



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
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STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

May 20, 2015
Kailua-Kona, Hawaii

Requesting Authority for the Chairperson to Enter Into a Contract to
Conduct Water Audit and Water Loss Control Training for Selected Drinking Water Utilities Statewide

SUMMARY OF REQUEST:

The staff of the Commission on Water Resource Management (Commission) requests authorization for the Chairperson to enter into a training services contract to train selected public drinking water utility personnel in water audit and water loss control methods; and to expend up to \$100,000 for this purpose.

BACKGROUND:

In February 2013, the Commission completed its Hawaii Water Conservation Plan, which recommended a suite of water conservation program elements. These were grouped by major water use sectors: municipal, agriculture, military, and golf course. The plan established a 10-year implementation schedule and policy actions to improve water use efficiency in all water use sectors. The Hawaii Water Conservation Plan is under Chapter 7, Resource Conservation and Augmentation of the Water Resource Protection Plan, 2008 of the Hawaii Water Plan.

While the Hawaii Water Conservation Plan offers a menu of water conservation program elements, the Commission staff recommended two priority actions for the near-term: (1) an irrigation metering demonstration project for agriculture; and (2) procedures for conducting and requiring annual water loss audit of public water systems. The Commission approved these program measures at its March 20, 2013 meeting.

SUMMARY OF IMPLEMENTATION ACTIONS TO DATE:

Surface Water Irrigation Metering Demonstration Project

The Commission partnered with the U.S. Geological Survey (USGS) to complete surface water measurement and reporting training workshops across the state from October-December 2014. Staff worked with USGS and other partners to find suitable irrigation systems and agricultural operations with owners willing to host the workshops. Workshop participants were given classroom training on the theory and methods of open channel flow measurement and Commission reporting requirements. Participants were also given hands-on training using instruments to measure open channel flows in working irrigation ditch systems.

Invitations were sent to 31 individuals representing 25 agricultural irrigation systems or operators on Kauai, Oahu, Maui, and Hawaii Island. A total of 67 individuals representing 29 organizations attended the workshops and is summarized in the following Table 1.

Table 1. Irrigation/Surface Water Measurement Workshop Attendance

Workshop	Invitations Sent	Individuals Attended	Systems Represented	Other Organizations	Evaluations Returned
Oahu	6	9	4	1	n/a
Hawaii	6	11	3	3	n/a
Maui	8	23	5	1	14
Kauai	11	24	8	4	13
TOTAL	31	67	20	9	27

Commission staff is following up with the irrigation measurement workshop participants to facilitate the measurement of surface water diversions and submission of monthly water use reports from the large irrigation systems across the state. This will improve the water use reporting compliance of these systems.

Procedures for Conducting and Requiring Annual Water Loss Audit

The Commission partnered with Hawaii Rural Water Association to complete water audit and loss control training on Kauai, Oahu, Maui and Hawaii Island in April 2014 for drinking water systems. Participants were trained on the International Water Works (IWA) / American Water Works Association (AWWA) methods for water audit and water loss control, including the use of the AWWA water audit software. Water audits are not currently a regulatory requirement of drinking water utilities but are recommended as a best practice for these utilities. Training classes were held on Kauai, Oahu, Maui and East and West Hawaii Island. Invitations were sent to all 69 public water system owner/operators. The following Table 2 summarizes this effort:

Table 2. Water Audit and Loss Control Workshop Attendance

Workshop	Registered	Attendance	PWS Represented	Organizations Represented	Evaluations Returned
Maui	7	7	3	3	5
Oahu	20	18	4	8	17
Kauai	7	9	2	2	5
West Hawaii	8	8	4	6	8
East Hawaii	12	9	3	5	5
TOTAL	54	51	16	24	40

Most of the post-workshop evaluations were positive and attendees indicated that the workshops were worthwhile and interesting. We also learned from our discussions that some of the workshop attendees would initiate water audits as a result of the workshop.

ADDITIONAL WATER AUDIT TRAINING NEEDED:

The water audit training in April 2014 provided training to personnel representing 16 of 69 public drinking water systems across the state of Hawaii. It is unclear why the training was not well attended, but this is an ongoing opportunity to solicit participation from the public drinking water systems that did not attend the earlier workshops.

In the future, staff may recommend that the Commission require mandatory water audits for public water systems across the state. Based on experiential examples from other states such as California and Georgia, mandatory water audits in Hawaii would not be appropriate at this time. Staff has learned that in order to have meaningful water audit results and outcomes, there must be a system in place for training, technical assistance outreach, and evaluation of water audit results, which includes compliance with monthly water use reporting from sources as required under the Commission's §13-168-7 Hawaii Administrative Rules. Training is the first step to induce the water utility industry to adopt water audits. Staff has begun to outline a program to facilitate universal water audits in Hawaii.

In order to take a more focused training approach, Commission staff consulted with staff from the Hawaii Department of Health Safe Drinking Water Branch, the Department of Commerce and Consumer Affairs Consumer Advocate Division, and the Public Utilities Commission (PUC) and decided to engage the 19 public drinking water system utilities that are regulated by the PUC. The reason for this is that these regulated utilities would have a need to conduct water system audits in order to substantiate future cases before the PUC for water rate increases, hence providing an incentive for the regulated utilities' participation.

Water audit and loss control programs are proven best management practices that can quantify a water utility's water losses, recover revenue, and help to reduce real water losses throughout its system. This project would further the implementation of the Hawaii Water Conservation Plan. By focusing on a small group of PUC-regulated public water systems, staff anticipates positive outcomes – with these systems demonstrating reduced water losses. Successful results of local water system audits can influence the remainder of Hawaii's public water systems to voluntarily adopt water audit and loss control programs as best management practices. This project provides the seed training to help initiate this practice.

In order to measure project effectiveness, staff will follow-up with the participating water utilities to track and monitor annual water audit results, actions taken to improve data validation, and any water loss intervention practices implemented.

SCOPE OF SERVICES:

A specialized water audit training services consultant will be utilized to complete the water audit and water loss control training for selected public water systems, subject to funding and public water system participation. These are the main project objectives:

1. Conduct training workshops on the IWA/AWWA methods of water audits and loss control (on Kauai, Oahu, Maui, Molokai, Lanai and Hawaii Island) for pre-identified public water systems;
2. Follow-up remote technical assistance with the participating public water systems – telephone and e-mail correspondence – to assist them in completing water audit; and
3. Conduct site inspections with each of the participating public water systems to ascertain validation of audit results, inspect water audit input elements – meters, billing databases, etc., and recommend water loss intervention measures.

Note: Commission staff will conduct post-project consultation with participating public water systems to determine training effectiveness and actions taken to reduce system water losses.

AUTHORITY:

Under its general powers and duties, the Commission has the authority to plan and coordinate programs for the conservation of water and to contract with private persons to assist with these programs.

§174C-5 (4), Hawaii Revised Statutes (HRS): *(the commission) May contract and cooperate with the various agencies of the federal government and with state and local administrative and governmental agencies or private persons;*

§174C-5 (13), HRS: *(the commission) Shall plan and coordinate programs for the development, conservation, protection, control, and regulation of water resources based upon the best available information, and in cooperation with federal agencies, other state agencies, county or other local governmental organizations and other public and private agencies created for the utilization and conservation of water;*

ENVIRONMENTAL REVIEW CHAPTER 343, HAWAII REVISED STATUTES:

Under §343-5(a), HRS, an Environmental Assessment (EA) is triggered with the use of state funds but may be declared exempt from the process if falling into certain exempted classes of action. The proposed action (training services) is exempt from an EA, falling under exempt classes of action 5 and 10.

§11 -200-8(a)(5), Hawaii Administrative Rules (HAR): *Basic data collection, research, experimental management and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource;*

§11 -200-8(a)(10), HAR: *Continuing administrative activities including, but not limited to purchase of supplies and personnel-related actions.*

FUNDING:

Staff estimates that up to \$100,000 in funding may be needed to complete the water audit and loss control training described above. Funds will be provided through the Commission's general fund, special fund, or a combination of both, subject to available funding balances.

RECOMMENDATIONS:

Staff recommends that the Commission:

1. Authorize the Chairperson to enter into a training services contract to aid in the training of selected public drinking water utility personnel in water audit and water loss control methods; and to expend up to \$100,000 for this purpose.
2. Authorize the Chairperson to amend or modify the contract as may be necessary to accomplish the goals described here, provided that any amendment or modification does not require additional Commission funding.
3. Find and determine that the proposed work is exempt from the requirement to prepare an EA.

The terms of the contract would be subject to the availability of funding and approval of the Chairperson and the Department's Deputy Attorney General. Contract execution will be done in accordance with HRS Chapter 103D and Hawaii Administrative Rules, Chapter 3-122.

Respectfully submitted,



W. ROY HARDY
Acting Deputy Director

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE
Chairperson