

Governor's Report on the Capability Enhancement Program

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COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
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INTRODUCTION

The 1996 amendments to the Federal Safe Drinking Water Act (SDWA) required all states to develop and implement a Capacity Development Program. This federal initiative is designed to address the lack of technical, managerial and financial abilities of the 9,382 public drinking water systems, specifically, 2,075 community water systems (CWS), 1,156 nontransient noncommunity water systems (NTNC), and 6,151 transient noncommunity water systems (TNC). The failure of many systems to meet state and federal standards is attributed to the underlying capability of these systems to address their technical, managerial and financial issues. Pennsylvania's program to address these problems is called the Capability Enhancement Program (CEP). Pennsylvania's program includes the following components:

- The Drinking Water and Wastewater Systems Operator's Certification Program
- The Outreach Assistance Providers Program
- The Filter Plant Performance Evaluation, Area-wide Optimization and Partnership for Safe Water Programs
- Business Planning and Asset Management
- The Source Water Assessment and Protection Programs
- The Engineering Services Program

In addition, the CEP strategy implements a number of basic steps to be followed in providing assistance, including:

1. Utilizing a Priority Rating System (PRS) to assess and prioritize all public drinking water systems in the state for technical, managerial, and financial capability enhancement assistance.
2. Conducting a comprehensive evaluation of targeted drinking water systems to define their specific assistance needs.
3. Developing "Site Specific" and "Global" Assistance and Implementation Plan(s) (AIP) to identify milestones for progress and schedule needed assistance. Site specific AIPs are developed based on individual system needs. Global AIPs are developed based on needs common to many or all systems.
4. Re-evaluating all target drinking water systems to measure improvement or lack of success on an annual basis.

CAPABILITY ENHANCEMENT PROGRAM REVISIONS

After five years of implementation, it became apparent that it was time to make some changes to the program to more effectively utilize available resources to enhance the technical, managerial and financial capability of Pennsylvania's public drinking water systems. The major reasons to make revisions to the CEP can fall into the following two major program priorities and policy changes that have occurred recently:

- State and Federal Drinking Water Sustainable Infrastructure Initiatives - The 2003 Drinking Water Needs Survey identified over \$10.9 billion in statewide drinking water infrastructure construction needs. Recognizing the total financing need is significantly higher if the long-term costs for operation and maintenance are included, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (EPA) have been working in partnership for the past two years to complete a comprehensive analysis of the gap between financial need and available financial resources. Preliminary results of this study were used by the Governor's Sustainable Water Infrastructure Task Force to complete its analysis. This task force identified a total financial need for drinking water systems of \$39 billion. When available local, state and federal financial resources are taken into consideration, the gap is \$15.5 billion. This gap can be reduced to \$5.1 billion if every customer of a drinking water system paid up to 1.5 percent of the community's median household income for service. To begin to minimize this gap, the Task Force also developed a series of recommendations for each of five defined components for sustainable infrastructure, including: Effective System Management; Asset Management; Effective Operations; Regionalization; and Maximization of Non-structural Alternatives. These five elements coincide nicely with the four "pillars" and ten key attributes defined by EPA.
- The State Water Plan (SWP) - The Water Resources Planning Act (Act 220) was passed in November 2002. Act 220 requires the state to develop the SWP to include a number of components that insure the long-term management and protection of the state's water resources. The SWP is being developed on a watershed basis, oriented around six major river basins in Pennsylvania including: the Delaware; the Upper Susquehanna; the Lower Susquehanna; the Potomac; Lake Erie; and the Ohio River. Of relevance to the CEP, Act 220 requires the SWP to include an assessment of the "current and future capabilities of public water supply agencies to provide an adequate quantity and quality of water to their service areas."

These two initiatives have increased the importance for clear, concise long-term water resource planning for drinking water systems. Both initiatives also have increased the focus for incorporating a watershed-based approach into the long-term operation and maintenance of Pennsylvania's public drinking water systems. In addition, both initiatives can be effective tools to promote the goals and objectives of the CEP. To accomplish this, the following changes to the existing CEP were needed:

- Incorporation of the Source Water Assessment and Protection Programs goals and objectives into the CEP Strategy.
- Revisions to the Program Priority Ranking System to reflect revised program goals and objectives.
- Revisions to key CEP components to more effectively utilize existing staff resources to achieve program goals and objectives.

PROGRAM GOALS AND OBJECTIVES REVISIONS

To insure the new initiatives were merged into the CEP appropriately, a comprehensive review of the program goals and objectives was needed. Some of the original goals and objectives are still appropriate and continue to serve as a focus for the implementation of the CEP including:

- Enhancing the capabilities of system operators to operate their systems in the most professional, effective and efficient manner;
- Enhancing the financial and managerial expertise of system owners and operators; and
- Empowering public water system personnel with the knowledge or access to information that allows them to address any factor that limits their capability to produce quality and quantity of water in a reliable and efficient manner.

In addition, there are a number of ultimate, long-term goals that could be reached as a result of the implementation of this *Capability Enhancement Program Strategy*. These include:

- Pennsylvania's water infrastructure must be sustainable and able to meet current and future drinking water demand while protecting public health and the environment and insuring continued economic growth and development.
- Pennsylvania's drinking water systems shall successfully minimize risk to public health through substantial implementation of a source water protection strategy.
- Pennsylvania's drinking water systems shall be in compliance with all rules and regulations due to improved technical, managerial and financial capability of the system.
- Provide assistance to small water systems in attaining a public water supply that is affordable, as well as compliant.
- Expand outreach to targeted water systems based on the results of the data collected from special projects that show influence upon system's capability, i.e. stream impairment designation.

Short -term outputs and outcomes that can be used to measure the success of the CEP include:

- Percent of community water systems that achieved minimized risk to public health through continued implementation of a source water protection strategy.
- Percent of community water systems that have source water protection strategies in place.

- Each year, decrease the number of high priority water systems as identified by the Capability Enhancement Program priority process, by bringing in at least thirty systems which are "new" to the program.
- Each year, work with at least thirty public water systems to utilize Assistance Implementation Plans towards the achievement of technical, managerial or financially capability in order for the systems to operate in compliance with required drinking water regulations.
- An increase in the number of certified operators and the amount of training and continued education offered to enhance their capability to operate and maintain drinking water systems in Pennsylvania.
- An increase in the number of Surface Water Treatment Plants with a Filter Plant Performance Evaluation rating of "Commendable"

PRIORITY RATING SYSTEM AND PROGRESS REVISIONS

One of the first steps in making the CEP more effective was to re-establish meaningful rating factors to be used for both prioritization and to track progress from year to year. Each year DEP will re-rate all the CWS and NTNC water systems using five PRS factors described below. (these five factors replace the eleven factors originally used) DEP will annually provide EPA a list of the "low rated" systems with the numerical value produced by the PRS rating. Even though transient non-community systems will not be ranked and prioritized for site specific assistance, these systems will not be denied assistance if referred by other methods.

- **Technical Factors**

1. **Significant Non Complier (SNC)** – This factor determines if the drinking water system has been deemed "significantly not in compliance". It measures the performance of the drinking water system against the regulatory requirements. A "no" answer to this question results in assigning one point.
2. **Source Water Protection Plan** – This factor determines if a system has developed a source water protection plan, based upon the system's source water assessment. A "yes" answer to this question results in assigning one point.

- **Managerial Factors**

3. **Certified Operator** – This factor determines if a system had qualified certified operator(s) during the past year. The certified operator(s) must be making all process control decisions and be available during all shifts of operation. A "yes" answer to this question results in assigning one point for this factor.

4. **Emergency Response / Operation and Maintenance Plan** – This factor determines if a system has **current** emergency response, operation and maintenance plans. A "yes" answer to this question results in assigning one point for this factor.

- **Financial Factors**

There is one financial rating factor. The source for this rating is PADWIS.

5. **Full Cost Pricing** – This factor determines whether or not a system is practicing full cost pricing to cover its current and future financial needs. Full cost pricing is a method of obtaining funds from the users, as they are needed, in a sufficient amount to cost-effectively operate, maintain, repair and replace all of the assets which are needed to provide the necessary level of service. The Pennsylvania Gap Analysis Study will be used to help evaluate this factor. A "yes" answer to this question results in assigning one point for this factor.

In addition to designating the priority systems for the next year, this exercise will measure the success of implementing a site-specific plan to improve capability at the target systems. By comparing one year's total point value to the next successive year's total, DEP is able to determine if the system's needs are increasing or decreasing. See *Table 1* for an example.

Table 1 – Measuring Progress, PRS Factor Points (Hits) By System

System	Year 2008	Year 2009	Year 2010
Community A	2	4	5
Community B	3	3	4
Community C	2	3	4
Community D	0	1	3

Note: System receives one point for maintaining each factor. PRS range is from a high priority to low priority (0 – 5).

EFFICACY OF THE CAPABILITY ENHANCEMENT PROGRAM

The CEP is effective within the limitations placed on it. There is no question that where DEP has been invited to assist water systems, an improvement in system capability is achieved.

Since its inception, Pennsylvania's CEP has achieved the following:

- Approximately 70 systems have participated in the program.
- Coordination with organizations and other state and federal agencies to secure grant and low-interest loan funding for public water system construction projects. These funds will facilitate infrastructure upgrades and enhancements, thus bringing systems back into compliance with the Safe Drinking Water Act.
- Organization and facilitation of multi-governmental meetings to address complex public drinking water issues.
- Presentations of management tutorials for governmental bodies, with emphasis on Pennsylvania regulations and essential public water system ownership.
- Individual assistance in completing self-assessment guides to pinpoint system weaknesses and strengths in the areas of technical, managerial, and financial capabilities.
- Thousands of Available Operator Annual Report forms have been entered into DEP's Environmental Facility Application Compliance Tracking System (eFACTS) database and analyzed to determine compliance rates.
- HACH laboratories provided specialized turbidity analysis training to 134 operators serving more than 60 small drinking water systems.
- Other trainings that have been provided by DEP since the start of the program include Emergency Response Plan and Operations and Maintenance workshops.
- Establishment of an Operator Center Website which serves as a hub for operator related information, with plans to expand the content to provide online assistance for "capability" issues that many operators face.
- Development of *Operator Workforce Analysis Report, September 2008*, which provides an in-depth analysis of the current state of the total water operator workforce and also provides projections for future operator needs. As a result of this analysis it is projected that an additional 540 certified drinking water system operators are needed to meet the immediate demand. An additional 1500 operators will be needed by 2015 to replace existing operators who will be retiring within this timeframe. Addressing this shortfall will be a priority as one of the CEP "Global" Strategies.

CONCLUSIONS AND OUTLOOK

In conclusion, the Capability Enhancement Program will continue to:

- Quantify and document the needs of Pennsylvania's 9,382 public water systems.
- Create and deliver an effective assistance plan for as many water systems that are willing to participate and to then meet their assistance needs.

The Governor's Sustainable Water Infrastructure Task Force has deemed that this Capability Enhancement Program is a "model" to move Pennsylvania forward toward the concept of "full cost pricing" for public water systems. This vision will encourage public water systems to perform at an even higher level of effectiveness and efficiency. The Task Force further recommended that this program be expanded to include assistance to wastewater treatment facilities.

Contacts: Persons interested in more information about this report and the Capability Enhancement Program may contact the Division of Technical and Financial Assistance at (717) 787-0122, FAX (717) 772-4474. Information may also be obtained from the Department of Environmental Protection Website, <http://www.depweb.state.pa.us> .

For more information, visit www.depweb.state.pa.us ,
keyword: Drinking Water.

Bureau of Water Standards and Facility Regulation
P.O. Box 8467
Harrisburg, PA 17105-8467
Phone: 717-787-0122

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