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IDENTIFICATION OF RIVERS AND STREAMS WORTHY OF PROTECTION

INTRODUCTION

Section 174C-31, Hawaii Revised Statutes (HRS), of the State Water Code (Water Code), reads, in pertinent part:

"Identify 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 to the Legislature provides an update on the current activities of the Department of Land and Natural Resources' (DLNR) Commission on Water Resource Management (Commission) to implement the provisions of Section 174C-31, HRS.

BACKGROUND

Initial efforts undertaken by the Commission, in response to the legislative directive to list streams of high natural quality, involved a joint project with the National Park Service to prepare the Hawaii Stream Assessment (HSA), a two-year project with 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. Secondary objectives of HSA included: 1) Centralizing stream-related data and reference sources in a database and bibliography; 2) Identifying and prioritizing areas where more information is needed; 3) Providing data to assist in making management decisions within a statewide context rather than on an ad hoc basis; 4) Developing general stream protection guidelines; and 5) Identifying specific streams appropriate for protection and enhancement.

Completion of the HSA Report in 1990 led to the development of a preliminary database, and supporting references and files that continue to serve as the cornerstone of the Commission's long-term Stream Management Program. Other activities undertaken since the initial preparation of the HSA Report include: 1) Convening of a stream protection and management (SPAM) task force, and 2) Completion of the Commission's Multi-Attribute Prioritization of Streams (MAPS) project summarized in the Commission's 1999 Annual Report to the Legislature. This 2008 Annual Report summarizes the recent accomplishments and on-going activities currently being

carried out by the Commission's SPAM Branch to develop and implement a statewide stream protection program.

SPAM BRANCH

In 1990, the HSA made the recommendation to “dedicate a Commission staff position specifically and exclusively to conservation.” The SPAM Task Force, in 1994, recommended that “general fund monies are needed for additional permanent staff positions for streams for: (d) a streamkeeper with a conservation point of view.” A surface water hydrologist was hired in March 2002, to specifically address the issues of furthering the stream protection and management goals of the Commission.

On August 22, 2000, the Hawaii Supreme Court (Supreme Court) released its ruling on the appeal of the Waiahole Ditch Decision and Order. In their 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.” It is under this interpretation of the Water Code that the Commission has directed its efforts to develop a methodology for establishing instream flow standards, to ultimately identify rivers and streams worthy of protection and implement the provisions of Section 174C-31, HRS.

In line with the Supreme Court decision, the Commission established the SPAM Branch in July 2002. The SPAM Branch is comprised of the Instream Use and Protection Section and the Surface Water Regulation Section. The duties of the Instream Use and Protection Section, which focus on the implementation of Section 174C-31, HRS, include, but are not limited to, the following:

- Administers the statewide Instream Use and Protection Program in cooperation with federal, state and county agencies.
- Prepares and enforces instream flow standards to protect instream water uses.
- Prepares interim IFS, pending the establishment of permanent standards.
- Inventories stream systems, assesses their resource values, recommends stream protection policies, and develops a stream management plan for Commission adoption and use.
- Protects watersheds, streams, and wetlands from degradation.

On July 27, 2005, the Commission was presented with the first draft of the SPAM Implementation Plan (Plan). The Plan is a critical step in laying out the foundational elements to guide the SPAM Program towards proactively addressing IFS statewide and improving the overall management of Hawaii's surface water resources. This sentiment is highlighted in the Plan within the SPAM Program's mission statement:

“Manage and Protect Hawaii’s Surface Water Resources through a Comprehensive Instream Use Protection Program and the Establishment of Instream Flow Standards.”

Under this mission, the Commission has strived to provide consistency and transparency in addressing the complexity of issues before it. The Commission is involved with numerous activities throughout the State, all of which will contribute to the Commission’s efforts in compiling best available information. This information will supplement the development of measurable IFS statewide. The various studies and projects the Commission is involved with will help to identify data gaps and address specific informational requirements. Listed below are the recent accomplishments and current activities of the SPAM Branch.

CURRENT ACTIVITIES

Interim Instream Flow Standard (interim IFS) for East Maui: On September 24-25, 2008, the Commission held its monthly meeting at the Haiku Community Center on Maui to hear recommendations on eight east Maui Interim IFS petitions for: Honopou; Hanehoi and Puolua (Huelo); Piinaau; Palauhulu; Kualani; Waikani; and East and West Wailuanui. The petitions applied to streams contained within five surface water hydrologic units as defined by the Commission.

In May 2001, Native Hawaiian Legal Corporation (NHLC), on behalf of Na Moku Aupuni O Koolau Hui (Na Moku), Beatrice Kepani Kekahuna, Marjorie Wallett, and Elizabeth Lehua Lapenia¹, filed the 27 Petitions to Amend the Interim IFS for 27 East Maui streams.

On July 23, 2001, NHLC met with Commission staff to discuss the handling of the 27 petitions. Agreement was reached that efforts would focus on Honopou, Hanehoi, Waiokamilo, Kualani, Piinaau, Palauhulu, and Wailuanui Streams. Subsequent efforts by the Commission to adopt surface water hydrologic units for the purpose of improving surface water resource management resulted in the grouping of streams into the five subject hydrologic units. The Water Code provides that the Commission may adopt interim IFS on a stream-by-stream basis or a general IFS applicable to all streams within a specified area.

Over the past several years, starting with the establishment of the SPAM Branch in July 2002, the Commission has been developing a framework for setting measurable IFS statewide. The process applied to the five hydrologic units under consideration, if deemed appropriate and acceptable by the Commission, would then serve as a model framework for not only the remaining 19 petitions for East Maui streams, but for streams statewide.

On December 13, 2006, the Commission authorized staff to initiate and conduct public fact gathering to solicit more information than what the Water Code requires for the setting of an

¹ The Commission was notified by letter on May 10, 2007, that NHLC “no longer represent Ms. Lapenia and are, therefore, no longer authorized to advance the claim with respect to the parcel identified as TMK: 2-9-008:31 or LCAw-S-1 Claimant: Nao on her behalf.”

interim IFS. Under this adopted process, staff conducted a preliminary inventory of best available information upon receipt of a petition to amend an existing interim IFS. Staff then sought agency review and comments on the compiled information (compiled in an Instream Flow Standard Assessment Report) in conjunction with issuing a public notice for a public fact gathering meeting. Shortly thereafter (generally within 30 days), staff conducted the public fact gathering meeting on April 10, 2008 at the Haiku Community Center, Maui.

The final products of the public review process and the supporting documentation for the proposed interim IFS were Instream Flow Standard Assessment Reports (IFSAR) for each of the five surface water hydrologic units under consideration.

- *Instream Flow Standard Assessment Report, Island of Maui, Hydrologic Unit 6034, Honopou, September 2008, PR-2008-01*
- *Instream Flow Standard Assessment Report, Island of Maui, Hydrologic Unit 6037, Hanehoi, September 2008, PR-2008-02*
- *Instream Flow Standard Assessment Report, Island of Maui, Hydrologic Unit 6053, Piinaau, September 2008, PR-2008-03*
- *Instream Flow Standard Assessment Report, Island of Maui, Hydrologic Unit 6055, Waiokamilo, September 2008, PR-2008-04*
- *Instream Flow Standard Assessment Report, Island of Maui, Hydrologic Unit 6056, Wailuanui, September 2008, PR-2008-05*

In addition, the Commission produced a supporting document containing all the oral and written comments that were submitted as part of the initial public review process.

- *Compilation of Public Review Comments (CPRC), Hydrologic Units of Honopou (6034), Hanehoi (6037), Piinaau (6053), Waiokamilo (6055), Wailuanui (6056), Island of Maui, September 2008, PR-2008-07 (CPRC).*

The application of this process in compiling the best available information, conducting a public fact gathering meeting, and developing a recommendation based on the balanced needs of all instream and noninstream uses is a considerable departure from prior water resource management schemes in Hawaii. In Waihole, the Commission recognized the purpose of maintaining status quo conditions as they would prevent future harm to streams, while providing for more scientifically-based IFS to be developed and an overall stream protection program to be established. The recommended interim IFS values represent a significant shift in thinking from the status quo interim IFS flows which did not appear to consider any ecological, social, or economic values, to a system which seeks to assess and balance all competing needs of instream and noninstream uses.

In response to this new paradigm of stream protection and management, the Commission embraced the basic tenets of adaptive management, which are to: 1) Establish management objectives; 2) Implement management decisions; 3) Monitor effectiveness of decisions; 4) Evaluate results of management; and 5) Revise management decisions as necessary². Should initial management decisions need further amendment, the decisions can then be revised and the process repeated over. This is learning process that can be repeated over and over, until a sound management decision is reached. Due to the complex and dynamic nature of Hawaii's stream

² Adapted from The Instream Flow Council, 2004, p.126.

systems, adaptive management affords the Commission the ability to proceed in making reasonable management decisions and ensuring that impacts are minimized in the face of uncertainty, thus allowing staff to proceed responsibly while advancing the clear intentions of the Water Code.

At the conclusion of a two-day public meeting, which included staff presentations, public testimony, and Commission deliberations, the Commission unanimously approved the recommended interim IFS values. The measurable interim IFS values are the first such minimum flow standards that have been established by the Commission outside of a contested case hearing or other legal proceeding. As noted earlier, the decision also represents a significant shift in thinking in response to challenges of active stream diversions which have been in place for over 100 years. In most cases, existing diversions take most, if not all streamflow, allowing only excess water or downstream gains to reach water users below the East Maui Irrigation System intakes. The decision declared the amount of water that must be flowing past a specified point on the stream channel year round, making available more water to downstream domestic users, taro farmers, stream biota, and other beneficial instream uses.

The Commission's approval was essential in validating a process of addressing instream flows statewide. However, the Commission's work is just beginning as the application of the approved adaptive management strategies commences. Commission staff will conduct periodic field investigations, subject to available funding, over the next year to monitor and evaluate the implementation of the adopted interim IFS. The Commission staff will also begin preparing the IFSARs in consideration of the remaining 19 East Maui petitions.

For more information on the Petitions to Amend the Interim IFS for 27 Streams in East Maui, to view the staff submittal addressing the prioritized eight hydrologic units, or to download any one of the IFSARs, please visit the Commission website at:

- http://hawaii.gov/dlnr/cwrm/currentissues_Petition27EastMaui.htm

Designation of the Na Wai Eha Surface Water Hydrologic Units as a Surface Water Management Area: In December 2006, Earthjustice, on behalf of its clients Hui O Na Wai Eha and Maui Tomorrow Foundation, Inc., filed a petition to designate the Na Wai Eha Surface Water Hydrologic Units as a surface water management area. The Commission held a public hearing, conducted an investigation, produced a Findings of Fact Report, and consulted with the County of Maui Mayor, Maui County Council, and Department of Water Supply, regarding the proposed designation.

The Commission designated the Na Wai Eha Surface Water Hydrologic Units (Waihee, Waiehu, Iao, and Waikapu) as Surface Water Management Areas on March 13, 2008. Any person who is making, or who proposes to make a withdrawal, diversion, impoundment, or consumptive use of surface water in the designated area must apply for a water use permit (WUP) from the Commission. However, no WUP shall be required for domestic consumption (use of water for personal needs and for household purposes) of surface water by individual users, for users on any County of Maui Department of Water Supply water system, and for the use of rain catchment systems to gather water. An application for a permit to continue an existing use of surface water must be made within a period of one year from the effective date of

designation, that is, between April 30, 2008 (the date the public notice of designation was published) and no later than April 30, 2009.

Similar to the interim IFS approved for the five surface water hydrologic units in East Maui, the designation of the four hydrologic units in Central Maui as surface water management areas was a first for the Commission. The regulation of surface waters in Na Wai Eha will have statewide implications and will serve as an important model for the implementation of water use reporting and the balancing of instream uses with noninstream uses and water rights.

Central Maui (Na Wai Eha) Stream Study: In June 2006, the Commission entered into a cooperative agreement with United States Geological Survey (USGS) to conduct a multi-phase study to assess hydrological and biological conditions of Waihee River and Waiehu, Iao, and Waikapu Streams. The Commission will use the Study's findings to address in part the petition to amend the interim IFS and a waste complaint concerning water diverted from these streams, both filed by Earthjustice in June 2004, on behalf of Hui o Na Wai Eha and Maui Tomorrow Foundation, Inc. This 3.5-year Study is being undertaken as a cooperative project between USGS, the Commission, the County of Maui, and the Office of Hawaiian Affairs. The Study will assess the following: 1) Streamflow characteristics in the study area and an assessment of the effects of surface water diversion on streamflow; 2) Effects of diversions on potential recharge from the streams to the underlying Iao and Waihee Aquifers; 3) Temperature variations of instream flows above and below diversions; 4) The native fauna present in the streams under current diverted conditions; and 5) Effects of selected diversion scenarios on habitat availability.

The initial phase of the Study, conducted during federal Fiscal Year (FY) 2006, included compilation and analysis of existing information, baseline reconnaissance surveys, establishment of monitoring sites, and preliminary data collection. The second (Phase 2) and third (Phase 3) years of the Study will include: 1) Establishing additional low-flow partial record stations; 2) Establishing additional temperature-monitoring sites; 3) Continued monitoring of the frequency of dry days in the diverted streams; 4) Surveying the abundances of native stream fauna in selected study reaches; 5) Collecting macrohabitat, microhabitat, and channel-geometry information in selected study reaches downstream from existing diversions; and 6) Analyzing data and producing a report summarizing the Study findings. As part of the Study, USGS has also convened an aquatic biology working group consisting of the Commission, DLNR's Division of Aquatic Resources (DAR), Department of Health's Environmental Planning Office (DOH-EPO), the County of Maui Department of Water Supply, University of Hawaii, Michigan State University, and Bishop Museum. The objective of the working group is to develop a coordinated study approach that appropriately addresses native stream fauna. In addition, working group participants such as DAR and DOH-EPO have agreed to conduct complimentary studies and/or surveys to strengthen the overall study parameters.

USGS held a Na Wai Eha Stakeholders meeting on Maui in October 2007 to present initial data collected from their field efforts. The Study is in its third year and data collection is nearly complete. The analysis phase has been initiated. In coordination with USGS, scientists from Michigan State University have been collecting data on stream macrofauna through 2007, while DAR has recently conducted standardized point-quadrat longitudinal surveys of the four

streams (Note: Some fieldwork by DAR in Na Wai Eha was postponed due to a reallocation of staff and resources in the prioritization of the five east Maui hydrologic units).

For more information on the Central Maui (Na Wai Eha) Stream Study, please visit the USGS website at:

- http://hi.water.usgs.gov/studies/project_nawaieha.htm

Statewide Stream Diversion Study: The 2006 Legislature, by way of Act 160, appropriated to the Commission, the sum of \$650,000 for the purpose of conducting statewide field investigations to verify and inventory surface water uses and stream diversions, and update existing surface water information. This is one of the key requisite steps toward the establishing of IFS statewide.

The Commission contracted R.M. Towill Corporation (Consultant) and the Stream Diversion Study (Study) commenced in March 2007. The Study is expected to be completed within 24 to 36 months. The project schedule for completion will be subject to weather and site accessibility.

The Commission has prioritized the Study into the following Priority Areas: 1) Priority 1 Areas, which have pending petitions to establish IFS; 2) Priority 2 Areas, which have agricultural irrigations systems studied in the Agricultural Water Use and Development Plan (AWUDP) component of the Hawaii Water Plan; 3) Priority 3 Areas, which have unstudied agricultural systems; and 4) Priority 4 Areas, which include any remaining diversions not yet surveyed and/or those that necessitate additional investigation.

The field investigations include: 1) Conducting research to determine declared surface water uses, diversions, owners, locations, and current condition of existing diversion structures; 2) Development and implementation of a standardized field investigation methodology; 3) Mobilization and traversing stream reaches to existing stream diversion locations; 4) Determination of Global Positioning System (GPS) derived locations of each surface water diversion in terms of latitude and longitude coordinates and tax map key numbers, all plotted on tax maps and USGS quadrangle maps; 5) Documentation of each surface water diversion through field inspection, photographs, and system/structure descriptions; 6) A written descriptive summary identifying the withdrawal capacity of the stream diversion, the time, manner, and quantity of taking, the user of the water from the source, and the nature of the water use; and 7) Identification and description of the size and/or capacity of any infrastructure, such as pipes or ditches used to transport the water from the source to the area of use, and any other information that may be useful in the establishment of IFS.

Based on the prioritization, the Consultant began conducting field investigations across Maui and has since been completed. Efforts are now being focused on Kauai. Preliminary data from Maui revealed that a considerable number of non-registered diversions existed and were also inventoried in the field. As a result, the unexpected costs of verifying additional diversions discovered in the field may limit the final extent of the Study. It is anticipated that a survey of the Island of Hawaii will not be completed. The Commission staff is working cooperatively with Kamehameha Schools and the Honolulu Board of Water Supply (BWS) in conducting specific

investigations to help alleviate costs. As such, the Commission is developing a plan to commence field investigations on Oahu. As the project nears completion, the Commission is very appreciative of the public's continued cooperation in carrying out this Study.

Statewide Stream Channel Condition Inventory: Recognizing the importance and continuing need for stream information, DLNR included as part of its Fiscal Biennium 2007-2009 budget request, funding to undertake regional stream studies in support of establishing IFS. The Commission appropriated \$200,000 to conducting a Statewide Stream Channel Condition Inventory (Inventory).

The Inventory will require the identification and documentation of existing stream channel alterations statewide. The Inventory would include, but not be limited to, Geographic Information System (GIS)-derived locations of: (1) Channelizations; (2) Retaining walls; (3) Dams; (4) In-stream reservoirs; (5) Bridges; (6) Culvert crossings; (7) Ford crossings; (8) Access ramps; and (9) Flood-prevention structures. The condition of the stream channel, whether natural or modified, is an important component in assessing the instream uses for a given stream system. Streams provide habitat for native fishes which require unimpeded access to the ocean as part of their diadromous life cycle. Loss of natural stream channels often indicates a reduction in riparian and wetland habitat, accompanied by a reduction of recreational opportunities and aesthetic values. However, stream channel modifications are often necessary to protect property, prevent flooding, store water, and to provide access to otherwise inaccessible areas. These components are necessary considerations in the development of IFS.

The Commission contracted PBR Hawaii & Associates, Inc. (Consultant) and the Inventory commenced in June 2008. The Inventory is expected to be completed within 12 to 24 months. A project kick-off meeting was held in early July 2008 and the Consultant is currently conducting background research. The project schedule for completion may change based on the background research and the extent of field investigation required as a result. Fieldwork will be subject to weather and site accessibility.

Assessment of Methods for Measuring Diverted Streamflow: Following on the designation of the four surface water hydrologic units (Waihee, Waiehu, Iao, and Waikapu) of Na Wai Eha, Maui, the Commission will require water use permits for stream diversions and withdrawal of stream water. Uses in existence at the time of designation of an area as a water management area are subject to permitting; existing users have one year from the effective date of designation to apply for a permit. Conditions of a permit for existing uses may include measurement of flow.

The Commission contracted Element Environmental, LLC. (Consultant) and the Assessment of Methods for Measuring Diverted Streamflow (Assessment) commenced in August 2008. The Assessment is expected to be completed within 11 months. A project kick-off meeting was held in mid September 2008 and the Consultant is currently conducting background research and data collection. The project does include a fieldwork component that will be subject to weather and site accessibility.

This Assessment calls for identification and documentation of different methods of measuring the volume of diverted streamflow (i.e. the amount of water being diverted offstream, not the amount of water in the stream). Some methods will only apply to certain types of diversions. Methods would include continuous flow measurements and point-in-time measurements. Measurement devices include, but are not limited to: bucket-and-stopwatch, weirs, flumes, submerged orifices, current meters, acoustic flow meters, other open-channel devices, and other closed-conduit devices.

The Assessment will include, but is not limited to: 1) Description of measurement methodology; 2) Accuracy range; 3) Description and diagram or photo of measuring device; 4) Type(s) of diversion structure / conduit for which the device might be used; 5) Range of flow rates; 6) Entity for whom method is most suited (e.g. government, farmer); 7) Approximate costs; 8) Construction, installation, operating, and maintenance requirements; and 9) Life expectancy of measuring devices for Hawaii's environment.

Punaluu Watershed Alliance: The Punaluu Watershed Alliance (Alliance), comprised of the Punaluu Community Association, Kamehameha Schools, BWS, USGS, and the Commission, was formed to provide better information for setting IFS, build community participation, and provide opportunities for student education. The members of the Alliance met in 2002 and decided to put a petition to designate the Ahupuaa of Punaluu as a surface water management area "on hold" in favor of setting up the Alliance to resolve issues among the interested parties. A memorandum of understanding for establishing the Alliance was formally entered into on October 19, 2005.

In September 2006, USGS completed a Punaluu Stream study, entitled *Effects of Surface-Water Diversion and Ground-Water Withdrawal on Streamflow and Habitat, Punaluu Stream, Oahu, Hawaii*, which was cooperatively funded by USGS, BWS, and Kamehameha Schools. The objectives of the Study were to: 1) Assess the effects of ground water withdrawals on streamflow; 2) Assess the effects of existing diversions on streamflow; 3) Characterize the effects of diversions on instream temperatures; and 4) Estimate the effects of streamflow restoration on aquatic habitats. An additional survey, funded by BWS, to identify and assess all components of the Punaluu Water System, has also been completed. The report was released in May 2007 and provides a comprehensive overview of stream diversion locations and end uses for the entire Punaluu Watershed.

Commission staff continues to meet regularly with the Alliance to discuss community needs and concerns, in addition to coordinating efforts to address instream flow standards.

Lalakea Alternative Mitigation Project: The Lalakea Alternative Mitigation Project (LAMP) is the product of an alternative settlement agreement with Kamehameha Schools. In February 2002, the Commission ordered Kamehameha Schools to develop an alternative mitigation project in lieu of a fine of \$453,000. The resulting LAMP is a cooperative effort between Kamehameha Schools and Bishop Museum, with oversight by the Commission. The primary objective of LAMP is to conduct baseline studies on the streams diverted by the Lalakea Ditch System prior to restoring flows to the streams. Upon restoration of stream flows, studies continued for a period of time to determine how the streams were affected by the restoration of

flows. The scientific portion of the LAMP involved scientists from Bishop Museum, DAR, USGS Biological Resources Division, University of Hawaii, Smithsonian Institute, Louisiana State University, and the University of Nebraska-Lincoln. Study areas included: 1) Aquatic macroalgae monitoring; 2) Stream invertebrate assessment; 3) Native and alien fish monitoring and parasite assessment; 4) GIS stream habitat mapping; and 5) Streamflow/water quality monitoring. A secondary objective of the LAMP is community participation and education involving the local community in the vicinity of the Lalakea Ditch System.

The last educational and research field trip took place in June 2006. Bishop Museum has been conducting further data analysis and is preparing a final project report. The Commission is still awaiting the submission of a final report.

USGS COOPERATIVE AGREEMENT

The cooperative agreement between USGS and the State officially began in 1909 when USGS entered into an agreement with the Territory of Hawaii. At first, only 12 streams were being gaged continuously. By 1914, there were 87 continuous-record stations. The program continued to grow, reaching its peak in 1966 when 197 gages were operational under the agreement. Over the years, some gages were discontinued for a variety of reasons, which include shifting fiscal priority, changing economic landscape, completed data acquisition objectives, and dwindling partnership engagement in monitoring and data collection. Over 140 (37%) of the 376 perennial streams in Hawaii have been gaged since the inception of the cooperative program. However, the steady decline of the number of monitored streams has diminished the ability of water resource managers to understand and appropriately manage the State's surface waters.

The current agreement now includes ground water data collection, which began in 1972 to gather baseline data throughout the State starting with 170 wells. Beginning in 1998, the Commission streamlined the cooperative agreement by transferring the crest-stage stream-gaging program to civil defense agencies where these data (e.g. flooding issues) are more relevant, and by eliminating duplication of ground water data collection efforts in wells. Meanwhile, governmental and private water system purveyors were notified to provide water-level data to the Commission as required by law. DLNR's Division of Forestry and Wildlife's (DOFAW) Watershed Management Grant Program (WMGP) funded the operation of 16 gaging stations on Watershed Partnership Lands in FY 2008. Currently, DOFAW through its Watershed Partnerships Program sharply cut down its support to gaging operations in watershed management areas, reducing the number of gages to four in FY 2009 and disengaging the watershed partnerships in the outyears from Commission and USGS efforts in monitoring the watershed areas' water resources.

Current Agreement: Although the nature of the agreement and the relationship of the parties involved are basically unchanged, the fiscal situation of the FY 2009 agreement is conspicuously different from the FY 2008 cooperative agreement. The USGS operational costs have increased by approximately 10%, while the cost-share of USGS and DOFAW WMGP has

decreased. The table below summarizes the annual changes in funding requirements for this cooperative agreement.

COST	FY2007	FY2008	FY2009
Total Joint Funding Requirement	\$851,143	\$919,800	\$816,334
Expected CWRM cost-share	\$459,085	\$526,600	\$504,000
Percentage CWRM cost-share	54%	57%	60%
DOFAW Watershed Management Grant	\$132,000	\$118,175	\$48,896
Ground water well continuous monitoring	\$4,950	\$5,400	\$5,730
Rain gage continuous recording	\$6,600	\$7,200	\$9,168
Continuous recording stream gage	\$16,500	\$18,000	\$19,100

The Commission's share of the cooperative program will not exceed \$410,000 in general and supplementary funds under the Department's LNR 404 Water Resources Program. In addition to general funds, the DOFAW grant of \$48,896 and Waiahole Trust Fund will be used to cost-share the maintenance of gages and monitoring of water resources in the watershed management areas and Waiahole Ditch System coverage, respectively.

Under the Joint Funding Cooperative Agreement for Federal FY 2009, USGS collects basic hydrologic data and conducts area resource investigations. However, the change in the budget scenario has corresponding implication in the number of gaging stations that can be sustained in FY 2009 data collection program. Thus, the USGS proposal for the continuation of the Cooperative Agreement Program to FY 2009 highlighted the reduction in the number of gages in which nineteen monitoring sites in FY 2008 Cooperative Agreement had to be discontinued for the current agreement. The table below highlights the reduction in gages from FY 2004 to FY 2009 (in bold).

GAGING STATION TYPE	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
No. of continuous stream gages	39	25	25	32	32	27
No. of wells (ground water levels and water quality)	71	70	56	31	34	26
No. of rain gages	25	21	21	22	21	18

Long-term stream data is vital for flood analysis in the construction of roads and housing developments, assessment of water quality criteria and dam safety, and the long-term monitoring of streamflow trends, erosion, 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 USGS on a regular basis to review and evaluate a comprehensive statewide ground and surface water monitoring program. The Commission is committed to remain vigilant to identify duplication of efforts, assess relevance of data collection, and prioritize the need for monitoring information in a geographical area.

OTHER STREAM-RELATED ACTIONS

Waiahole Ditch Contested Case Hearing: On August 22, 2000, the Supreme Court released its first ruling on the appeal of the Waiahole Ditch Decision and Order issued by the Commission on December 24, 1997. The Supreme Court remanded seven issues to the Commission for additional findings and conclusions, with further hearings if necessary. The first two of the seven issues addressed interim IFS for Windward Oahu streams.

On December 28, 2001, the Commission issued its LEGAL FRAMEWORK, FINDINGS OF FACT, AND DECISION AND ORDER (D&O II). The D&O II amended the Interim IFS for four Windward Oahu streams, based on the best information presently available, as directed by the Supreme Court's August 22, 2000 ruling (Supreme Court's Ruling).

On June 21, 2004, the Supreme Court released its second ruling, In the Matter of Water Use Permit Applications, Petitions for Interim Instream Flow Standard Amendments, and Petitions for Water Reservations for the Waiahole Ditch Combined Contested Case Hearing, NO. 24873, APPEAL FROM THE COMMISSION ON WATER RESOURCE MANAGEMENT (CASE NO. CCH-OA95-1). The Supreme Court vacated in part the Commission's D&O II and remanded for further findings and conclusions regarding: (1) The designation of an Interim IFS for Windward streams; (2) The 2.2 mgd of unpermitted water; (3) The practicability of Campbell Estate and Puu Makakilo, Inc. using alternative ground water sources; (4) The actual needs of Fields Nos. 115, 116, and 145 (Jefts); (5) The actual needs of 229 acres in Field Nos. 146 and 166 (Garst Seeds); and (6) Agribusiness Development Corporation's permit for systems losses.

In August 2004, the Commission delegated the conduct of the second remand to a hearing officer. The remand proceedings before the hearing officer began and concluded on April 5, 2005. Closing oral arguments before the hearing officer were held on June 22, 2005. Proposed Findings of Fact, Conclusions of Law, and Decisions and Orders were submitted on June 29, 2005. The Hearing Officer's Proposed Findings of Fact, Conclusions of Law, and Decision and Order were issued to the parties on September 6, 2005. The parties in the case had the opportunity to file written exceptions to the Hearing Officer's Proposed Findings of Fact, Conclusions of Law, and Decision and Order, by October 7, 2005. The Commission heard oral arguments on the written exceptions on November 16, 2005. The Commission issued its Findings of Fact, Conclusions of Law, and Decision and Order (D&O III) on July 13, 2006. On August 11, 2006, three of the parties in the contested case hearing filed two Notices of Appeal. The matter is currently under review by the intermediate appellate court.

Iao Ground Water Management Area High-Level Source Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihee, Waiehu, Iao, & Waikapu Streams Contested Case Hearing: In June 2004, Earthjustice, on behalf of its clients Hui O Na Wai Eha and Maui Tomorrow Foundation, Inc., filed a petition to amend the Interim IFS for Waihee, North and South Waiehu, Iao, and Waikapu Streams (Na Wai Eha). In May 2006, the Commission notified the affected parties that the petition to amend the Interim IFS for Na Wai Eha would be combined with the Iao High-Level Ground Water Use Permit Applications. In June 2006, standing was granted to Hui O Na Wai Eha/Maui Tomorrow Foundation, Office of

Hawaiian Affairs, County of Maui Department of Water Supply, Wailuku Water Company, LLC, and Hawaiian Commercial & Sugar Company. The contested case hearing began on December 3, 2007 on Maui. After 23 days of hearings, closing arguments were held on March 4, 2008. The parties were scheduled to submit their proposed findings-of-fact, conclusions of law, and decisions and orders (proposed findings-of-fact) on September 26, 2008. However, there was a motion to reopen evidence and a hearing on the motion was held on August 21, 2008. The motion was granted and the hearing date set for October 14, 2008. The September 26, 2008 deadline for the proposed findings-of-fact was vacated.

CONCLUSION

The ongoing efforts identified in this report are consistent with the Supreme Court's directives and will provide needed information in support of the Commission's implementation of a comprehensive stream protection and management program statewide. Refined assessments of available water resources, as they are developed based upon ongoing and new data collection, will be appropriately incorporated in future updates of the Hawaii Water Plan.

As noted, all of the above efforts are critical to developing IFS and will lead to improving the Commission's overall management of surface water resources, enhancing the Commission's current surface water data collection and monitoring program, and facilitating needed discussion and agency/public input regarding stream-related issues.