

Report to the Twenty-Eighth Legislature  
2015 Regular Session

**IDENTIFICATION OF RIVERS AND STREAMS  
WORTHY OF PROTECTION**



Prepared by the

**Commission on Water Resource Management**  
Department of Land and Natural Resources  
State of Hawaii

Section 174C-31(c) (4), Hawaii Revised Statutes

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**REPORT TO THE TWENTY-EIGHTH LEGISLATURE**  
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**IDENTIFICATION OF RIVERS AND STREAMS WORTHY OF PROTECTION**

**I. INTRODUCTION**

The Hawaii Water Code, Hawaii Revised Statutes (“Haw. Rev. Stat.”), §174C-31(c) (4), directs the State Commission on Water Resource Management (“Commission”) to,

[i]dentify rivers or streams, or portions of a river or stream, which appropriately may be placed within a wild and scenic river system, to be preserved and protected as part of the public trust. For the purpose of this paragraph, the term 'wild and scenic rivers' means rivers or streams, or a portion of a river or stream, of high natural quality or that possess significant scenic value, including but not limited to, rivers or streams which are within the natural area reserves system. The Commission shall report its findings to the legislature twenty days prior to the convening of each regular legislative session.

This Report updates the Legislature on the Commission’s 2014 activities to implement this mandate.

**II. BACKGROUND**

In 1990, the Commission (in partnership with the National Park Service) prepared the Hawaii Stream Assessment. This 2-year project had two primary objectives: 1) Inventory Hawaii's perennial streams and their physical characteristics; and 2) Assess the aquatic, riparian, cultural, and recreational values of Hawaii's perennial streams. The secondary objectives were to: 1) Centralize stream-related data and reference sources in a database and bibliography; 2) Identify and prioritize areas where more information is needed; 3) Provide data to assist in making management decisions within a statewide context rather than on an ad hoc basis; 4) Develop general stream protection guidelines; and 5) Identify specific streams appropriate for protection and enhancement.

On August 22, 2000, the Hawaii Supreme Court issued its decision in *In Re Waiahole Ditch Contested Case Hearing*,” 94 Haw. 97, 9 P.3 409 (2000). In its decision, the Supreme Court emphasized that “instream 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.” 94 Haw. 97 (2000). Accordingly, the Commission has directed its efforts to develop a methodology for establishing instream flow standards, the identification of rivers and streams worthy of protection, and the implementation of Haw. Rev. Stat. §174C-31(c) (4).

In July 2002, pursuant to the Waiahole decision, the Commission established the Stream Protection and Management (“SPAM”) Branch (composed of the “Instream Use and Protection”

and the “Surface Water Regulation” sections). In July 2005, the SPAM Branch prepared a Program Implementation Plan to “[m]anage and Protect Hawaii’s Surface Water Resources through a Comprehensive Instream Use Protection Program and the Establishment of Instream Flow Standards.”

This Annual Report updates the activities, projects, and studies currently being carried out by the Commission’s SPAM Branch to develop and implement a statewide stream protection program. For work prior to 2014, please see previous year’s annual reports.

### **III. STREAM PROTECTION AND MANAGEMENT UPDATES**

#### **A. SPAM Branch:**

During 2014, the SPAM Branch continued to fill its vacancies. The Hydrologic Program Manager (Branch Chief) and Hydrologist IV positions were filled. The Hydrologist VI position is currently vacant and is being actively recruited. The Commission also received legislative approval to create two more positions in the SPAM Branch (a Planner and an Engineering Technician) to address the increasing workload of surface water issues. The two new positions are currently being established and recruitment is expected to begin in December 2014.

#### **B. Contested Case Hearing on Petitions to Amend the Interim Instream Flow Standards (“IIFS”) for the Honopou, Huelo (Puolua), Hanehoi, Waikamoi, Alo, Wahinepee, Puohokamoa, Haipuaena, Punalau/Kolea, Honomanu, Nuaailua, Piinaau, Palauhulu, Ohia (Waianu), Waiokamilo, Kualani (Hamau), Wailuanui, Waikani, West Wailuaiki, East Wailuaiki, Kopiliula, Puakaa, Waiohue, Paakea, Waiaaka, Kapaula, Hanawi, and Makapipi Streams, Maui, Hawaii**

On November 30, 2012, the Intermediate Court of Appeals (“ICA”) issued an opinion vacating the Commission’s May 25, 2010 decision and remanding the matter back to the Commission with instructions to: 1) Grant Na Moku Aupuni o Koolau Hui’s (“Na Moku”) Petition for Hearing; and 2) Conduct a contested case hearing pursuant to Haw. Rev. Stat. Chapter 91 and in accordance with state law. *In Re Petition to Amend Interim Instream Flow Standards for Waikamoi, Puohokamoa, Haipuaena, Punalau/Kolea, Honomanu, West Wailuaiki, East Wailuaiki, Kopiliula, Puakaa, Waiohue, Paakea, Kapaula and Hanawi Streams*, Intermediate Court of Appeals, Order No. CAAP-10-0000161 (November 30, 2012).

The Court concluded, inter alia, that the Commission erred in determining that 1) Na Moku had no right to a contested case hearing; and 2) there is no legal requirement to hold a contested case hearing on IIFS amendments. The Commission must now conduct a contested case hearing consistent with the Court’s decision and order.

On July 17, 2013, the Commission delegated to the Chairperson the authority to appoint a qualified Hearing's Officer to conduct the contested case hearing. Dr. Lawrence H. Miike was selected to serve as the Hearing's Officer.

On January 29, 2014, the Commission entered into a Contract for Professional Services with Lawrence H. Miike to serve as Hearings Officer for the Contested Case Hearing Regarding the Petitions to Amend Interim Instream Flow Standards for Waikamoi, Puohokamoa, Haipuaena, Punalau, Kolea, Honomanu, West Wailuaiki, East Wailuaiki, Kopiliula, Puakaa, Waiohue, Paakea, Kapaula and Hanawi Streams.

On June 30, 2014, the Hearings Officer held a Hearing on an Integrated Approach to Establishing Interim Instream Flow Standards for All 27 East Maui Streams which were the Subject of Na Moku's Petition. Upon reviewing the record, the Hearings Officer concluded that the Commission voted to take an integrative approach to establishing IIFS for all 27 streams by first addressing eight (8) of the twenty-seven (27) streams. Therefore, the contested case hearing on amended IIFS for East Maui (CCH-MA13-01) must now address all 27 streams and not just the thirteen streams named in the request for contested case. The Hearings Officer further concluded that the Intermediate Court of Appeals vacated the Commission's recommendation on the remaining 19 streams and ordered the Commission to hold hearings under the requirements of the Hawaii Administrative Procedures Act. Minute Order 7 (May 30, 2014)

On August 20, 2014, the Commission authorized, ordered, delegated, and directed the Hearings Office to conduct a contested case hearing on Petitions to Amend the Interim Instream Flow Standards for all twenty seven (27) Petitions and streams filed by Native Hawaiian Legal Corporation (representing Na Moku).

On November 13, 2014, a Standing Hearing was held on Maui for the purpose of determining the standing of three additional parties. The Hearings Officer determined that only one party had standing; however, the other two could provide testimony to the record. The contested case hearing is expected to begin in April 2015.

The Commission staff is continuing to work with East Maui Irrigation Co. (EMI) and the communities to monitor, and assess the IIFS established by the Commission. This includes regular quarterly trips to conduct streamflow measurements and download data from installed stream measurement devices.

**C. Na Wai Eha: 1) Iao Ground Water Management Area High-Level Source Water Use Permit Applications, and 2) Petition to Amend Interim Instream Flow Standards of Waihee, Waiehu, Iao, and Waikapu Streams Contested Case Hearing:**

In June 2010, the Commission issued its final Decision and Order ("D&O") setting IIFS for four West Maui streams – Waihee, Waiehu, Iao and Waikapu (collectively "Na Wai Eha"). The Commission's D&O was subsequently appealed. On August 15, 2012, the Supreme Court issued its decision. *In Re Iao Ground Water Management Area High-*

*Level Source Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihee, Waiehu, Iao, and Waikapu Streams Contested Case Hearing*, 128 Haw. 228, 287 P.3d 129 (August 15, 2012). The Court addressed four points of error:

1. The Court dismissed the Maui Department of Water Supply's cross-appeal on the grounds that it sought resolution of an abstract proposition of law.
2. The Commission failed to enter Findings of Fact and Conclusions of Law regarding the effects of its amended IIFS on traditional and customary Native Hawaiian practices.
3. The Commission failed to adequately justify its decision not to restore streamflow to the Iao and Waikapu Streams and the Commission's analysis regarding instream use was incomplete;
4. The Commission violated the Public Trust Doctrine in its treatment of diversions and erred in its:
  - a. Calculation of Hawaiian Commercial & Sugar Company's ("HC&S's") acreage;
  - b. Treatment of some of the diverters' system losses;
  - c. Consideration of HC&S's Well No. 7; and
  - d. Consideration of recycled wastewater.

The Court dismissed Maui Department of Water Supply's cross-appeal, vacated the Commission's June 10, 2010 Finding of Fact, Conclusions of Law, D&O, and remanded the remaining points to the Commission for further proceedings consistent with their opinion.

On May 22, 2013, the Commission delegated to the Chairperson the authority to appoint a qualified Hearing's Officer to conduct the contested case hearing. Dr. Lawrence H. Miike was selected to serve as the Hearing's Officer.

On September 24, 2013, Dr. Miike held a prehearing conference to set a briefing schedule for the hearing (on remand). The contested case hearing was scheduled to begin on Maui on March 10, 2014.

On March 10, 2014, the Commission issued a press release stating that the Na Wai Eha contested case hearing would be postponed to March 17, 2014. This was followed by another press release on March 17 stating that the contested case hearing would be postponed indefinitely to "allow the parties to meet and discuss potential avenues of settlement."

On April 21, 2014, the Commission issued a press release stating that the parties reached agreement in the Na Wai Eha contested case hearing. The Commission issued its Order adopting the Hearings Officer's Recommendations on the Mediated Agreement Between the Parties; and Stipulation regarding the Mediator's Report of Joint Proposed Findings of Fact, Conclusions of Law, Decision and Order ("D&O").

The D&O maintained the IIFS for Waihee River at 10 million gallons per day (“mgd”) per the Commission’s 2010 D&O.

The North Waiehu IIFS was changed to 1.0 mgd and relocated further downstream, while the South Waiehu Stream IIFS provides for diversion of 250,000 gallons per day by Hawaiian Commercial & Sugar Company with the remaining low flow being returned to the stream.

The IIFS for Iao Stream, just below upper diversion was set at 10 mgd, with provisions for lower streamflows that would allow Wailuku Water Company to continue to divert water that it provides to the County of Maui’s Department of Water Supply. At these lower flow conditions, the IIFS in Iao Stream would be reduced accordingly. An IIFS of 5 mgd was also established at or near the mouth of Iao Stream.

The IIFS for Waikapu Stream was set at 2.0 mgd below the South Waikapu Ditch Diversion.

For information on the Iao Ground Water Management Area High-Level Source Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihee, Waiehu, Iao, and Waikapu Streams Contested Case Hearing (CCH-MA-01), see Commission website: <http://dlnr.hawaii.gov/cwrm/newsevents/cch/cch-ma06-01/>.

#### **D. Na Wai Eha: Surface Water Use Permit Applications; and Appurtenant Rights (Maui)**

On September 27, 2011, the Commission adopted a procedure to determine appurtenant rights in the Na Wai Eha Surface Water Use Permit proceedings. The Commission issued a public notice on October 26, 2011 announcing the appurtenant rights determination process in the Na Wai Eha surface water management areas (Waihee, Waiehu, Iao and Waikapu Streams). The Commission outlined a two-step process for appurtenant rights determination: 1) determine whether there is an appurtenant water right associated with the parcel of land on which the water is being used or proposed to be used; 2) quantify the amount of water associated with that parcel as part of the surface water permitting process. Applicants for appurtenant water rights were given until February 6, 2012 to submit information in support of their claim.

On August 15, 2012, the Commission delegated authority to the Chairperson to appoint a Hearing’s Officer to handle the appurtenant rights claims. Dr. Lawrence H. Miike was selected to serve as the Hearing’s Officer.

On August 29 and September 5, 2012, the Commission published notice in the Maui News and the Honolulu Star Advertiser, describing how written objections to the appurtenant rights claims should be filed. With the second notice, any person or entity with a legal or material interest in the appurtenant rights claimed had the opportunity to submit written objections according to the following criteria: 1) documentation demonstrating that the parcel was not used as a residence or for cultivation at the time of

the Mahele; 2) documentation demonstrating that the appurtenant right has been reserved or extinguished; or 3) evidence suggesting there are materially false statements or representations in the application. Written objections were to be submitted by September 19, 2012. A total of 216 appurtenant rights claims were received.

On March 4 and March 11, 2013, the Commission published a second notice in the Maui News and the Honolulu Star Advertiser to include a number of claimants who submitted documentation after the initial deadline.

On August 6, 2013, the Commission issued a Notice to Applicants and Those Filing Objections in the Provisional Recognition of Appurtenant Rights for Na Wai Eha Surface Water Management Areas of Waihee, Waiehu, Iao and Waikapu Streams, to announce that a due process hearing would be held in Wailuku, Maui to receive and act on the Hearings Officer's Findings and Recommendations regarding the Provisional Recognition of Appurtenant Rights. The hearing was scheduled for August 30, 2013.

On August 21, 2013, the Commission formally determined that the provisional recognition of Appurtenant Rights in the Na Wai Eha Surface Water Management Areas of Waihee, Waiehu, Iao, and Waikapu Streams, Maui would be a contested case hearing. Accordingly, the due process hearing scheduled for August 30, 2013 was postponed indefinitely.

On October 24, 2013, the Commission continued the Public Hearing on Surface Water Use Permit Applications for procedural reasons for one year to October 23, 2014, 9:00 a.m. (Wailuku Community Center, Wailuku, Maui). The Public Hearing was deferred for one year in order to continue review of appurtenant water rights claims and objections and to await the outcome of the IIFS contested case hearing.

On September 25, 2014, the Commission issued a Notice to Applicants and Those Filing Objections in the Provisional Recognition of Appurtenant Rights for Na Wai Eha Surface Water Management Areas of Waihee, Waiehu, Iao and Waikapu Streams, to announce that a due process hearing would be held in Kahului, Maui to receive testimony on the Hearings Officer's Findings and Recommendations regarding the Provisional Recognition of Appurtenant Rights. The first hearing was held on October 14, 2014. The second hearing will be held on November 21, 2014, with a Decision on the Provisional Recognition of Appurtenant Rights expected in early 2015.

On October 23, 2014, the Commission continued the Public Hearing on Surface Water Use Permit Applications for procedural reasons for one year to October 14, 2015, 1:00 p.m. (Wailuku Community Center, Wailuku, Maui). The Public Hearing was deferred for one year in order to continue review of appurtenant water rights claims and objections and begin analysis of all surface water use permit applications.

For more information on the designation of the Na Wai Eha surface water hydrologic units and Surface Water Management Area, visit the Commission website at: <http://dlnr.hawaii.gov/cwrm/surfacewater/swma/nawaieha/>.

To view all Na Wai Eha water use permits applications for existing uses and related public notices, visit: <http://dlnr.hawaii.gov/cwrm/surfacewater/swma/nawaieha-swup/>.

To view all information, public notices, and claims for appurtenant rights in the Na Wai Eha area, visit: <http://dlnr.hawaii.gov/cwrm/surfacewater/swma/nawaieha-rights/>.

**E. Complaint for Dispute Resolution, Petition to Amend the Interim Instream Flow Standard, and Declaratory Order on Against Waste for Waimea River, Kauai**

On July 24, 2013, Po‘ai Wai Ola and West Kaua‘i Watershed Alliance, by their attorneys Earthjustice, filed: 1) a Complaint for Dispute Resolution; 2) a Petition to Amend Interim Instream flow Standard; and 3) a Complaint for Declaratory Order Against Waste in the Waimea River and its tributaries, Waimea, Hawaii.

Investigating entire river systems with complex historic diversions is not a simple undertaking. Due to current staff shortages and multiple contested case hearings on Maui, the Commission exercised its authority to appoint agents, including hearings officers and consultants necessary to carry out the purposes of the State Water Code. Hawaii Revised Statutes, §174C-5(8); Hawaii Administrative Rules (“HAR”) §13-167-3(13) and §13-167-23(d).

On August 21, 2013, the Commission delegated to the Chairperson the authority to appoint a qualified consultant to investigate the facts (including the situation on the ground) with regard to the Complaint and Petition. The consultant/investigator will be expected to: 1) research and assemble information currently available; 2) meet with relevant individuals and organizations to collect information pertaining to waste; 3) conduct site visits to investigate the water delivery systems, water use, and allegations of waste; 4) prepare a preliminary fact report describing the investigation and the facts; and 5) submit the fact report to the Commission for its consideration.

On June 6, 2014, the Commission entered in to a Contract for Professional Services with Element Environmental (“Consultant”) to conduct an investigation of the Kokee and Kekaha Irrigation Systems. Preliminary field investigations were conducted with Commission staff in July, with the Consultant beginning baseline data gathering in November. A site visit with the parties involved is expected to take place in early 2015.

More information will be made available on the Commission website as it becomes available.

**F. Kahana Stream Restoration Project, Oahu**

The Kahana Stream watershed is a large valley in the Koolau Loa District on the east side of Oahu. Kahana Stream (also known locally as Kahawainui Stream) drains the valley and is comprised of two primary tributaries, Kawa and Keaniani. Kahana Stream is one

of the largest perennial streams on Oahu (in terms of discharge) and ranks high among streams statewide for biological diversity, supporting a full complement of native freshwater fish, shrimp, and mollusk.

Hau clogs the Kahana Stream corridor and has significantly altered the stream ecosystem. The thick vegetation obstructs stream flow and reduces the open channel. The narrow stream forces floodwaters out of the banks onto adjacent areas, scouring the area, eroding secondary channels, and deepening the main channel. The invasion of hau physically changes the stream channel and water flow patterns, and negatively alters the migration patterns, habitats, and food sources of native aquatic organisms. The primary purpose of the Kahana Stream Restoration Project is to remove hau and improve access of migrating aquatic organisms and the ecological function of Kahana Stream by restoring appropriate water flow to the channel.

On August 21, 2013, the Commission authorized the Chairperson to enter into a Joint Funding Agreement with the U.S. Fish & Wildlife Service (“USFWS”) to restore approximately 7.5 acres along the riparian corridor of Kahana Stream by removing invasive hau and replanting native species. The Commission approved funding, not to exceed \$50,000, towards completion of the project. Project partners will provide an “in-kind match” of \$20,000.

On August 30, 2013, the Commission received notice that the USFWS had approved the Commission’s application for Federal financial assistance under the National Fish Passage Program in the amount of \$70,000.

Additional project partners include the community group Hōala ‘Āina Kūpono Corporation, and DLNR’s Division of State Parks, Division of Aquatic Resources, Engineering Division, Division of Forestry and Wildlife, and Office of Conservation and Coastal Lands.

The Commission staff has conducted several site visits and is working closely with the USFWS to develop a detailed work plan while identifying the necessary permits and regulations that will need to be addressed as part of the project.

More information will be made available on the Commission website as it becomes available.

**G. Low-Flow Characteristics for Streams in the Lahaina District of West Maui, Hawaii:**

On June 21, 2011, the Commission entered into a Joint Funding Agreement (“JFA”) with the U.S. Geological Survey (“USGS”) to conduct a low-flow study of the main streams in ten watersheds in the Lahaina District (Maui): Honolua, Honokahua, Kahana, Honokowai, Wahikuli, Kahoma, Kauaula, Launiupoko, Olowalu, and Ukumehame. The study initially arose from two petitions to establish amended interim IFS for Honokohau and Honolua Streams in Northwest Maui (August 2006 by Maui Pineapple Company,

Inc.). Later, the study area was expanded due to development pressures and changes in land use in West Maui.

Separately, the Department of Land and Natural Resources entered into a \$3 million cost share agreement with the United States Army Corps of Engineers (“USACE”) to develop a watershed plan in support of the West Maui “Ridge to Reef” Initiative. The Commission is one of several non-federal participating sponsors. The USGS study will supplement the watershed plan as the project areas partially overlap. The streamflow characteristics will support multiple facets of the USACE effort.

The USGS completed and published this study in June 2014 as USGS Scientific Investigations Report 2014-5087, *Low-Flow Characteristics of Streams in the Lahaina District, West Maui, Hawai‘i*. To download a copy of the report, see the USGS website at: <http://pubs.usgs.gov/sir/2014/5087/>.

## **H. Estimation of Low-Flow Characteristics for Streams in Hawaii**

On June 1, 2013, the Commission entered into a JFA (Phase 1) with the USGS to cooperatively study low-flow characteristics of streams in Hawaii. The objectives of the 7-year cooperative study (Phases 1 and 2) are to: 1) estimate selected natural low-flow duration discharges for streams with existing streamflow data at gaged sites; and 2) develop methods to estimate selected natural low-flow duration discharges at ungaged sites. The study will apply regionalization techniques to estimate low-flow duration discharges for streams at sites where streamflow data are limited or unavailable on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii. Low-flow conditions are characterized by low-flow duration discharges between the 50 and 95 percentiles. Flow duration discharges are the representative average flow characteristics for a specified period of time.

Phase 1 is a 2.5-year study (budgeted for \$350,000), that includes data compilation and the computation of low-flow duration discharges for gaged sites. In Phase 1, the USGS will: 1) Compile existing data from continuous record stream gaging stations, low-flow partial-record and miscellaneous discharges measurement sites; 2) Incorporate calculated duration discharges into StreamStats; 3) Explore different methods in developing regional regressions models for estimating low-flow characteristics at ungaged sites; and 4) Identify additional data needs. Other cooperators in Phase 1 include the Office of Hawaiian Affairs and the Department of Hawaiian Home Lands.

Phase 2 is a 4.5-year study (budgeted for \$2,000,000) that will include the development of regional regression equations for low-flow duration discharges at ungaged sites and the implementation of the web-based StreamStats application. In Phase 2, the USGS will: 1) Collect additional data; 2) Compute low-flow duration discharges at new sites; 3) Identify and quantify relevant basin characteristics; 4) Incorporate new data and relevant basin characteristics into StreamStats; 5) Identify regions and develop regressions equations for each; and 6) Implement StreamStats for ungaged locations.

Characterization of low-flow conditions is essential for the Commission to set instream flow standards and ultimately manage competing instream and non-instream uses. Calculating and understanding water availability is also important to protect and support public interest objectives, including but not limited to aquatic biota, freshwater ecosystems, traditional and customary Hawaiian rights, recreation, municipal and agriculture water use.

Incorporating calculated duration discharges from gaged sites and regional regression equations into the tool, StreamStats, will allow for a comprehensive estimate of surface water throughout the state of Hawaii. StreamStats is a web-based geographic information system (“GIS”) interactive tool that allows users to easily obtain streamflow statistics and basin characteristics for user-selected sites along streams. This tool is efficient and accurate in estimating streamflow statistics. A study by Rosa and Oki (2010) used StreamStats to estimate the magnitude of peak discharges at ungaged sites on unregulated streams. This same web-based application will be used to estimate low-flow duration discharges throughout Hawaii. Overall, Hawaii StreamStats for low-flow conditions is an important tool that is more cost-effective and computationally efficient than current site specific low-flow studies currently being undertaken for instream flow standards.

The Commission staff is coordinating with the USGS to begin identifying potential funding partners to initiate Phase 2 of this study.

For more information on the USGS Low-Flow Regionalization of Streams in Hawaii Study, see the USGS website at: <http://hi.water.usgs.gov/studies/lowflow1/>.

## **I. USGS Cooperative Agreement:**

In 1909, the USGS and the Territory (now State) of Hawaii officially began a cooperative agreement to gage Hawaii streams (and measure Hawaii’s groundwater). Since 1909, over 140 (37%) of Hawaii’s 376 perennial streams have been gaged. However, there has been a steady decline in the number of monitored streams and thus the amount of data available to water resource managers.

Although the nature of the Agreement and relationship of the parties remains the same as the previous year’s Agreement, the total number of stream gauging stations has increased from 25 to 26. For Federal Fiscal Year (FFY) 2015, the total cost of the agreement will not exceed \$717,381. The Commission’s share will not exceed \$444,700 (See Table 1).

To support the recent Division of Forestry and Wildlife (“DOFAW”) *Rain Follows the Forest* initiative, the Commission will fund a continuous-record streamflow gage on the Moanalua Stream in the recently acquired Moanalua Valley State Forest Reserve. The data gathered from this gage will help DOFAW evaluate the impact of their watershed restoration efforts.

The Waiahole Trust Fund continues to defray the cost of monitoring the Waiahole Ditch system and its sources. At the request of DOFAW, the South Fork Kaukonahua Stream

gage on the island of Oahu has been added to assess the effectiveness of watershed restoration efforts.

At USGS’s request, the Mt. Waialeale rain gage was added on Kauai. The cost will be offset by partial funding from the USGS National Streamflow Information Program for the West Wailuaiki Stream gage on the island of Maui (See Table 2).

**Table 1. Summary of annual changes in funding requirements for the USGS Cooperative Agreement.**

<b>COST</b>	<b>FFY 2013</b>	<b>FFY 2014</b>	<b>FFY 2015</b>
Total Joint Funding Requirement	\$699,760	\$702,650	<b>\$717,381</b>
Expected CWRM cost-share	\$417,650	\$433,2180	<b>\$444,700</b>
Percentage CWRM cost-share	59%	62%	<b>62%</b>
DOFAW Watershed Management Grant	\$0	\$0	<b>\$0</b>
Waiahole Ditch Monitoring Fund	\$39,850	\$41,650	<b>\$41,650</b>
Ground water well continuous monitoring	\$6,090	\$7,230	<b>\$7,015</b>
Rain gage continuous recording	\$9,670	\$9,670	<b>\$9,370</b>
Continuous recording stream gage	\$20,150	\$20,090	<b>\$20,900</b>

**Table 2. Summary of annual changes in the number of gages from Federal FY 2010 to 2014.**

<b>GAGING STATION TYPE</b>	<b>FFY 2011</b>	<b>FFY 2012</b>	<b>FFY 2013</b>	<b>FFY 2014</b>	<b>FFY 2015</b>
No. of continuous stream gages	28	27	28	25	<b>26</b>
No. of wells (ground water levels and water quality)	20	18	18	14	<b>14</b>
No. of rain gages	14	14	14	15	<b>16</b>

Long-term stream data is vital for the long-term monitoring of streamflow trends, assessing resource availability and the impacts of climate change, flood analysis in the construction of roads and housing developments, assessment of water quality criteria, and other environmental concerns. Continued support for the USGS Cooperative Agreement is critically important, not only towards the Commission’s responsibility of water resource protection and management, but for the health and safety of the general public. The Commission staff continues to confer with the USGS on a regular basis to review and evaluate a comprehensive statewide ground and surface water monitoring program.

Real-time and historical data for groundwater (wells) and surface water (streams) are available from the USGS Pacific Islands Water Science Center website at: <http://hi.water.usgs.gov/>.

#### **IV. CONCLUSION**

The Commission's ongoing efforts (described in this Report) are consistent with the Supreme Court's directives and will provide information to support and carry out a comprehensive stream protection and management program statewide. As water resource data is developed, evaluated, and made available, it will be incorporated into the Hawaii Water Plan and into the Commission's decision making on an ongoing basis.

The efforts described above are all critical to developing IFS. They will improve the Commission's overall management of surface water resources. This work substantially increases the Commission's surface water data collection and monitoring program and facilitates scientific, agency, and public input on stream-related issues.