

July 24, 2013

**REPORT TO THE GOVERNOR ON
THE EFFECTIVENESS OF THE CAPACITY DEVELOPMENT STRATEGIC PLAN TO
IMPROVE PUBLIC WATER SYSTEMS IN THE STATE OF HAWAII**

The capacity development provisions in the Federal Safe Drinking Water Act (SDWA) mandate a report to the Governor every three years. This report addresses the efficacy of the strategy and the progress made towards improving the technical, managerial, and financial (TMF) capacity of public water systems in the State. The first three capacity development reports to the Governor were provided on July 31, 2001; July 21, 2004; July 17, 2007; and July 21, 2010; respectively. This report covers the period July 1, 2010 through June 30, 2013. Subsequent reports will continue to be submitted every third state fiscal year in the month of July.

Executive Summary

During the recent economic downturn, the importance of evaluating and enforcing the technical, managerial and financial (TMF) capacity of new water system developments has never been clearer. Nearly one dozen such projects on Kauai, Maui and the Big Island are currently under construction or in operation as regulated public water systems, and because of capacity evaluation, have been able to weather the burdensome flurry of federal drinking water regulations promulgated in the last 10 years; the shortage of qualified operators in the state; and the state's depressed economy. Specific examples include the emergence of the circuit rider program to assist small systems with capacity, and extended outreach by SDWB staff to assist systems with regulatory compliance through presentations and sanitary surveys. Coordination with the Hawaii Rural Water Association (HRWA) in the last five (5) years has significantly increased training opportunities for operators. Overall, the capacity of water systems in Hawaii is assessed as satisfactory based on high compliance rates for monitoring and quality of finished water.

History of the Capacity Development Program

The Safe Drinking Water Branch (SDWB) in the Department of Health (DOH), Environmental Management Division, has primacy responsibility to implement the Federal SDWA requirements in Hawaii. The capacity development regulations in the SDWA introduced the following new terms into the drinking water regulations:

Capacity means the overall capability of a water system to consistently produce and deliver water meeting all national and state primary drinking water regulations in effect, or likely to be in effect, when new or modified operations begin. Capacity includes the technical, managerial, and financial capacities of the water system to plan for, achieve, and maintain compliance with applicable national and state primary drinking water regulations.

Technical capacity refers to the physical infrastructure of the water system, including but not limited to the adequacy of the water source(s), treatment, storage, and distribution systems; and the ability of the water system personnel

to adequately operate and maintain the system; and to otherwise implement technical knowledge.

Managerial capacity refers to the ability of the water system to manage itself, including clear ownership, organization, communications, and accountability; adequate management, staffing, policies, training and information management; and effective relationships with customers, and regulatory agencies.

Financial capacity refers to the financial resources of the water system, including an adequate budget, adequate fiscal controls, and credit worthiness.

The capacity development provisions in the SDWA require the following:

- The States are to implement regulations that new water systems starting operations after October 1, 2000 must demonstrate adequate TMF capacity;
- The States must create and implement a strategic plan to improve the TMF capacity of existing public water systems; and
- The EPA Administrator is required to withhold twenty percent (20%) of each capitalization grant made under the Drinking Water State Revolving Fund (DWSRF) to a State, unless the State has met the capacity requirements of the SDWA.

The TMF capacity attributes for Hawaii were developed with a stakeholder group which included the American Water Works Association Hawaii Section, Maui Land and Pineapple Company, West Hawaii Water Company, Hawaii Association of Realtors, Rural Community Assistance Corporation, Campbell Estates, and American Savings Bank. Comments from County and privately-owned public water systems and the public were also solicited. The TMF capacity attributes were codified in the Hawaii Administrative Rules (HAR), Title 11, Chapter 20, entitled "Rules Relating to Potable Water Systems" in 1999. As of November 28, 2011, HAR, Chapter 11-20 is now entitled "Rules Relating to Public Water Systems."

1. STATE REGULATIONS FOR NEW WATER SYSTEMS TO DEMONSTRATE TMF CAPACITY

- a. In 1999, the DOH revised the HAR, Chapter 11-20, entitled "Rules Relating to Public Water Systems," to require new water systems to demonstrate adequate TMF capacity before authorization is granted for a new water system to begin operation.
 - (1) Prior to starting work on the new water system's infrastructure (excluding wells), the new water system must: (a) first obtain a satisfactory review by the DOH that the proposed raw water source can be approved as a new potable water source; (b) obtain DOH approval on the new water system construction plans; and (c)

demonstrate that pre-construction TMF capacity attributes have been met.

(2) After the new water system's infrastructure is constructed, the water system must: (a) obtain DOH approval to use the raw water source for potable water service; (b) provide a licensed professional engineer's certification that the water system has been constructed in accordance with the approved plans and specifications; and (c) demonstrate that all TMF capacity attributes are met. After satisfactorily meeting the requirements in (a), (b) and (c), DOH approval to operate the new water system is granted.

b. To assist in developers demonstrating TMF capacity for their project, developers may incorporate into the covenants for their project that ownership of the water system will be transferred to the community association, and that the association will:

(1) Contract a private water system operations company to manage and operate (includes providing certified operators) the new water system; and

(2) Contract with a private financial management company to bill customers, collect the money owed, pay the water system's bills, and provide the financial records for the water system.

The developer must also demonstrate that the financial structure of the water system will generate sufficient funds to maintain and operate the water system, provide for end-of-life replacement of components, and perform emergency repairs as needed.

c. EFFICACY OF THE NEW REGULATIONS

The West Kuiaha Meadows, Maunaolu Plantations, Maui Highlands, Peahi Farms, Consolidated Baseyards, and Ukumehame subdivisions on Maui and the Kukio Bay and Hawaiian Ocean View Estates subdivisions on Hawaii started water systems under the new capacity regulations and the water systems are operating satisfactorily.

The following projects on Maui and Kauai are also creating their own water systems and are currently under construction:

- Omaopio Ridge;
- Pulehu Farms/Kula `I`o Subdivision;
- Kealanani Subdivision;
- Kahu`aina Plantations Subdivision; and
- Maui Business Park – Phase II Subdivision

The State's TMF capacity regulations are considered satisfactory on the basis that: (1) the State's TMF capacity regulations were evaluated as

satisfactory by the EPA; (2) all capitalization grants made to Hawaii under the DWSRF program were full funded; and (3) responsible developments can continue.

2. STATE STRATEGIC PLAN TO IMPROVE THE CAPACITY OF EXISTING WATER SYSTEMS

The SDWA capacity regulations require States to develop a strategic plan to identify and prioritize the existing public water systems most in need of assistance and to provide assistance to those systems as needed. However, the SDWA capacity regulations do not provide States with the authority to mandate that deficient water systems take actions to improve their TMF capacity.

a. The State's strategic capacity improvement plan incorporated the following actions during the first three (3) years:

- (1) Identified the five public water systems that are most in need of improvement in the State and provided assistance to improve the TMF capacity of these water systems. The SDWB personnel identified the five (5) water systems most in need of improvement in the State as:

Kauai – Gay & Robinson

Oahu – Dillingham Ranch (formerly known as Mokuleia Land Company)

Maui – Hana Water Company

Molokai – Kualapuu

Hawaii – Hawaiian Shores

The SDWB provided assistance to improve capacity to these systems through a two year contract paid by the DWSRF set-aside grant from the EPA. The provided assistance started in July 2001 and the assistance did result in a gradual improvement in performance over the two (2) years, which continued after the contract ended. These systems are considered satisfactory at this time.

This one-time effort to address those water systems most in need of improvement indicated that improvements to water system performance can be realized through gradual changes over time. In October 2004, the SDWB instituted a Circuit Rider Program to have an experienced water system operator go to the water systems and provide hands-on assistance to the operators and managers as needed. This program replaced the specific assistance to five (5) water systems most in need of improvement and is explained in more detail in the following sections of this report.

- (2) Provided training to certify public water system distribution system operators. The SDWA requires States to certify all public water system distribution system operators. To obtain certification in Hawaii, the distribution system operators need to pass a written examination prepared and graded by the Association of Boards of Certification (ABC), an independent and nationally recognized organization used by most states for the certification of operators.

In 1999, the SDWB administered a contract to provide statewide training to prepare the distribution system operators for the certification examination. A non-profit contractor provided the training at no cost to the operators, and initially, 280 operators (75%) passed the certification examinations on the first try. The training contract was funded by the DWSRF set-aside grant funds from the EPA. The one-time training contract resulted in almost all water systems in the State reaching the goal of having certified distribution operators (four (4) water systems out of 131 systems did not attain the goal).

At present, all water systems have certified distribution system and water treatment plant operators of the appropriate grade and there are 524 certified distribution system operators and 218 certified water treatment plant operators in the State. The total number of certified operators fluctuates as new operators are certified and other operators retire and allow their certifications to lapse.

In FY2009-FY2011 and FY2013, the SDWB has worked with HRWA to provide free state-wide training in certification examination preparation. The trainings concentrate on topics, which operators have historically performed poorly. Overall pass rates improve when the free training is provided. A 10-30% drop in pass rates is noted without the preparation courses.

- (3) Providing a three-year continuing education training program for water system operators to improve knowledge levels and provide continuing education credits. The State regulations require water treatment plant and distribution system operators to re-certify every two (2) years by obtaining continuing education credits (CEUs). In May 2001, the SDWB initiated a continuing education training program over a three-year period through a contract paid for by DWSRF set-aside funds from the EPA. This program provided low cost continuing education training courses on all islands. This training contract expired on June 30, 2004 and was replaced by a self-sustaining training program administered by the University of Hawaii's Outreach College, EPA grant funded classes provided by the HRWA and a self-sustaining training program administered by HRWA as explained below.

b. The strategic capacity improvement plan was revised in 2004 to include the following:

- (1) Provide a self-sustaining training program for water system operators. In 2003, the SDWB approached the University of Hawaii's Outreach College on whether a long-term self-sustaining operator training program could be developed for operators on all islands. The University agreed to provide the continuing education training for operators and in 2004, through an EPA grant, began developing and implementing a self-sustaining water system operator training program.

The University's Outreach College encountered problems with having to offer courses only during the summer when University facilities are available and tuition charges were higher than the subsidized courses offered in the past. Consequently, operator attendance was below expected levels.

As a response to the low operator attendance, all of the County water systems agreed to begin coordinating their own in-house training needs with the University. The County water systems also offered the use of their training rooms at no cost, which allowed the University to offer courses at any time during the year. The DOH offices on Oahu, Maui, Hawaii, and Kauai also offered to provide their conference rooms to the Outreach College at no cost.

The self-sustaining operator training program succeeded through FY2008 with the support from the County water systems. In 2008, the HRWA began providing water system operator training classes at no cost to the operators, which led to low operator attendance at the fee-based Outreach College's classes. In 2009, the Outreach College's operator training classes were discontinued. HRWA continued to offer operator training classes at no cost on Kauai, Oahu, Maui, Molokai and the Island of Hawaii through September 2011.

In 2012, the SDWB contracted with HRWA to develop a self-sustaining operator training program. Through an EPA grant, the SDWB is subsidizing the course fees until a self-sustaining fee can be reached in the third year of the program. HRWA is soliciting feedback from all interested parties on course content, duration, fees, and presentations to modify the program as necessary to ensure its longevity. A self-sustaining program is periodically jeopardized by free or low-cost training offered by national and local organizations through one (1) year EPA grants and other sources of funding.

- (2) Circuit Rider Program. In October 2004, the State instituted a Circuit Rider Program to provide hands-on technical, managerial, and financial capacity assistance to the water system operators and managers. This program is used by several states on the mainland with excellent results in improving water system performance, and thereby improving the water system's TMF capacity. The Circuit Rider Program identifies the TMF problems noted at the systems and provides training and hands-on assistance to resolve problems. The circuit rider's function is to train the managers and operators and not do the work for them.

The Circuit Rider Program resulted in significant operational improvements in the Hawaiian Beaches, Puuwaawaa, Hawaiian Shores, and Wood Valley water systems on Hawaii; the Hana Water Resources, Hana Water Company, West Kuiaha Meadows, Mahanalua Nui, and Olowalu water systems on Maui; Kawela Plantation and Hoolehua water systems on Molokai; St. Stephen's Diocesan Center, Poamoho and Hawaii Country Club water systems on Oahu; and the Lanai City and Manele Bay water systems on Lanai.

In October 2006, the SDWB revised the Circuit Rider Program to expand the program to provide assistance to all small public water systems serving 10,000 or less people in the State, which includes privately-owned, State, County and Federal (national parks and military) water systems. The original contract limited the circuit riders to only private water systems serving 3,300 people or less. The Circuit Rider Program is paid by the DWSRF set-aside grant funds for small water systems.

On September 30, 2009, the original five-year Circuit Rider Program came to its conclusion. Based on the positive results the Circuit Rider Program has generated, the SDWB issued another contract to continue the program for an additional five (5) years from October 1, 2009 through September 30, 2014.

The Circuit Riders continue to meet with water systems to identify TMF capacity issues and provide hands-on assistance to resolve the issues.

- (3) Sanitary survey program. The SDWB's sanitary survey program periodically inspects all water systems in the State for pathways where insects, rain run-off water, or other contaminants can affect the safety of the drinking water. The sanitary surveys are a key part of assuring that the water systems maintain adequate technical capacity.

Sanitary surveys are conducted once every three (3) to five (5) years and the SDWB's goal is to conduct at least 27 sanitary surveys yearly. Once again, the SDWB sanitary survey program is on-schedule this year.

During each sanitary survey, the SDWB staff also evaluates the TMF capacity of the water system to identify those systems, whose performance may have deteriorated and are now in need of attention. Any water system deemed in need of attention is encouraged to utilize the Circuit Rider Program to improve TMF capacity.

c. EFFICACY OF THE STATE STRATEGIC PLAN

- (1) Implementing a self-sustaining water system operator training program on all islands. The HRWA is developing a self-sustaining operator training program through an EPA grant. Through an EPA grant, the SDWB is subsidizing the course fees until a self-sustaining fee can be reached in the third year of the program. HRWA is soliciting feedback from all interested parties on course content, duration, fees, and presentations to modify the program as necessary to ensure its longevity. A self-sustaining program is periodically jeopardized by free or low-cost training offered by national and local organizations through one (1) year EPA grants and other sources of funding. The SDWB believes that the HRWA can flexibly increase or decrease training opportunities and can succeed as a self-sustaining operator training program.
- (2) Circuit Rider Program. The Circuit Rider Program improved performance of water systems using the services offered by the circuit riders. Expanding the program to also reach County, State and Federal small water systems resulted in a gradual improvement in small water system performance statewide in the area of technical, managerial, and financial capacity. The goal for the Circuit Rider Program is to meet with every small water system in the State during calendar year 2013.
- (3) Sanitary survey program. The sanitary survey program has been strengthened by the EPA's 2006 promulgation of the Ground Water Rule, which has a provision that pathways, which can contaminate the potable water identified during sanitary surveys, are labeled as significant deficiencies. The Groundwater Rule requires water systems to correct significant deficiencies or be faced with a SDWA violation and appropriate fines. In the past, the SDWB could only offer recommendations, which were not enforceable.

The SDWB expects to implement the Groundwater Rule in the

HAR, Chapter 11-20, entitled “Rules Relating to Public Water Systems” during calendar year 2013.

- (4) Overall, the capacity of water systems in Hawaii are assessed as satisfactory based on the following:
- Compliance with microbiological monitoring requirements. All water systems in Hawaii are currently in compliance with the microbiological monitoring requirements.
 - Compliance with chemical monitoring requirements. 132 out of 133 (99%) of the water systems in Hawaii are currently in compliance with chemical monitoring requirements.
 - Compliance with lead and copper regulations. 131 out of 133 (98%) of the water systems in Hawaii are currently in compliance with the lead and copper regulations.
 - Compliance with surface water regulations. All surface water systems in Hawaii are in compliance with surface water regulations.
 - Compliance with community reporting requirements. 112 out of 113 (99%) of the water systems in Hawaii are in compliance with the community reporting requirements for water systems to provide customers with an annual report on the quality of drinking water.
 - Certified operator regulations. All water systems in Hawaii have certified distribution and water treatment plant operators as required by regulations.
 - Sanitary survey program. The sanitary survey program is satisfactory. Due to a shortage of engineers in the SDWB and as a result of the furloughs, the SDWB contracted an engineering firm (Oceanit Laboratories, Inc.) to conduct the sanitary surveys of the Honolulu-Windward-Pearl Harbor and Waipahu-Ewa-Waianae water systems in 2010 and 2011 and the North Kona and South Kona water systems in 2012. The sanitary survey program is currently up-to-date with EPA targets for frequency of sanitary survey performance.
 - Compliance orders. There are no active compliance orders against any public water system in the State.

d. IMPROVEMENT AREAS

- (1) Small water system management attitudes. There is still reluctance by some small privately-owned water systems managers to

improve the capacity of their water systems. The managers have the prevailing attitudes that since there are no compliance orders against their water systems; they do not want to spend the time and money on improvements. There are also water systems that refuse to take advantage of the free assistance to improve performance provided by the Circuit Rider Program. The SDWB will continue to stress the advantages of the Circuit Rider Program and the need for improvements in water system performance with appropriate managers during sanitary surveys. In addition, the New Mexico Environmental Finance Center will be providing water system management classes on Asset Management, Energy Management, Water Loss and Rates and Finance in July and August 2013. The SDWB will research options to provide additional training for water system managers.

- (2) Provide low-interest DWSRF loans to water systems. The SDWA includes a Drinking Water State Revolving Fund (DWSRF) program to assist public water systems in improving or upgrading their facilities by providing low-interest loans. This program is administered by the DOH Environmental Management Division's SDWB and the Wastewater Branch. The DWSRF program needs to continue to improve in its ability to provide loans in a timely manner to eligible County water systems and research the possibility of loaning to privately-owned water systems.