

Missouri is committed to ensuring that its citizens are provided water that is safe to drink. Assisting public drinking water systems in acquiring and maintaining adequate technical, managerial and financial capabilities is critical to this mission. These state-wide assistance efforts are driven by the Public Drinking Water Branch Capacity Development Program.

Report to the Governor

Missouri Public Drinking Water
Capacity Development
December 2014



Division of Environmental Quality
Water Protection Program
Public Drinking Water Branch

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Public Access to This Report

This report will be available to the public upon request and will be posted on the Missouri Department of Natural Resources' web site. It will also be made available to water industry association groups, technical assistance providers, and the U.S. Environmental Protection Agency for inclusion on their websites if they so choose. The Department will also issue a news release to newspapers statewide.

Executive Summary

This 2014 Report to the Governor on the Missouri Public Drinking Water Capacity Development Program reports on the efficacy of the Program and progress made in improving the technical, managerial and financial capacity (TMF) of the State's drinking water systems. The Capacity Development Program has implemented a strategy to assist the State's public drinking water systems in improving their finances, management and operational practices, infrastructure condition and technical knowledge, in order to consistently and sustainably provide safe drinking water. In addition, this report fulfills the State's obligation, under section 1420(C) (3) of the Safe Drinking Water Act (SDWA), to report the status of the Capacity Development Program to the Governor every three years.

The two primary areas focus in the Capacity Development Program, during the past three years, have been the enhancement of assistance provider contracts and enhancement of department roles in providing assistance to drinking water systems.

- The Public Drinking Water Branch (Branch) contracts with assistance providers (or circuit riders) to help drinking water system owners and operators meet regulatory requirements and sustainability needs. The circuit riders reach hundreds of systems each year providing various type of assistance, including: operator training; assistance meeting and understanding regulatory requirements; assistance with policy and bylaw development; water rate studies; strategic planning; asset management; assistance with financing requests; locating leaks in water lines; and flushing and metering programs; As one example of the benefits provided by these services the leak detection program was able to save drinking water systems approximately \$336,000 and over 56 million gallons of finished water.
- Branch and regional office staff have emphasized more targeted service by prioritizing drinking water systems' needs for services, coordinating with circuit riders and systems to resolve existing system violations and address pressing drinking water system needs. Since 2012 approximately \$5.6 million in grant dollars were awarded for engineering services. Approximately \$3.3 million was awarded for the development of engineering reports and \$2.3 million was awarded for the development of plans and specifications. These grants were distributed among 136 public drinking water systems. An additional \$1.6 million in assistance has been offered to 109 public water systems through source water protection and abandoned well plugging grants. Finally, a voucher program

provided \$664,010 to systems; to encourage continuing education for certified operators of public drinking water systems.

The Capacity Development Program also recently began to place additional focus on financial resources, collaborating with sister agencies, educating stakeholders about pending new regulations and increasing the awareness of the value of safe and sustainable drinking water.

Introduction

As part of Missouri's commitment to safe drinking water, the Missouri Department of Natural Resources' Water Protection Program Public Drinking Water Branch (Branch) has developed and implemented a strategy to help public drinking water systems improve their technical, managerial, and financial capacity (TMF). The purpose of a system building this capacity is to enhance a system's ability to consistently achieve the public health objectives of the Safe Drinking Water Act (the Act), regulations and ensure sustainability.

Pursuant to Section 1420 of the Act, states are required to develop and implement a capacity development strategy to assist public drinking water systems experiencing significant compliance challenges in acquiring and maintaining technical, managerial and financial capacity.

Not later than two years after EPA has approved a state's capacity development strategy, and every three years thereafter, the state agency responsible for implementing the Act must submit a Report to the Governor on the efficacy of the strategy and progress made toward improving public drinking water systems' technical, managerial and financial capacity. The report must also be made available to the public. Reports to the Governor were provided every three years since 2002, the next report will be due in 2017.

Missouri's strategy was approved by EPA on September 14, 2000. Adjustments in strategy implementation are included in capacity development reports submitted to EPA on an annual basis.

Missouri Capacity Development Strategy

The original Capacity Development Strategy was developed with stakeholder input and implementation has been adapted as needed based on experience and communications with systems, regional decision-makers and other entities. However, the basic principles of the Strategy have remained consistent. The core elements of the strategy are as follows:

1. Improve water system knowledge of current and future regulations.
2. Improve communication and trust among all partners.
3. Educate Missouri citizens on the importance of safe drinking water.
4. Encourage partnerships between agencies and systems.
5. Improve interagency and intra-agency communication for TMF capacity related programs.
6. Coordinate financial resources.

7. Continue rate setting and financial management training for small systems.
8. Increase planning in rural areas.
9. Develop and provide board member training and TMF Capacity materials and training to public drinking water system decision makers.
10. Continue to collect baseline data to measure the success of TMF capacity activities.

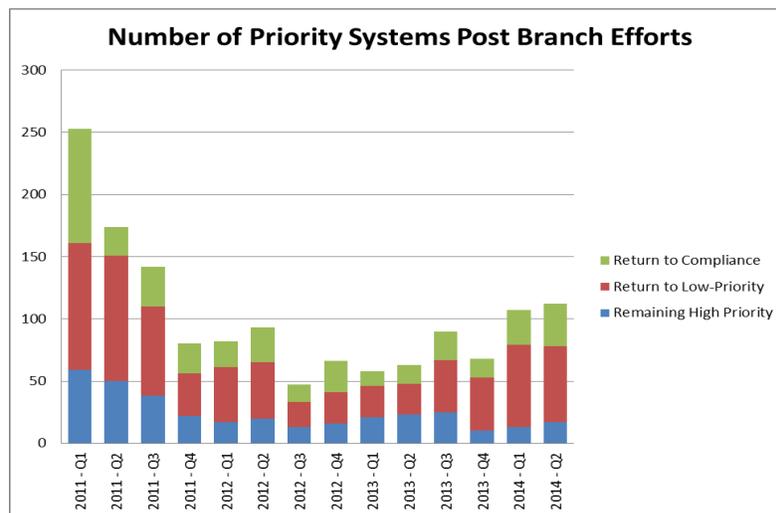
Strategy Implementation and Efficacy

Public Drinking Water Branch Capacity Development Efforts

Continued implementation of the strategy is critical to assist public drinking water systems in achieving and maintaining safe drinking water and sustainability. Also, the department must continue implementing the strategy in order to receive its full allotment of Drinking Water State Revolving Fund (DWSRF) capitalization grant funds from EPA. The DWSRF grant is used to provide low-interest capital improvement loans to public drinking water systems and to fund public drinking water protection efforts in Missouri, including but not limited to capacity development activities. These activities include assistance with rate-setting, compliance and leak detection assistance, operator training and other services to public drinking water systems through circuit riders, as described in further detail below.

Compliance Assistance and Enforcement

The department identifies priority non-compliant systems on a quarterly basis, in cooperation with EPA, using an enforcement targeting tool (ETT). The department also works with circuit riders to resolve existing drinking water system violations and to assist systems in becoming more proactive about compliance. The graph below illustrates a 71% reduction in the number of high priority non-compliant systems over the past three years due to these efforts.



Construction Permits and Permits to Dispense

The Department issued 655 permits to dispense water to the public in the last three years which resulted in a total of 2546 of the systems being properly permitted. The Department also issued 1063 construction permits to community and non-transient non-community public drinking water systems since October of 2011. These totals include 55 public drinking water systems which have completed the TMF requirements. TMF checklists have been developed to assist in the review of drinking water Construction Permit and Permit to Dispense applications for new community and non-transient non-community systems. These checklists help to ensure that new systems meet basic TMF requirements in accordance with Missouri Code of State Regulations 10 CSR 60-3.030.

Drinking Water System Project Funding

The department helps small community water systems improve their TMF capacity by providing grants for engineering report services and development of plans and specifications. These grants provide small systems with the funding to perform an entire system evaluation, including: evaluation of user rates and budgeting; long-term forecasting; potential regionalization options; anticipated operation; maintenance needs; and infrastructure needs.

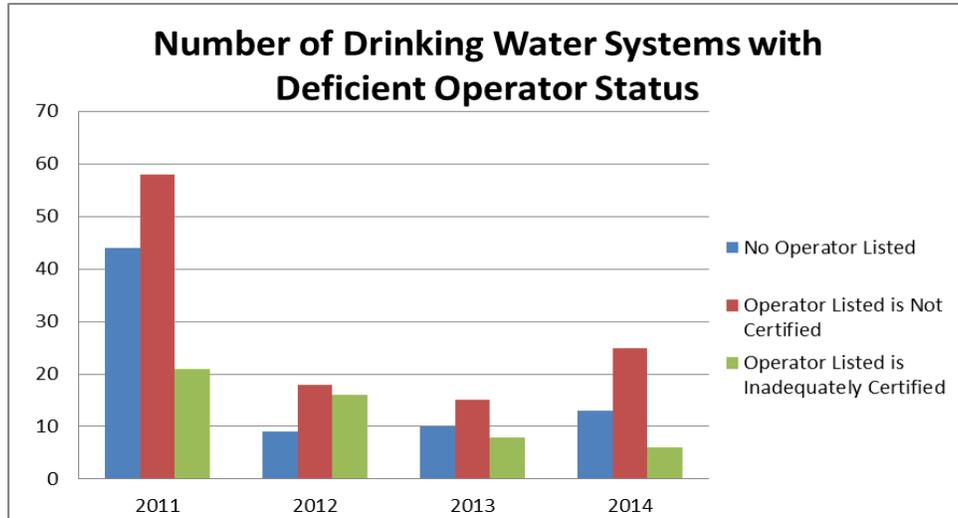
Since 2012 approximately \$5.6 million dollars has been awarded for engineering services; with \$3.3 million being awarded for the development of engineering reports and \$2.3 million awarded for the development of plans and specifications. The grants were distributed among 136 public drinking water systems. Additionally, there is a requirement for systems to demonstrate a good faith effort to apply to the Missouri Water and Wastewater Review Committee (MWWRC) for project development and construction funding.

Operator Certification

The Branch places a large emphasis on system operator knowledge through the promotion of continuing education and training. A drinking water voucher/coupon program provided \$664,010 to encourage continuing education for certified operators of public drinking water systems. The voucher program is used to assist small system operators with required continuing education and certification costs.

Pre-certification, advanced and one-on-one training is also provided, through the department and contract circuit riders, for systems without a properly certified operator or for operators needing additional training. Through these efforts, Missouri has achieved a 97% compliance rate for the number of systems with an adequately certified operator. Missouri currently has 1,659 water

systems that require a certified operator. The chart below shows the improvement in the number of systems that do not have an adequately certified operator going from 123 systems total in 2011 down to 44 systems in 2014. Typically, the total number fluctuates between 35 and 50 systems.



Source Water Protection

Protecting and ensuring the quality and quantity of source water is a vital management function for any water system. Providing source water protection training and information helps public drinking water system staff improve their understanding of the relationship between preventing contamination of their source water and the technical and financial impacts on their system.

To date over \$1.6 million in assistance has been offered to 109 public water systems through source water protection and abandoned well plugging grants. The department has also endorsed approximately 55 active Source Water Protection or Wellhead Protection Plans. These systems (combined) serve approximately 650,000 consumers statewide, or about 12.5% of Missouri's population served by Community public water systems.

Regional Office Capacity Development Roles

All departmental staff assist water systems with Capacity Development. Operational test data is used to identify systems with potential to have problems with future regulations. Regional office staff then prioritizes these systems for technical assistance. Assistance includes on-site visits, priority inspections, and training programs. Drinking water system operators are encouraged to ask questions by contacting the regional office for any additional information or assistance needed. Formal asset management training opportunities and tools have recently been added to regional office assistance capability as well as surface water treatment optimization training.

Sanitary surveys are performed every three years for community water systems, and every five years for non-community water systems, to assess all aspects of a public water system including its operation and management. The TMF capacity assessment component of the sanitary survey is extremely beneficial to both compliant and non-compliant systems in ensuring TMF capacity.

Missouri Geological Survey

Public drinking water systems interested in drilling a new well in Missouri are required to contact the Wellhead Protection Section of the department's Missouri Geological Survey (MGS) prior to construction. The Wellhead Protection Section provides proper casing depths for new wells, while regional office personnel are responsible for approving new well sites. The Wellhead Protection Section provides information pertaining to the requirements of their specific well construction (i.e. estimated total depth needed, geologic hazards, estimated yield, nominal well diameter, grout setting time and isolation radius for potential contamination) before any cost is incurred, thus aiding the system's ability to plan for the future. Well site surveys and proper casing depths are critical for ensuring the proper type of well is constructed. Construction is based on the planned use for the proposed well. The main types of wells normally used by the public for consumption of water include domestic, multifamily and public water supply wells. Public water supply wells are the only type of wells approved for public drinking water systems. Ensuring that proposed public water supply wells are identified correctly and constructed according to the appropriate standard is an important part of ensuring a public water system has a high quality and adequate source of water.

Contaminant Studies

The department, in cooperation with the U.S. Geological Survey has provided assistance to public drinking water systems with radionuclide compliance issues through packering studies. The results of the studies showed that in some cases elevated radionuclide levels can be resolved by sealing off the specified contributing geologic zones. In some cases this was not a feasible implementation option because radionuclide-producing intervals were also major water producing zones.

Technical Assistance Providers

Technical Assistance provider organizations, such as the Missouri Rural Water Association, American Water Works Association, Missouri Water and Wastewater Conference and the Wichita State University Environmental Financial Assistance Center play a vital role in helping water system owners and operators meet TMF capacity needs.

Missouri has about 1608 public drinking water systems falling into the “small system” category. These systems typically represent a large proportion of the demand for technical, managerial and financial assistance and the sheer number of them poses significant challenges to available department staff resources. Consequently, the technical assistance providers have been a valuable asset in increasing the amount of outreach and TMF assistance to newly operational systems with violations and existing systems in significant noncompliance. The technical assistance providers have also coordinated with the department in identifying TMF issues and finding solutions. Further detail regarding specific technical assistance efforts is presented below.

Missouri Rural Water Association (MRWA)

MRWA is very active, both on-site and off-site, in helping systems build and maintain TMF capacity. In 2012 the department expanded its efforts to assist public drinking water systems by utilizing four contracted MRWA staff, or circuit riders, to provide technical, managerial and financial capacity assistance around the State. The contract with MRWA is in its fifth year and may be renewed for one more year. Under department direction, the MRWA circuit riders provide assistance including, but not limited to, the following topics:

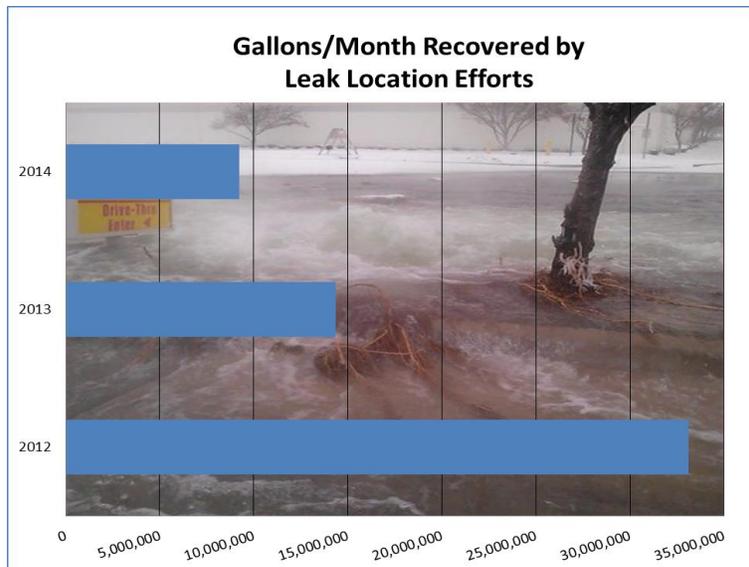
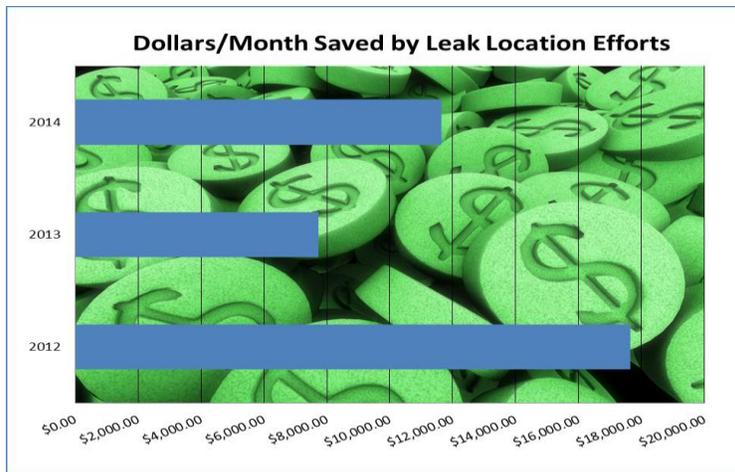
Water Rate Studies	Emergency Assistance
Strategic Planning	Flushing & Metering Programs
Chlorination Requirements & Guidelines	Line/Valve Location
Consumer Confidence Report	Leak Location
Compliance Issues	Water Loss Determinations
Board and Council Training	Operator Training & Certification
Well Drawdown Assessment (drought)	Regulatory Requirements
Permits to Dispense	Water System Partnerships
New Systems Assistance	Water System Mapping
Asset Management	Energy/Resource Conservation

Training and assistance provided improves the system’s TMF knowledge, improves the skill level of system personnel; increases awareness of available resources and responsibilities; and assists with system-specific issues.

One of the major efforts made by the circuit riders in the last three years consists of utilizing water main leak location equipment, purchased by the department with federal set-asides. The equipment is used by a circuit rider to assist systems in locating leaks in their distribution system. In the last three years the department, through the leak detection program, was able to save

drinking water systems approximately \$336,000 and over 56 million gallons of finished water. In some cases, leaks were undiscovered for 20 years or more, costing one system approximately \$80,000 over the course of a leak. It should be noted that only 80% of leak repairs have been reported by systems receiving the service, thus the overall savings are likely greater than cited above.

The following graphs illustrate the number of reported dollars and gallons saved each year, since 2011, as a result of the use of the leak location equipment. Cost information also varies by system and is largely dependent on degree of treatment the water received before being pumped through the system.



Continued and Future Strategy Implementation

The department will continue implementing the capacity development strategy and anticipates continued enhancement of its capacity development efforts over the next three years. The department is committed to ensuring that the capacity development program provides optimal assistance to public drinking water system owners and operators as they strive to provide safe drinking water to the public.

Goals

Goals for the upcoming years consist of developing improved data collection practices, which will aid the department in system tracking and will also improve outreach and assistance efforts of the department and circuit riders. The department will also continue to provide training to its own staff in order to improve knowledge of capacity development principles and enhance implementation of the strategy.

The department is continuing to improve the TMF capacity of Missouri's public drinking water systems. Each year more owners, operators, and local leaders are being educated about the importance of providing safe water to their consumers and/or communities as well as methods to effectively do so. The department continues to develop additional methods of providing this education. In summary, the department considers the Capacity Development Program a key component of its efforts to assist public water systems in providing safe and abundant drinking water to their customers. We will continue to explore ways to enhance these efforts by enhancing technical and compliance assistance, improving communication and leveraging partnerships.

Appendix

Definition of Terms

Capacity Development - Capacity development is a State effort to help public drinking water systems acquire and maintain technical, managerial, and financial capabilities to ensure they consistently achieve the public health objectives of the Safe Drinking Water Act and regulations reliably, and cost-effectively.

Community Water System (CWS) – A public water system that serves at least 15 service connections and is operated on a year-round basis or regularly serves at least 25 residents on a year-round basis.

Enforcement Targeting Tool (ETT) - A method for identifying water systems having the highest total noncompliance across all rules, within a designated period of time (with a higher weight placed on health based violations). It is used to help identify and prioritize systems for enforcement response.

Finished Water – Water that is safe for human consumption.

Non-transient Non-community Water System (NTNCWS) – A public water system that is not a community water system and regularly serves at least 25 of the same persons over six months per year.

Public Water System (PWS) – A system for the provision to the public of piped water for human consumption, if the system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. The system includes any collection, treatment, storage or distribution facilities used in connection with the system. A public water system is either a community water system or a non-community water system.

Sanitary Survey – An on-site engineering inspection and review of a public water system – its supply sources, treatment of supply sources, treatment facilities and distribution systems, for the purpose of evaluating their adequacy, reliability and safety for producing and distributing drinking water.

Significant Non-complier (SNC) – Those violators that present the greatest risk to public health and, therefore, are generally primary enforcement targets.

Technical, Managerial and Financial (TMF) Capacity - Technical capacity refers to the physical infrastructure of the water system, including but not limited to the adequacy of the source water, infrastructure (source, treatment, storage and distribution), and the ability of system personnel to implement the requisite technical knowledge. Managerial capacity refers to the management structure of the water system, including but not limited to ownership accountability, staffing and organization, and effective linkages to customers and regulatory agencies. Financial capacity refers to the financial resources of the water system, including but not limited to revenue sufficiency, credit worthiness, and fiscal controls.

Transient Non-community Water System – A public water system that is not a community water system, which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.