

July 17, 2007

**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 and second capacity development reports to the Governor were provided on July 31, 2001, and July 21, 2004, respectively.

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 requirements 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 technical,

managerial, and financial (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 of each capitalization grant made under the Drinking Water State Revolving Fund (SRF) 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 Hawaii American Water Works Association, 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 are codified in the Hawaii Administrative Rules, Title 11, Chapter 20, Rules Relating to Potable Water Systems in 1999.

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

- a. The DOH revised the Hawaii Administrative Rules, Title 11, Chapter 20, Rules Relating to Potable Water Systems, to require that new water systems 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 the 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 and Maunaolu Plantation subdivisions on Maui and the Kukio Bay subdivision on Hawaii started water systems under the new capacity regulations and the water systems are operating satisfactorily.

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

- Maui Highlands,
- Omaopio Ridge,
- Ukumehame,
- Peahi Farms, and
- Consolidated Baseyards.

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 SRF program were fully 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 must take actions to improve their TMF capacity.

a. The State's strategic capacity improvement plan incorporated the following actions during the first three 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 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 SRF set-aside grant from the EPA. The assistance provided started in July 2001 and the assistance did result in a gradual improvement in performance over the two 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 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 of the other 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, two hundred eighty six (75 percent) of the operators passed the certification examinations on the first try. The training contract was funded by the SRF 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 system operators (four water systems out of 131 systems did not attain the goal).

At present, all water systems have certified operators and there are 470 certified distribution system 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.

Currently, the water systems are providing their own training to prepare operators to take the certification examinations. In the future, the University of Hawaii's Outreach College is evaluating offering these types of training courses to the water systems.

- (3) Provided 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 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 SRF 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 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 training for operators and through an EPA grant in 2004, began developing and implementing a self sustaining water system operator training

program.

The University of Hawaii 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. Recently, 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 will allow 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 is expected to succeed with the support from the County water systems.

- (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 good results in improving the water system performance, and thereby improving the water system's TMF capacity. The circuit rider program identifies the technical, managerial and financial 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 operational improvements in the Hawaiian Beaches, Puuwaawaa, Hawaiian Shores, and Wood Valley water systems (Hawaii); the Hana Water Resources, Hana Water Company, and West Kuiaha Meadows water systems (Maui); and the Lanai Water Company and Manele Bay water systems (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 private, State, County, and Federal (national parks and military) water systems. The original contract limited the circuit riders to only small private water systems. The circuit rider program is paid by the SRF set aside grant fund for small water systems.

- (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 potable water. The sanitary surveys are a key part of assuring that the water systems maintain an adequate technical capacity.

Sanitary surveys are conducted once every three years (can be extended to five years when the water system operation is satisfactory) and the SDWB's goal is to conduct at least twenty seven sanitary surveys yearly. The SDWB sanitary survey program is slightly behind schedule this year because of man-power problems (currently short two engineers on a staff of four).

During each sanitary survey, the SDWB staff also evaluates the capacity of the water system to identify those systems whose performance may have deteriorated and are now in need of attention.

c. EFFICACY OF THE STATE STRATEGIC PLAN

- (1) Implementing a self sustaining water system operator training program on all islands. After a rough start, the University of Hawaii's Outreach College now has the commitment by the County water systems to work with the University to provide more training opportunities for all operators. Year round training facilities have been obtained at no cost to the program. The prognosis is that the self sustaining operator training program is now on track to succeed.
- (2) Circuit rider program. The circuit rider program improved the 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 will result 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 2007.
- (3) Sanitary survey program. The sanitary survey program has been strengthened by the EPA recently approving 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 Ground Water Rule in the Hawaii Administrative Rules, Title 11, Chapter 20, Rules Relating to Potable Water Systems during calendar year 2008.

- (4) Overall, the capacity of water systems in Hawaii are assessed as satisfactory based on the following:
- Compliance to microbiological monitoring requirements. All water systems in Hawaii are in compliance with the microbiological monitoring requirements.
 - Compliance to chemical monitoring requirements. All water systems in Hawaii are in compliance with chemical monitoring requirements.
 - Compliance to the lead and copper regulations. All water systems in Hawaii, except for the Navy's Lualualei water system, are in compliance with the lead and copper regulations. The Lualualei water system experienced a problem where lead levels exceeded the 90th percentile action level in 2006 which may be caused by a sampling problem. This conclusion was reached because the water system had no previous problems since lead monitoring started in 1993. The Navy is taking action to determine the cause(s) for the lead problem.
 - Compliance to the surface water regulations. All surface water systems in the State are in compliance with the surface water regulations.
 - Compliance to community reporting requirements. All 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 the State have certified distribution and water treatment operators as required by regulations.
 - Sanitary survey program. The sanitary survey program is satisfactory. Due to a shortage of engineers in the SDWB,

the Branch contracted an engineering firm (Oceanit Laboratories, Inc.) to conduct sanitary surveys of the Upper Kula, Lower Kula, Makawao, Wailuku, North Kona and South Kona water systems. 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.

IMPROVEMENT AREAS.

- (1) Small water system management attitudes. There is still reluctance by some small privately owned water system managers to improve the capacity of their water systems. The managers have the prevailing attitude 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 discuss the advantages of the circuit rider program and the need for improvements in water system performance with appropriate managers during sanitary surveys.
- (2) Provide low interest SRF loans to water systems. The SDWA includes a drinking water SRF 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 drinking water SRF program needs to continue to improve in its ability to provide loans in a timely manner to County water systems.
- (3) High fees to file rate changes with the Public Utilities Commission (PUC). The PUC procedures require public water systems they regulate to file applications for a water rate increase through a law firm. The small water systems in a low to medium income community with several hundred customers do not have the funds to file for a rate increase and their customers cannot afford to pay for cost to obtain the rate change. Consequently, these small water systems have not filed for rate changes even to keep up with inflation and these systems will remain insolvent. These systems rely on financial assistance from their parent companies or forgo maintenance when assistance is not provided. Consequently their ability to provide safe drinking water could be seriously hindered.

As an example, a small water system serving 1,005 service connections recently filed for a rate change for improvements and their cost to date is approximately \$195,000.

The small water systems in low to medium income communities need a simplified and low cost method to file rate changes with the PUC. The SDWB did meet with the PUC in the past on this issue, however the PUC stated that it would not change their procedures for the small water systems.