreational use, scenic enjoyment and nature study for Sierra Club members and the general public.

58. The upper areas of Honomanu stream along the Spreckels ditch are of particular interest to Sierra Club for nature study. This region has many varieties of native forest plants that are easy to view from the trail and are used as part of the nature study opportunities offered on Sierra Club hikes. Higher elevations of the stream, above the diversions, also have excellent native plant density, according to the HSA, and habitat for several endangered species. Severe dewatering of the steam has an overall negative effect on the surrounding native plant habitat.

59. One of the greatest losses from this dewatering are the once magnificent waterfalls that are found near the 500 m. elevation of the stream, below the Spreckels and Ko'olau Ditch diversions. I have lead hikes to this area for almost twenty (20) years and it has become increasingly difficult to find any water visible in these waterfalls, since it is all taken by the EMI diversions. These falls, on public land, are now dry except during heavy rain events when access to the area is not safe. This means that the public is denied the opportunity to enjoy the beauty of a public trust resource located on public land. A few photographs of one of the smaller upper water falls are presented as Exhibit 64-A-D.

60. HONOMANU STREAM meets the ocean below Hana Highway and forms a large estuary. The area is accessible to local residents and is a popular recreation area well used for camping, swimming, surfing, kayaking, fishing, hiking and family picnics. Local residents report long time use of Honomanu stream for traditional gathering of native stream life and ocean species. See EXHIBIT E- 63 Fig 5.2 on p. 59 in the Honomanu IFSAR.

61. Lack of sufficient flows to overcome the so-called "losing" stretches of HONOMANU STREAM in Honomanu Valley, limits the recreational use of the makai area of the stream by Sierra Club Members and the general public as well as severely limiting its habitat potential for native stream species..

62. Honomanu Valley had numerous Land Commission Awards shown on traditional maps, such as Reg Map 2467 which is presented as Exhibit E-65. Sierra Club uses these types of maps on our educational hikes to let participants connect with the history of the area. Map 2467 makes it clear that kalo cultivation was being done in Honomanu as of 1909, around the time EMI's Wailoa Ditch was built. Oral interviews in

Wai O Ka Ola, by Kumu Pono Associates, 2001 speak of wetland kalo cultivation in Honomanu Valley. It appears obvious that the HONOMANU STREAM had continuous stream flow to the ocean under natural conditions and that the lack of this continuous flow in present times is harmful to those who wish to enjoy the beauty of the stream and waterfalls and engage in recreation, nature study or traditional practices.

63. Participants in classes and gatherings held at nearby Camp Ke'anae also access Honomanu Bay and stream for recreational and educational activities. Sierra Club itself used these facilities to hold a youth eco-camp in the past, which included a visit to Honomanu with the youth. This stream and estuary have tremendous potential for public education and appreciation of our natural resources as well as traditional gathering, but the lack of stream flows is a major impediment to those public trust purposes being realized.

64. Lack of sufficient stream flows also impacts water quality in the HONOMANU estuary and could put the public at risk. The 2014 State of Hawaii Water Quality Monitoring Assessment Report shows on p. 82 that the ocean waters of Honomanu Bay have not attained federal standards for enterococcus levels, and are therefore, impaired. HONOMANU STREAM and other East Maui streams surrounding it have never even been tested for pollutants harmful to human health as the same report indicates on p.79. This information is presented as Exhibit E-66. Increased stream flows would be a part of restoring a natural healthy system in Honomanu Bay.

65. Sierra Club members and the public come on our hikes to enjoy the natural watershed beauty, recreational opportunities and to learn about native ecosystems. The recreational and nature study resources of HONOMANU STREAM are potentially

outstanding, and have been recognized as such by state studies. The HONOMANU STREAM also has the potential to provide outstanding habitat for the native hIhiwai and other stream species and to perpetuate traditional gathering practices for local residents, which is something the Sierra Club strongly supports. We are concerned that these protected uses of public trust resources cannot be fully enjoyed by Sierra Club members, local residents and the public under the present highly diverted conditions of HONOMANU STREAM.

Restoration Potentials

66. The CWRM 2010 East Maui stream IIFS decision stipulated that NO water would be returned to the heavily diverted HONOMANU STREAM. The May 25, 2010 CWRM staff submittal report makes the following statement. "Honomanu Stream: The interim IFS below all EMI diversions and just above Hana Highway, near an altitude of 20 feet, shall remain as designated on October 8, 1988. This is equivalent to an estimated flow of 0 based on USGS estimates of total flow at Q95 (TFQ95.)" See Exhibit E-50, p. 21. No flow levels were set for any of the four diverted tributaries of the HONOMANU STREAM above the Honomanu Valley, to restore the scenic grandeur of the upper waterfalls.

67. In spite of this shortsighted decision, made in 2010, The restoration potential of HONOMANU STREAM is high. The November 2009 HSHEP study completed for DAR and Bishop Museum by Parham et al can be found as Exhibit E-67. On pp 71-72 the HSHEP offered the following analyses of the restoration potential of Honomanu Stream, ranking Honomanu as the highest candidate for restoration out of the twenty-four streams analyzed:

"From a ranking perspective, Honomanü Stream ranked as the second stream for the amount of potential suitable habitat for native species in comparison with the other streams in this analysis. Overall, the results of the HSHEP model predicted approximately 13.5 km of habitat for all species combined in Honomanü Stream with 99.8% of this lost due to the combined effects of the stream diversion. There is the potential to recover over 13.4 km of habitat units in this stream and it ranked first among all streams in this report for its potential for restoration."

The 2005 USGS report **SIR** 2005-5213 entitled *Effects of Surface-Water Diversions on Habitat Availability for Native Macrofauna, Northeast Maui, Hawaii* provided information on East Maui Stream base flow in Table 8 on p. 41. This table is Exhibit E-69. Baseflow of lower Honomanu stream is listed in Table 8 as nine (9) cfs or 4.83 mgd.

68. The USGS report estimates that in the lower reaches of Honomanu restoration of fifty-percent (50%) of base flow or 2.36 mgd would restore the majority (ninety-percent) of habitat in that portion of the stream. From an "on the ground" perspective, this once mighty stream has been so dewatered in its upper reaches that restoring hydrological capacity in the lower section may not respond to a minimal formulaeic approach. Restoration of 3 mgd, or 64% of base flows would seem the prudent first step to take to return this public trust resource to the public benefits it once provided.

MAKAPIPI STREAM

69. Sierra Club hiking groups have visited stream, pool and waterfall areas along MAKAPIPI STREAM for educational and recreational hikes for many years, both before and after the 2010 CWRM decision to review the IIFS for this stream. We access MAKAPIPI STREAM fas part of our hikes along the Makapipi trail in Ko'olau District, as well as visiting the makai portion of the stream in the Lower Nahiku Community. See Exhibit E-56 for approximate locations of these hikes. Around half of the extensive length of MAKAPIPI STREAM is located on publicly owned land, while lower portions

flow through land owned by EMI/Alexander and Baldwin. Sierra Club hikers value the scenic and recreational attributes of MAKAPIPI STREAM and are concerned that these are being limited due to lack of adequate flow in the stream.

70. MAKAPIPI STREAM flow is diverted by EMI diversion works on both its East and West branches and the water directed into EMI's Ko'olau Ditch. On our hikes we observe the stream areas below the diversions are usually completely dry. This limits the public's ability to enjoy the beauty of views of downstream waterfalls and stream courses.

71. CWRM's 2009 Instream Flow Assessment Report ("IFSAR") for MAKAPIPI STREAM on p. 31 states that "Makapipi Stream is dry in the 0.7 mile reach between the Koolau Ditch to the stream gaging station (station 16507000)" and characterizes this section as "not perennial." The Makapipi IFSAR is presented as Exhibit E-68.

72. In my experience of hiking in the this area, I have seen tunnels and other diversion structures that tap water and bring it to the Ko'olau ditch. It is possible that these have intercepted water that was once captured by the Makapipi stream and interfered with the stream's natural recharge system below the diversion.

73. Makapipi stream area is a favorite place to take new Sierra Club hike leaders to show them many varieties of native plants that live in East Maui. We plan hikes on this trail to coincide with the blooming of the 'Ohi'a trees to enjoy the different colors. The native 'ie'ie plants, Hapu'u ferns, 'Olomea and koa trees, and many other varieties of native ferns, trees and plants are all found in this lush location. In the CWRM IFSAR Table 2-5 on p. 16 describes Makapipi as a place of nearly fifty percent (50%)

native forests, Fig 6-4 on p. 61 shows the extent density of rare and endangered plants in the Makapipi stream basin. It is also described in its upper reaches as part of the pristine Hanawi Natural Area Reserve System ("NARS".) These references are found in Exhibit E-68.

74. The upper reaches of Makapipi stream are critical habitat for rare and endangered native plants, birds and the rare endangered Megalagrion pacificum damselfly also lives there. Many native aquatic species have been observed in studies according to the 2009 IFSAR in MAKAPIPI STREAM. The 1990 HSA classified the aquatic resources as "outstanding." This is presented in Exhibit E-58.

75. The IFSAR concluded: "Since Makapipi Stream already has a diversity of native stream animals under diverted conditions, it has the potential to carry a full compliment of native stream fauna if allowed continous {sic} mauka to makai flow." See Exhibit E-68, 2009 Makapipi IFSAR, pp 42-43.

76. The local residents we meet while hiking in the MAKAPIPI STREAM area agree that the stream resources were naturally abundant, but have diminished over the years due to persistent lack of adequate streams flows. They speak of traveling further and further upstream to find any traditional foods to gather.

77. Our latest Sierra Club hike to this area, during a rainy period in August of this year (2014) found Makapipi stream makai of Hana Highway with a few stagnant ponds and no real flows. Some residents wonder if the promised flows of over half a million gallons a day set in May of 2010 were ever fully released. Our observations, on our Sierra Club hikes over the last few years, did not find evidence of additional flows below the Ko'olau diversion.

78. We are concerned about the extreme dewatering of Makapipi and the surrounding streams and springs. We are also concerned that the watershed itself, mostly public lands, is not being well managed along the ditch systems. We have seen the intrusion of more and more alien invasive plants, every year. Are these carried in by EMI ditch maintenance equipment? The care and management of of watersheds does not appear to be anyone's responsibility in Makapipi-Hanawi stream areas.

79. Photographs of Makapipi stream and surrounding areas from 2003-2011 Sierra Club hikes are included as Exhibit E-70 A-M. They illustrate the dewatered stream bed below the Ko'olau diversion (pre release); the numerous small diversion along the Ko'olau ditch draining the water away everyday, the native plants found along the trail to the diversion and the invasive plants that are being allowed to overtake the lands immediately surrounding the Ko'olau ditch. This is a snapshot of a valuable ecosystem that can still survive with the involvement of the Commission, DLNR, EMI and the community. But action must begin.

80. MAKAPIPI STREAM and the surrounding lands have outstanding recreational resources. Many Nahiku families live along the stream and play and gather food there. The coastal areas where MAKAPIPI stream discharges are popular community areas for fishing and gathering and the area is rich in cultural and historical resources. These were rated as "Outstanding" in the 1990 Hawaii Stream Assessment ("HSA") included n the Makapipi IFSAR in Table 5-1 on p. 50. See Exhibit E-68. This IFSAR also noted the abundance of aesthetic points of interest in Fig 7.1 diagram on p.63 of the IFSAR. See Exhibit E-68.

81. Sierra Club Members, the general public and local residents all appreciate the presence of the panoramic views, the historic Nahiku landing area and ocean vistas. The only detracting point in this picture is the usually dry state of Makapipi stream bed below the EMI diversion, except for a few disconnected pool areas.

82. I have observed many ancient kalo lo'i on lands along the Makapipi stream below Hana Highway. This stream once had the flows to support the growing of food to nourish the community and it deserves to have that chance again. The upper stream areas still showcase our native watershed plants and birds and are valuable for nature study as well as hunting, gathering and hiking.

Restoration Potentials

83. MAKAPIP{I STREAM has every characteristic that should be preserved and protected as part of our public trust. The majority of waters entering into the Ko'olau ditch originate on ceded lands that are held in trust for native Hawaiians. It has outstanding biological, recreational and cultural resources and is the lifeblood of Nahiku, an active traditional community. As Nahiku was the center of a serious dengue fever outbreak (2002), the health of the community depends upon the health of this stream. Stagnant pools along Makapipi stream do not reassure the community that the exposure to dengue will not return.

84. The community of Nahiku were the first to ask King Kalakaua to not grant water leases to the sugar growers. They were ignored then and told no harm would come and all would benefit. Their stream, Makapipi has gradually withered through a century of dewatering by EMI diversions. The IIFS of .66 mgd (660,000 gpd) set in May of 2010 is not sufficient to let this stream live. The Commission should end the diversion of

MAKAPIPI STREAM for the period of several years to allow the natural hydrology a chance to recover. No adequate work has been done to date to study the hydrology of the stream, but its dewatered state is not what kupuna of the area recall as its natural condition.

Conclusions:

85. Sierra Club Maui and its members have enjoyed the recreational, aesthetic and educational resources of many East Maui streams for over 30 years. As a Sierra Club hike leader since 1995 I have walked the ditch trails and explored the streams that many on Maui never see. I have guided hundreds of Sierra Club participants safely through the watersheds of East Maui on these same trails.

86. During this nearly twenty years I have observed the stream and watershed resources of East Maui gradually diminish through dewatering, lack of management and neglect. Aggressive alien species have been accidently introduced and not controlled. The size and vitality of stream pools and waterfalls has shrunk. Fewer and fewer streams have native streamlife and insects visible, and more and more have given up their banks to tangles of alien weeds. Ditch systems and facilities are deteriorating, leaking, overgrown and allow water to be wasted on its fifty (50) mile journey to the HC&S sugar cane fields.

87. I truly believe that I and our Sierra Club members are being harmed by the current policies that allow an extreme and unsustainable amount of water to be removed from the twenty-seven (27) East Maui streams that are the subject of this contested case.

88. We have been harmed, in summary, because the activities we hope to enjoy when visiting HANEHOI, PUOLUA, WAIKAMOI, HONOMANU, EAST AND WEST WAILUAIKI, WAIOHUE AND MAKAPIPI STREAMS and their tributaries are

greatly limited due to the highly dewatered conditions of these streams. The IIFS levels proposed by the Commission in May of 2010 did not provide enough flow for these streams to ensure that the protected instream uses of these waterways could be enjoyed by Sierra Club Maui members, native stream life, local residents or the general public.

89. Neither EMI nor those entities or persons who rely upon EMI for water will be harmed if the water we demand is supplied to these streams for reasons including but not limited to the following: (1) Our uses of these public trust resources are a protected use under the State Water Code and can not simply be ignored in favor of offstream uses; (2) these within watershed needs for water have not been satisfied under the current IIFS set in May, 2010; (3) EMI can satisfy its irrigation needs through other sources of water nearer to their agricultural fields, without having to depend as much on natural stream water; (4) EMI diverts, according to its own reports, on average, 160 mgd from East Maui Streams to satisfy out-of-watershed desires; given the comparatively limited nature of NHLC and MT interim demands compared to the total diversions, they are reasonable and must be met; (5) any right to divert by EMI on many of these streams is already subject to downstream riparian and appurtenant water rights of others, so that no harm needs to be demonstrated; and (6) other reasons to be demonstrated during the contested case or are true as a matter of law.

90. As an organization who seeks to regularly offer safe, recreational access and opportunities for nature study to these streams and watersheds, Sierra Club Maui is entitled to have public trust stream resources assets be available in a healthy state that provides for public trust uses protected under our State Water Code. This would include adequate water quality habitat for native stream species and the general public; adequate

water levels to maintain natural ecosystems and allow for nature study; adequate stream flows to allow aesthetic enjoyment of streams, waterfalls and pools; and adequate streamflows to allow the healthy enjoyment of recreational opportunities; all in accordance with the laws of the State of Hawaii.

91. The Lowrie ditch diversion works on Hanehoi, Huelo and Puolua streams and their tributaries and the New Haiku ditch diversion works on Hanehoi and Puolua streams; the Spreckels and Ko'olau ditch diversion works on Honomanu stream and its tributaries; the Koolau ditch diversion works on East and West Wailuaiki streams; and the Ko'olau ditch diversion works on East and West Waiohue Stream and Makapipi Sttream, must be modified to allow a more adequate flow of these streams to traverse mauka-makai and fully and adequately support the numerous public trust uses that Sierra Club Maui and the public are entitled to enjoy under Hawaii State laws.

I declare under penalty of law that the foregoing is true and correct.

Executed this 28 day of DECEMBER 2014

Name