



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397  
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR

DOUGLAS P. SCOTT, DIRECTOR

217/782-3397

September 22, 2008

The Honorable Rod R. Blagojevich  
Governor of Illinois  
207 Statehouse  
Springfield, Illinois 62706

Dear Governor Blagojevich:

I am pleased to transmit the third report on Illinois EPA's Capacity Development Program. The Safe Drinking Water Act Amendments of 1996 required states to implement a Capacity Development Strategy for public water supplies. Capacity is defined for public water supplies as having adequate technical, managerial and financial resources in order to operate in compliance with State and federal drinking water standards.

The 1996 Amendments also required that a report be submitted within two years of strategy adoption to the Governor, and every three years thereafter. This report discusses the efficacy of the strategy and progress made toward improving technical, managerial and financial capacity of public water systems in the state. The report is to be made available to the public and will be posted on the Illinois EPA Web site.

Very truly yours,

Douglas P. Scott  
Director

Rod R. Blagojevich, Governor  
State of Illinois



Douglas P. Scott, Director  
Illinois Environmental Protection Agency

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# Triennial Capacity Development Report

*Safe Drinking Water: Leveraging  
Resources and Planning for the Future*

## **What is Capacity Development?**

The U.S. Environmental Protection Agency (EPA) has recognized the need for each public water system<sup>1</sup> to have adequate managerial, financial, and technical resources to operate in compliance with state and federal drinking water standards. These managerial, financial, and technical abilities are termed “capacity.” The U.S. EPA refers to the implementation of these three program elements as “capacity development,” and to the documentation of these elements as a “capacity development demonstration.” The Illinois EPA, as a primacy agent for enforcement of the federal Safe Drinking Water Act, has implemented a “Capacity Development Program.”

The Capacity Development Program is a mechanism that can be used to assist the Illinois EPA in accomplishing one of its core missions. That is, to assure that all persons served by public water supplies receive water that is safe in quality, clean, adequate in quantity, and of satisfactory mineral character for ordinary domestic consumption. This program encourages self evaluation and places emphasis on the education of operational staff and local officials regarding emerging technologies, predicted regulatory changes, and fiscal responsibility. By incorporating education into routine business practices, both the Illinois EPA and the Department of Public Health (DPH)<sup>2</sup> believe that water consumers will ultimately benefit from this direct assistance. Through demonstration of their capacity, water purveyors should be able to effectively operate their facilities with adequate communication between decision makers and technical staff. This ongoing communication should foster a planning process that enables future regulatory compliance, emergency preparedness, and financial security.

## **Requirements of the Capacity Development Program**

The Safe Drinking Water Act Amendments of 1996, (PL 104-182, August 6, 1996, Title XIV, Section 1420), required each state that intended to apply for the full amount of available drinking water State Revolving Loan Fund monies to implement a Capacity Development Program. The Illinois Capacity Development Strategy was approved by the U.S. EPA on September 27, 2000. This program was implemented in two parts:

1. All new public water supplies that became active after October 1, 1999, were required to complete a capacity development demonstration. Illinois adopted regulations to implement this requirement.
2. Illinois was required to develop a Capacity Development Strategy by September 30, 2000. The purpose of this strategy is to structure a work plan that will be implemented to ensure that existing public water supplies have the capacity to achieve compliance with all existing and future drinking water program standards and requirements.

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<sup>1</sup> A public water system is a water supply that serves 25 or more people (or 15 service connections) for 60 or more days out of the year. Public water systems are further delineated into community and non-community water systems. Community systems serve year round “residents;” while, non-community systems serve individuals a lesser time (more than 60 days). Additionally, non-community water systems are further divided into transient and non-transient supplies. As the name indicates, transient supplies serve 25 or more different individuals 60 or more days out of the year. Non-transient supplies serve 25 or more of the same people 60 or more days out of the year.

<sup>2</sup> The Illinois DPH, by interagency agreement with the Illinois EPA, has regulatory authority over the Non-Community Public Water Systems (NCPWS) in Illinois. Pursuant to this agreement, capacity development for Non-Transient Non-Community Public Water Systems (NTNCPWS) is the responsibility of the Illinois DPH.

Finally, the Safe Drinking Water Act Amendments of 1996 require the state primacy agency to report to the Governor and citizens of Illinois on a triennial basis regarding the status of the Capacity Development Program. The Illinois EPA first reported to the Governor in 2002, with a subsequent triennial report submitted in 2005. As required, these reports have also been made available to the public at: <http://www.epa.state.il.us/water/field-ops/drinking-water/capacity-development/index.html>. Failure to meet these deadlines could result in a loss of up to 20 percent of the State Revolving Loan Fund monies allocated to Illinois each year.

### **Capacity Demonstration**

The Illinois EPA and DPH continue to support the capacity development program and are convinced that maintaining overall public water supply capacity is essential in operating a safe system. As such, capacity demonstration elements will continue to be integrated into the routine activities of both agencies in order to ensure that progress is made. Implementation of the Capacity Development Program requires substantial technical assistance to encourage water supplies that have demonstrated a need to increase their capacity to manage, finance, and operate their system. This capacity demonstration is a compilation of documents prepared by the public water supply, reviewed on-site by the appropriate agency, and kept current by water supply operators and officials. Examples of supporting information in the capacity demonstration process include, but are not limited to, the following:

- *Technical Capacity Documentation:* copies of all construction and operating permits; a capital improvement plan with projections for at least five years; an operation and maintenance plan; water system ordinances for conditions of water connection and service, rates, water use and cross-connection control; a cross-connection implementation and operation plan; a list of all operators and their certification classifications; and copies of the most recent engineering evaluation, with copies of the response to any violations or deficiencies noted, and a plan to address any remaining deficiencies,
- *Managerial Capacity Documentation:* copies of the water supply organizational chart, up to the owner or official custodian level; an operational management plan; and emergency management plan; a summary of all educational conferences or seminars attended by both operator and managerial personnel; a communications chart, with a description of channels of communication; and legal agreements pertinent to water supply such as articles of incorporation, operating tariff, and mutual assistance agreements.
- *Financial Capacity Documentation:* copies of such financial documents as the most recent fiscal year audited annual statements for the past three years; any outstanding debts such as bonds, loans or other commitments; most recent rate review and ordinance recommendations; review of replacement, use and reserve funds; and a five-year projected operating budget/cash flow.

### **Program Implementation**

The Illinois Capacity Development Program relies heavily on existing program resources. One of Illinois EPA's and DPH's core missions is defined in the statues adopted under the Illinois Environmental Protection Act (Act). In 1970, the General Assembly found, that "state

supervision of public water supplies is necessary in order to protect the public from disease and to assure an adequate source of pure water for all beneficial uses.” Sections 4c, d, and e of the Act authorizes the Illinois EPA to have a program of “continuing surveillance of regular or periodic inspection.” Hence, the staffs of the Illinois EPA and DPH have incorporated elements of Illinois’ approved capacity strategy into their routine surveillance practices. As the program continues to mature, the agencies will continue to modify the original strategy to reflect those practices that prove to be most efficient and effective in maintaining and increasing water system capacity. Furthermore, the Illinois EPA continues to work with organizations and professional associations throughout Illinois to increase and improve capacity development networking opportunities. The educational programs provided by these organizations and associations, in turn, should enable water supplies to obtain specific information relative to their capacity needs through seminars and personal communication.

**Initial Implementation** – To initiate the program, a special workshop targeting small significant non-compliant water supplies was held in the fall of 1999 as a cooperative effort with the Illinois Rural Water Association. Fifty-eight water systems provided input on the Capacity Development Strategy and the structure of Illinois’ Capacity Development Program. Subsequently, workshops and seminars were held in cooperation with professional organizations and other agencies to introduce the concept of capacity development. These meetings provided additional input from public water supply operators and officials as to the needs that could best be met by Illinois EPA and DPH assistance. This feedback yielded a three-tier priority system.

Tier 1 public water supplies are those experiencing significant non-compliance problems, and were first targeted for capacity development assistance. Those undergoing formal enforcement may be given an opportunity to extend their final compliance date(s) based upon the completion of a capacity demonstration. This demonstration provides an opportunity for the respective water supply to evaluate their overall compliance needs as opposed to merely addressing individual violations. As an additional benefit, their evaluation should provide a blueprint for maintaining future compliance.

Tier 2 public water supplies are those with recurring compliance concerns, and are the second priority for capacity demonstration. These water supplies are encouraged to complete a capacity demonstration to remain in compliance or eliminate sporadic violations.

Tier 3 public water supplies are those systems that are currently in compliance that can benefit from capacity demonstration technical assistance. New and existing officials and technical staff must be made aware of the technical, managerial, and financial needs for maintaining a viable compliant water supply. The education and assistance efforts required to maintain this level of ongoing outreach are considerable. However, by incorporating the concepts of capacity development into routine activities the Illinois EPA and DPH hopes to save resources that would otherwise be spent in assisting water supplies in returning to compliance through formalized enforcement proceedings. In addition, when statewide or regional educational needs are identified, the Illinois EPA works with professional associations to ensure that necessary topics are covered and that training is provided to as many water supply operators or officials as possible. This targeted effort further assists water suppliers in maintaining compliance by increasing managerial, financial, or technical capacity.

The Capacity Development Program for non-transient non-community public water systems (NTNCPWS)<sup>3</sup>, differs somewhat from the Capacity Development Program for community water systems (CWS). Normally, these systems are not in the business of producing water for resale. The water supply at these facilities is used for drinking, sanitation, and potentially a manufacturing process. Therefore, these NTNCPWS do not always consider treatment and monitoring of their water systems a routine function of the management of their businesses. Demonstrating capacity for these types of public water systems is, for the most part, a small part of their overall management, budget, and operating plans. With this said, the approaches to achieving water supply compliance must often be viewed as continuity of business concerns rather than primary operational functions.

**Implementation** – As described above, all new public water supplies that have become active since October 1, 1999, were required to complete capacity development demonstrations. The following table must be reported to the U.S. EPA annually as a measure of new system capacity development. All Illinois water supplies that received either a construction or an operating permit since October 2, 1999, have completed capacity development demonstrations.

<b>Triennial Report on New Systems Capacity Development Program October 1, 2005 – September 30, 2008</b>			
<b>Method(s) used to evaluate and verify program implementation</b>	<b>Construction and Operating Permits (FFY: Oct. 1 – Sept. 30)</b>		
	<b>2006</b>	<b>2007</b>	<b>2008</b>
Number of proposed new CWSs	2	2	3
Number of proposed new NTNCWSs	4	6	1
Number of approved new CWSs	8	7	4
Number of approved new NTNCWSs	1	6	1
Number of new CWSs (commenced operation after October 1, 1999)	57	78	82
Number of new CWSs (commenced operation after October 1, 2003)	21	33	37
Number of new CWSs activated since October 1, 2003, considered to be in “significant non-compliance”	0	0	0

<sup>3</sup> NTNCPWS are facilities that serve drinking water to the same non-resident consumers each day, such as schools, factories and day care centers.

Number of new NTNCWSs (commenced operation after October 1, 1999)	60	60	60
Number of new NTNCWSs (commenced operation after January 1, 2004)	24	26	29
Number of new NTNCWSs activated since January 1, 2004 considered to in “significant non-compliance”	0	0	3
Number of new CWSs that are not in compliance	0	0	0
Number of new NTNCWs that are not in compliance	20	21	12

The priorities described above for existing water systems continue to be addressed as staff become aware of an existing or future compliance concern. Timely response to these issues is a requirement of the Illinois EPA’s Enforcement Management System (EMS). The EMS also allows for informal recommendations regarding future concerns or best management practices.

Beginning in 2003, the Illinois EPA implemented a more in-depth capacity pre-evaluation screening process. This process was designed to raise water system awareness regarding capacity development/demonstration, collect relevant data, and foster more efficient use of time during the engineering evaluation (called “sanitary surveys” at the federal level). Specifically, a letter and questionnaire are sent to the water system approximately two weeks prior to a scheduled evaluation. This correspondence asks that specific materials be made available for review by the Illinois EPA representative during the system engineering evaluation. Ideally, the questionnaire is to be completed and returned to the Illinois EPA prior to the on-site visit. The requested data includes a schematic or diagram of the public water system (from source through distribution system), information that may be missing or in need of updating from Illinois EPA records, status or activity on the respective water supply’s cross-connection program, and completion of capacity assessment worksheets.

The capacity assessment worksheets include managerial, financial, and technical aspects of the water supply’s operation. The questionnaire emphasizes the need for facility personnel or officials that are responsible for any financial or managerial data, potentially outside the expertise of the certified operator in responsible charge, to be present at the time of the engineering evaluation. The intent of this request is to provide water supply decision makers an opportunity to present information and respond to questions that the Illinois EPA might have pertaining to this data evaluation.

Each completed pre-screening survey is reviewed prior to the engineering evaluation of the water system. Missing data is identified and either requested through additional correspondence or reviewed during the evaluation. Completed surveys are reviewed with water supply operators and officials during the routine engineering evaluation. This on-site assessment provides an opportunity for field engineers to review and document (as needed), the actual records, official papers, or files referenced in the pre-screening survey. If the water supply officials and staff have not completed

the pre-screening survey, survey elements may be reviewed during the engineering evaluation visit. If sufficient detail is not present to adequately document that a water system meets all statutory requirements, the Illinois EPA may be forced to follow the EMS to establish compliance.

Irrespective of the compliance status of the water system, a formal engineering evaluation letter is sent to the public water supply owner or official custodian following the on-site evaluation. This correspondence acknowledges that an evaluation of the system was conducted and details follow-up actions, as necessary. To facilitate incorporation of capacity demonstration elements into both the business practices of the Illinois EPA and the respective water system, the components of the pre-evaluation screening survey are integrated into the findings of the engineering evaluation. If compliance issues are raised by the Illinois EPA staff, a written response that includes a timely corrective action plan is required. Based upon the status of the system with regard to the EMS, this agreement can be of a formal or informal nature. Finally, data acquired through the water system capacity evaluation process is tracked by the Safe Drinking Water Information System (SDWIS) system.

From 2003 through 2005, special emphasis was placed on emergency operating plans (EOPs) for larger water suppliers. Federal requirements for a vulnerability assessment prior to the development of an EOP were used to emphasize the need to be prepared for a water supply emergency. EOPs address a considerable number of elements necessary to demonstrate capacity. While these federal requirements targeted large community water supplies, the Illinois EPA has continued to require all community water systems to develop emergency or contingency planning documents. These planning documents, along with details regarding cross-connection control program (a statutory program that helps prevent contaminants from flowing back into water supply distribution system from water customers) implementation, will continue to remain basic engineering evaluation elements.

The Illinois EPA and DPH recognize that field inspections and assessments are needed to identify deficiencies that are causing, or have the potential to cause, the introduction of contaminants into the water delivered to consumers and, therefore, require corrective actions. Both agencies attempt to make contact with water supplies on a frequent basis, as resources allow. Therefore, the Illinois EPA has modified/simplified the pre-evaluation screening survey for certain systems that have addressed most technical and managerial issues discovered during their most recent engineering evaluations. This more focused evaluation will continue to ensure that data is kept current and reminds water supply officials of the need to maintain compliance with existing (and prepare for future) regulations. These “living surveys” also allow the Illinois EPA to adjust items for individual water suppliers to address new program priorities. As the Capacity Development Program continues to mature, subsequent visits and follow-up inspections to water supplies will enable the Illinois EPA and DPH to compare data and determine if improvements to capacity have been achieved.

The Illinois DPH uses existing field surveys and visit opportunities to identify NTNCPWS that need, or may benefit from, capacity development assistance. Therefore, developing capacity is often a coordinated effort between the Illinois DPH and local (county) health department staff who routinely visit these facilities. The Illinois DPH routinely disseminates information and education materials to local health department staff who administer the NTNCPWS program. In

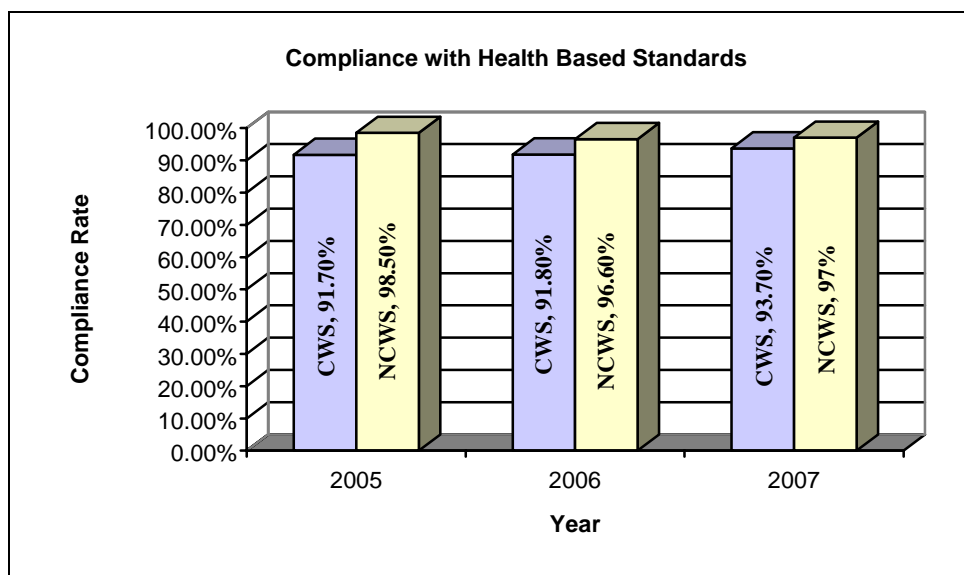


turn, when capacity assistance is needed on-site, Illinois DPH staff are called upon by Local Health Departments to accompany them to the respective facility to assist in providing training or technical assistance.

**Shifts in Program Priorities** – Illinois’ original Capacity Development Strategy described a plan to add additional staff resources to administer the Capacity Development Program as a separate, but cooperative, element of the base drinking water surveillance program. As described in the previous triennial report, this goal has not been realized. In fact, staffing levels at both the Illinois EPA and DPH have continued to diminish. Both agencies have been forced to draw upon their program implementation experience to integrate the Capacity Development Program (for existing systems) into their routine surveillance activities. While additional staff are needed to eliminate shortfalls in the frequency of engineering evaluations and to adequately implement new program requirements (including, but not limited to, the Capacity Development Program), the demonstration of water system capacity has become an integral part of the technical assistance provided by the Illinois EPA and DPH.

### Measuring Program Effectiveness

Ideally, the efficacy of the Capacity Development Program could be tracked through the evaluation of water supply compliance progress.<sup>4</sup> In other words, over time, one would expect that proactive implementation of capacity development by public water supplies would result in an overall increase in compliant systems. Over the reporting period, the following provides a graphic representation of Illinois public water system progress<sup>5</sup> in complying with health based standards.



<sup>4</sup> Prior to July 1<sup>st</sup> of every year, the Illinois EPA publishes an Annual Compliance Report for Public Drinking Water Supplies on the Web at: <http://www.epa.state.il.us/water/compliance/drinking-water/compliance-report/index.html>. This report provides detailed compliance information relative to the many aspects of the Safe Drinking Water Act program.

<sup>5</sup> It is important to note that community water systems must ensure compliance with a larger subset of regulated contaminants (e.g., radiological contaminants).

Unfortunately, this measure illustrates only a slight increasing trend in compliant public water supplies. However, the actual Capacity Development Program progress may be masked by several factors:

- New regulations are continually developed by the U.S. EPA that ever increase the compliance challenges to water systems (as well as the resource limitations of both the Illinois DPH and EPA). Without the technical assistance provided under the Capacity Development Program, compliance rates would likely have diminished to a significant extent.
- An additional factor that tends to mask the overall success of the Capacity Development Program involves small system capacity demonstration. In the measure described above, all water systems are weighted equally. While capacity demonstration by a water system should assist in ensuring their future compliance, fiscal limitations will always exist for certain water supplies. Therefore, these public water supplies' rate of compliance suffers until they develop remedies and return to compliance. The bottom line is that small systems compliance will generally be impeded by financial constraints.
- The final factor in this compliance picture relates to the frequency of contact between public water supplies and the Illinois DPH and EPA. As described in the 2005 Capacity Development Report to the Governor, addressing the evaluation backlog is a high priority for the Illinois EPA. Even with staff attrition, significant strides have been made over the reporting period in meeting the goal of conducting engineering evaluations of all community water supplies on a triennial basis. As of July 21, 2008, approximately 88 percent of all community water supplies in Illinois have had an engineering evaluation in the past three years. This personal technical assistance has a direct impact on water supply compliance rates. Simply, the more often that the agencies are in contact with water supply officials, the greater the likelihood that the system will remain in compliance.

## **Summary**

The Illinois EPA and DPH continue to support the Capacity Development Program. This program is vital to ensuring that Illinois' public water systems continue to operate in a safe manner. Many of the original premises presented in the Illinois Capacity Development Strategy are proving to be accurate. That is, the resource demands of true capacity assistance are significant. However, capacity development remains an integral element in the working relationship developed between public water systems and state officials. As such, capacity demonstration elements will continue to be integrated into routine activities of the Illinois EPA and DPH to ensure that compliance progress continues.

The Illinois EPA and DPH strive to have all public water supplies provide water that complies with state and federal drinking water standards. Systems that do not meet these standards must develop timely compliance plans, acquire permits and make capital expenditures to correct deficiencies. These corrective actions are documented in formal compliance commitment agreements.

With certain limitations, the ultimate test of capacity development efficacy is compliance. Based upon the data illustrated above, 93.7 percent of community water and 97 percent for non-community public water systems are in compliance with health based standards. These compliance rates compare favorably with national average of 94 percent<sup>6</sup> for public water systems. Furthermore, the increasing compliance trend (however slight) is a favorable reflection on the Capacity Development Program. This is especially true since recent regulations have generally decreased compliance rates.

Over the next reporting period, new regulations will continue to challenge water suppliers and further stretch the state's resources. The Illinois EPA and DPH hope that the Capacity Development Program will provide the mechanism for continued high compliance rates that in turn reflect positively on the safety of public water system consumers in the State of Illinois.

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<sup>6</sup> U.S. EPA Report entitled, "Providing Safe Drinking Water in America: 2004 National Public Water Systems Compliance Report - Fact Sheet" available at:  
<http://www.epa.gov/compliance/resources/reports/accomplishments/sdwa/sdwacom2004factsheet.pdf>.