

**Report to Governor  
Capacity Development Program  
September 30, 2005**

**What is Capacity Development?**

The United States Environmental Protection Agency, USEPA, has recognized the need for each public water supply to have adequate managerial, financial and technical resources in order to operate in compliance with State and federal drinking water standards and requirements. These managerial, financial and technical abilities are called “capacity”. USEPA refers to the implementation of these three program elements as “capacity development”, and to the documentation of these elements as a “capacity development demonstration”. Illinois, as a primacy agent for enforcement of the federal Safe Drinking Water Act, has implemented a capacity development program.

The primary goal of the Capacity Development program is to ensure that those who drink water in Illinois and across the country receive safe, potable water from each and every public water supply tap. Full Illinois Environmental Protection Agency (Illinois EPA) participation in the implementation of capacity development will benefit the water consumers of Illinois by providing the direct assistance needed by water supplies to operate in compliance with all drinking water regulations. Consistent vigilance over the entire public water supply operation will ensure that technical equipment and processes are correctly operated, communication between operators and managers facilitated, and information to assist in managerial and financial planning for both emergency operations and future regulations is handled in a timely manner to promote planning. The Capacity Development program emphasizes assistance with a goal of working together toward compliance, versus contact as an outcome of violation response (outside routine evaluations). Education and information for new officials, as well as assistance with changing technologies and regulations, are important deliverables that the Illinois EPA provides to public water supply officials and operators.

**Requirement for a 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. This program was to be implemented in two parts.

1. First, 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. Failure to meet this deadline would have resulted in a loss of up to 20% of the State Revolving Loan Fund monies allocated to Illinois each year.
2. Second, 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 Illinois will implement to ensure that existing public water supplies have the capacity to achieve compliance, and continue to operate in compliance with all existing and future drinking water program standards and requirements. Failure to meet this deadline would have resulted in a loss of up to 20% of the State Revolving Loan Fund monies allocated to Illinois each year. The Illinois Capacity Development Strategy was approved by USEPA on September 27, 2000.
3. A report to the Governor of the State is also required by the Safe Drinking Water Act Amendments of 1996. This report is to provide a status of the Capacity Development program to you, and is to be made available to the public, as well. The first report was submitted to Governor Ryan in 2002.

### ***Capacity Demonstrations***

A capacity demonstration is a compilation of all the information needed to manage, finance and operate a public water supply. This data is documentation prepared by the public water supply, reviewed on-site by the Agency, and kept current by water supply operators and officials. Information consists of the following types of documentation:

- a) Technical Capacity documentation includes 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,
- b) Managerial Capacity documentation includes 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.
- c) Financial Capacity documentation includes 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**

Illinois EPA initially devised a plan to fully utilize existing program resources to incorporate the Capacity Strategy approved in FFY 2000, and to serve as a resource contact point to network public water supplies with other organizations or agencies that have needed expertise. The Agency has modified the original Strategy to reflect those practices that have proved to be most efficient in maintaining water supply compliance and increasing system capacity. Some adjustments in use of staff have also been made to maximize personnel efficiency. As was suggested in the original Strategy, Illinois EPA has worked to increase and improve networking with other organizations and professional associations throughout Illinois so that the best possible expertise is offered to each public water supply, based upon the capacity needs of that supply.

***Initial Implementation*** -- 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, with 58 water supplies represented. These supplies provided input into the formalized Capacity Strategy, and helped structure the format of the capacity development program in Illinois. Workshops and seminars were held in cooperation with professional organizations and other agencies to introduce the concept of capacity development and to receive input from public water supply operators and officials as to the needs that could best be met by Illinois EPA assistance.

Public water supplies experiencing significant non-compliance problems were first targeted for capacity development assistance, and are identified in the Illinois Strategy as Tier 1 supplies. Those undergoing formal enforcement are given an opportunity to possibly extend the final compliance date when agreement is reached for the supply to complete a capacity demonstration. This process provides an opportunity for the supply to determine complete overall compliance needs, rather than address only the specific current violations, and to develop a plan that will work toward achieving and maintaining compliance in all areas.

***Ongoing Implementation*** -- Water supplies with recurring problems or violations are a second priority (Tier 2) for capacity demonstration. These water supplies are encouraged to complete a capacity demonstration in order to remain in compliance, or to eliminate sporadic non-compliance episodes.

The final priority (Tier 3) for capacity program implementation is water supplies that are in compliance at this time. It is important that new and existing officials and operators are cognizant of the technical, managerial and financial efforts needed for a water supply to remain in compliance. Education and assistance efforts require considerable time on the part of field and headquarters staff, but have been incorporated as much as possible into routine activities to achieve continued compliance through education and cooperation of water supply officials and operators. When statewide or regional educational needs are identified, Illinois EPA works with one or more 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 assists water suppliers in maintaining compliance and increasing capacity.

At this point, Illinois EPA is able to respond to most capacity development needs as soon as staff becomes aware of a need or potential non-compliance. The original priority system is used when resources are not available to respond within a timely fashion. This response time is a result of utilization of the Agency's Enforcement Management System (EMS) to augment the capacity development program, and of results in efforts to improve and increase networking.

The Field Operations Section (FOS) implemented a more in-depth capacity pre-screening process during 2003. In order to make more efficient use of time during engineering evaluations (called "sanitary surveys" at the federal level), field personnel send a special letter containing a questionnaire at least two weeks prior to scheduling the evaluation. This letter asks for specific materials to be made available for review by the Illinois EPA representative during the system evaluation. Furthermore, the questionnaire is to be completed and returned to the appropriate FOS staff prior to the on-site visit. The requested data includes a schematic or diagram of the public water system (from source through distribution system), all materials that cannot be found in Illinois EPA records, material that needs to be updated, information regarding on-going cross-connection program, and capacity assessment worksheets. These worksheets include managerial, financial and technical aspects of the water supply's operation. The questionnaire also 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 FOS staff might have pertaining to this data evaluation.

Each completed pre-screening survey is reviewed in the office before the field engineer visits the water supply to conduct the engineering evaluation. If necessary, missing items are identified and again requested by Regional staff prior to the scheduled evaluation. Completed surveys are reviewed on-site 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. Depending upon the situation, the missing information from the pre-screening report may be completed during the visit or the regional engineer may stipulate a specific date for completion of the survey as a part of the engineering evaluation letter that is sent to the owner and official custodian of the water supply, with a copy to the certified operator in responsible charge. If the survey was not completed by the

public water supplier in a timely manner, it is written up in the evaluation letter as a violation, and required to be submitted within 45 days or less.

The engineering evaluation letter that is sent to the public water supply owner or official custodian following the on-site evaluation includes both sanitary defects found during the technical evaluation and deficiencies or inadequacies documented through the pre-screening survey process. The elements of the pre-screening survey are then be integrated into the engineering evaluation so that on-going tracking of the subject elements will continue and become a part of the base drinking water program. Depending upon the nature of the violation or capacity inadequacy, this notice is sent either as a non-compliance advisory or a violation notice. Written response and a plan for achieving compliance are required. Field Operations staff and Compliance Assurance Section staff follow up to ensure that compliance agreements are met. Capacity data is tracked in the federal Safe Drinking Water Information System (SDWIS) data system.

The process of requiring a new pre-screening survey to be completed each time an engineering evaluation is conducted (every three to five years) will continue until all technical and managerial areas are included in the engineering evaluation. This ensures that data is kept current and reminds water supply officials of the need to maintain compliance with existing regulations. Questions and data collection items on the pre-screening survey will be evaluated prior to each visit based upon the last survey and upon new or changing regulations, requirements, and priorities. This allows the Illinois EPA to adjust survey items for individual water suppliers to address new program priorities. Subsequent visits and follow-up inspections to a water supply also enable regional FOS staff to compare data and determine if improvements to capacity have been achieved.

Special emphasis was placed on emergency operating plans (EOPs) during FFY 2003–2004, and FFY 2004-2005. EOPs address a considerable number of elements necessary to demonstrate capacity. Federal requirements for a vulnerability assessment, and an EOP were used to emphasize the need to be prepared for any sort of emergency. Emergency planning and cross-connection control are now basic engineering evaluation elements, and remain priority security considerations during each fiscal year evaluation process.

Re-evaluation of capacity development elements will remain an integral part of all engineering evaluation activities. Additional field operations staffing has been identified as a need to more effectively implement the capacity development program, and to meet changing regulation oversight and assistance requirements.

The Illinois Department of Public Health (IDPH), 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 as it relates to Non-Transient Non-Community Public Water Systems (NTNCPWS) is the responsibility of the IDPH. NTNCPWSs are those facilities that serve drinking water to the same non-resident consumers each day, such as schools, factories and day care centers. The NCPWS Program is unique in that these systems are not in the business of producing water for resale; therefore, the treatment and monitoring of the water system has not traditionally been a routine function of the management. The water supply at these facilities is used for drinking, sanitation, and in some cases, manufacturing processes. Demonstrating capacity for these types of non-community water systems is, for the most part, a small part of the overall management, budget and operating plan for a specific public water supply. IDPH uses existing field survey and visit opportunities to identify NCPWSs which need or may benefit from capacity development assistance, but approaches the water supply compliance issues from a somewhat unique perspective of a side benefit activity rather than a primary activity, and must work within the framework of the entire operation to best assist the supply in

developing capacity. Central office staff coordinate the dissemination of information and education of NCPWS personnel for all new or amended regulations and requirements. When capacity assistance is needed on-site, central office staff accompany field staff or local health department staff to provide training or technical assistance.

### **Successful Compliance Can Be Achieved – Strategy Efficacy**

While the resource commitment needed to assist a water supply experiencing many non-compliance problems is significant, both managers and operators can benefit from capacity development. Many water supplies have many of the elements of a capacity demonstration in place “somewhere” – frequently in the memories of long-term employees or officials. Capacity development encourages water suppliers to take the time to organize and document this information, to ensure that key employees are aware of responsibilities and expectations during both normal and emergency operations, and helps water suppliers take a look at future regulations to be both financially and technically prepared to continue to operate in compliance. The Strategy used by the Illinois EPA is designed to encourage water supply officials and operators to organize a capacity demonstration, to use the document as a training aid for new employees and officials, and to keep the information in the demonstration current. Capacity demonstration elements are incorporated into the formal engineering record of each public water supply as well, and can be used as a base for detailed demonstrations. In the case that a public water supply has few capacity development needs, the engineering evaluation serves as a demonstration of capacity.

Illinois EPA’s role in providing technical assistance whenever possible, and helping water suppliers locate and coordinate with other organizations and agencies when specific financial or managerial skills are needed is a key to the success of capacity development. These assistance and coordination efforts maximize existing resources while developing new tools within the Agency only when truly necessary.

Illinois’ original Capacity Development Strategy described the plan to add additional headcount at the regional level, and to operate the capacity development program as a separate but cooperative segment of the base drinking water surveillance program. The goal, once new FOS staff were hired and trained, was to assign capacity demonstration coordination responsibilities to experienced FOS staff while new staff were trained to cover the full gamut of FOS duties. Experience with implementing and maintaining capacity development over the past five years has demonstrated to the Agency that it is most efficient to fully integrate the capacity development program for existing systems into the routine surveillance and assistance duties of all regional offices. While additional FOS staff are needed to eliminate shortfalls in engineering evaluation inspection and to adequately examine and evaluate changing and new program requirements and capacity development elements, it has been determined that the capacity development program must be an integral part of the duties of all FOS staff. Addressing this inspection lag is the first priority; integration of capacity elements into each engineering evaluation ensures that those systems that have been backlogged will undergo a capacity review at the same time as the engineering evaluation, and will be directed to address all issues in a single effort. Compliance plans and schedules developed during this process will take all non-compliance elements and capacity issues into account and ensure that future operations meet the capacity development program goal of on-going operational compliance.

In response to current budget constraints and other long-term resource commitments, the FOS has developed a Strategic Plan to carry out program objectives. A key aspect of this plan includes utilization of the DPWS Groundwater Section (GWS) staff for assistance performing groundwater system inspections. Moreover, the goal of this strategy will be to use the completed source water assessment and field presence to directly promote implementation of protection programs. Sanitary survey training will be provided to GWS staff prior to assignment to FOS to complete these inspections. Other aspects include prioritization of work, development of an electronic form for inspections, using pocket PCs, and web-based enterprise database solutions for all FOS and GWS business practices. FOS personnel have participated in the piloting of pocket PC use during engineering evaluations, but this tool is not yet in

place for all regional personnel. The ongoing integration of this strategy into daily work activities has helped the FOS continue to effectively implement the Capacity Development Strategy despite the resource limitations. Capacity development program goals will continue to be incorporated into routine surveillance operations, technical assistance and operator education opportunities. Efforts will be made to increase FOS staffing so that all required compliance elements can be assessed and assistance provided whenever needed.

### *Networking is Essential*

In addition to on-site assistance, networking with the professional water industry organizations and participation in educational presentations are the three most frequently used tools that Illinois has found successful in helping public water supplies understand and implement programs that sustain capacity. Illinois EPA networks with a number of other agencies and departments to assist public water supplies in maintaining capacity, such as the Illinois Department of Public Health, Illinois Department of Agriculture, Illinois Department of Transportation, Illinois Department of Labor, Illinois Capital Development Board, Illinois Bond Bank, Illinois Rural Water Association (IRWA), Southern Illinois University – Edwardsville (SIU-E) Environmental Resources Training Center (ERTC), Midwest Technical Assistance Center (MTAC), Illinois Potable Water Supply Operators Association (IPWSOA), local operator associations throughout the State, Illinois Municipal League (IML), Illinois Environmental Regulatory Group (IERG), American Water Works Association (AWWA), Illinois Association of Plumbing, Heating and Cooling Contractors (IAPHCC), American Backflow Prevention Association (ABPA), Illinois Plumbing Inspectors Associations (IPA), American Society of Sanitary Engineers (ASSE), USDA Rural Community Assistance Partnerships (RCAP), local community college programs, and other organizations. Whenever a public water supply has a need that can be met by the combined efforts of the Agency and one or more of these groups, contact is made and efforts begin to provide capacity assistance as needed to that supply. The effectiveness of the Agency is increased significantly through this cooperative assistance process. Individual hands-on assistance is provided in all three Technical, Managerial and Financial (TMF) areas, including rate studies, ordinance or regulation development, and technical operations. These assistance efforts, combined with Illinois' enforcement management program, provide the impetus needed and the formal framework and milestones essential to accomplishing capacity development improvement.

FOS staff also coordinates with many water supply association organizations throughout the year to plan educational seminars, meetings and workshops. As a part of these planning committees, FOS personnel are able to describe areas of weakness or need for improvement throughout the drinking water program that have been determined through engineering evaluations, sampling or compliance activities, or other contact with water suppliers; outline new regulatory requirements or changes to existing requirements that need to be communicated to operators and water suppliers; and ensure that speakers or sessions are included to address these areas. FOS participates in annual educational program planning activities for the IRWA, IPWSOA, Southern and Northern Small Systems Conferences, and the ISAWWA Annual Meeting and seminar series. This capacity effort affords FOS at least five opportunities at different times throughout the year for input to address capacity development needs as a part of educational offerings held during each year. If problems are identified in specific locations, FOS works with the appropriate organization to hold a seminar to address these problems. These educational programs also qualify operators for renewal training credits needed every three years to retain their certificates of competency.

The ERTC worked with FOS to address two specific areas of concern in management during FFY 2005. These two seminar topics were funded by MTAC. A rate analysis workshop featuring the Missouri "Show Me Ratemaker" author, Carl Brown, was held at four locations throughout the State to help water supply officials better plan and manage their finances. A second area of concern, cross-connection control training for administrators, was also held in three areas of the State. This seminar was designed to help those who must establish and keep records for the cross-connection program implement an effective program within their water supply and to integrate cross-connection control into emergency management plans

## SUMMARY

The Illinois EPA continues to support the capacity development program and is convinced that maintaining overall public water system capacity is essential in operating a safe public water supply. Implementation of substantial technical assistance is requisite to accomplishing capacity development in public water supplies that are in distress. This is a high priority of the DPWS. 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, the Illinois EPA continues to believe that capacity development is an integral element of the working relationship between DPWS staff and public water supply officials. As such, capacity demonstration elements will continue to be integrated into the routine activities of the FOS in order to ensure that progress is made.

The most recent quarterly compliance report issued by the Compliance Assurance Section shows that Illinois's compliance performance measures negotiated with USEPA Region 5 have now reached 94% of all Illinois public water supplies providing water to consumers that complies with all State and federal drinking water standards. The overall goal to be achieved is 95%. The majority of violations fall into the category of maximum contaminant level excursions and treatment technique non-compliance. Resolution of these types of violations requires capital expenditures, planning, acquisition of permits, and other costly and time consuming measures. These elements of compliance are reflected in formal compliance agreements, where realistic time frames for achieving compliance are agreed upon by both the Agency and the water supplier.

A third category of violation, provision of adequate public education, has been a topic at the most recent Illinois Potable Water Supply Operator's Association annual conference, and is on the agenda again at a mini-conference to be held in southern Illinois in October. Illinois EPA will work with Illinois Rural Water Association and other educational entities to continue to improve compliance with this requirement during FFY 2006.

### **Progress Toward Compliance**

Illinois continues to retain and improve compliance levels. The ultimate test of capacity development efficacy is compliance – a successful overall program operation that includes both capacity development and formal enforcement minimizes non-compliance rates. During times of stable federal regulation, compliance rates rise; when new regulations are promulgated and become effective at the federal or State level, however, it is expected that compliance rates may dip or decrease, depending upon the regulation and the level of capital improvement needed to improve treatment or distribution processes. When new regulations adversely affect compliance rates, it is expected that ongoing capacity development programs will minimize the amount of time that water supplies will be out of compliance by encouraging better preparation and insight into upcoming requirements.

Significant gains in compliance may not be immediately apparent, due to the impact of new regulations. A considerable number of significant regulations are expected to emerge over the next five years. Illinois has recently been impacted by both the radionuclide and arsenic regulations, as well as increasingly stringent regulations for water supplies that use surface water sources. Regulations are also expected for new microbial contaminants, water supplies that use groundwater sources, and water supply distribution system operations. The Agency is confident, however, that progress toward compliance will be consistent for existing regulations, thus providing consumers with an increased confidence in the safety of Illinois drinking water. The following information must be reported to USEPA each year to monitor progress on 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.

Annual Report on New Systems Capacity Development Program October 1, 2004 – September 30, 2005	
Method(s) used to evaluate and verify program implementation	Construction and Operating Permits
Number of proposed new CWSs	7
Number of proposed new NTNCWSs	1
Number of approved new CWSs during FFY 2002	4
Number of approved new NTNCWSs during FFY 2002	1
Number of new CWSs (total number that commenced operation after October 1, 1999)	30
Number of new NTNCWSs (total number that commenced operation after October 1, 1999)	51
Number of new CWSs that are not in compliance, Reason for non-compliance	0
Number of new NTNCWs that are not in compliance, Reason for non-compliance	0

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