

**Michigan Department of Natural Resources and Environment  
Environmental Resource Management Division**

**ANNUAL REPORT ON  
CAPACITY  
DEVELOPMENT  
PROGRAM  
FISCAL YEAR 2010**

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## List of Acronyms

ACO	Administrative Consent Orders
Act 399	Safe Drinking Water Act, 1976 PA 399, as amended
ARRA	American Recovery and Reinvestment Act
AWWA	American Water Works Association
CCR	Consumer Confidence Report
CWS	Community Water System
DACO	District-Initiated ACO
DDBPR	Disinfectants and Disinfection Byproducts Rule
DNRE	Michigan Department of Natural Resources and Environment
DWRF	Drinking Water Revolving Fund
eDWR	Electronic Drinking Water Reporting
ERG	Expense Reimbursement Grant
ERMD	Environmental Resource Management Division
ERP	Emergency Response Plan
FAP	Financial Action Plan
FY	Fiscal Year
GWR	Ground Water Rule
IDSE	Initial Distribution System Evaluation
LHD	Local Health Department
MCL	Maximum Contaminant Level
MIGWWP	Michigan Interactive Groundwater for Wellhead Protection
MOR	Monthly Operation Reports
MRWA	Michigan Rural Water Association
NCWS	Noncommunity Water Systems
NTNCWS	Nontransient Noncommunity Water Systems
OTCU	Operator Training and Certification Unit
PWSID	Public Water System Identification Number
RCAP	Rural Community Assistance Program
RUS	Rural Utilities Service
SDWA	Federal Safe Drinking Water Act
SDWIS/State	Safe Drinking Water Information System/State
SNC	Significant Noncomplier
SWIPP	Surface Water Intake Protection Program
TMF	Technical, Managerial, and Financial
USDA-RD	United States Department of Agriculture – Rural Development
USEPA	United States Environmental Protection Agency
VA	Vulnerability Assessments
WARN	Water/Wastewater Agency Response Network
WHPP	Wellhead Protection Program

## **1 Introduction**

The 1996 Amendments to the federal Safe Drinking Water Act (SDWA) added provisions for each state to develop a capacity development program. The objective of the program is to enhance public health protection by helping water systems to develop and maintain the technical, managerial, and financial (TMF) capacity they need to consistently deliver a safe, reliable, and abundant supply of drinking water to all customers.

The purpose of this document is to demonstrate to the United States Environmental Protection Agency (USEPA) that the state is implementing a capacity development strategy as required in the SDWA, Section 1420(c)(1)(C), or risk losing 20 percent of the annual Drinking Water Revolving Fund (DWRf) allotment that the state is otherwise entitled to receive under the SDWA, Section 1452.

This report corresponds to the criteria set forth in the USEPA memo "Reporting Criteria for Annual State Capacity Development Program Implementation Reports" dated June 1, 2005. The report is due to the USEPA within 90 days of the end of the reporting period. Michigan's reporting period is the state fiscal year (FY) that ends on September 30, so this report is due by December 30 of each year. Elements discussed in this report are:

- New Systems.
  - Identify legal authority.
  - Identify control points.
  - List of new systems.
- Existing Systems.
  - Identify tools and activities.
  - Identify systems.
  - Identify needs and provide assistance.
  - Review implementation and address findings.
  - Modify strategy.

## **2 New Systems Program**

### *2.1 Identify Legal Authority*

The legal authority remained unchanged during the reporting period. The capacity development program is implemented by the Environmental Resource Management Division (ERMD) of the Michigan Department of Natural Resources and Environment (DNRE) through amendments to the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), by application of capacity development policies and guidance documents and through cooperation and partnerships with other agencies.

2.2 *Identify Control Points*

The control points remained unchanged during the reporting period. As outlined in the *New Community Water System Capacity Guideline Document*, dated May 1, 2000, new systems must demonstrate TMF capacity before serving water to the public. The new systems program relies on two control points: construction permits, which are required by law, and final inspection, which is required by policy. Generally, a construction permit is issued based on the technical capacity of the proposed system. For Community Water Systems (CWS), the financial and managerial capacity requirements may still be pending while the system is under construction. Approval to commence operation is not granted until after an acceptable final inspection and approval of a financial plan and operations plan that address financial and managerial capacity. For nontransient noncommunity water systems (NTNCWS), the ERMD has delegated the authority to the local health departments (LHDs) to review, approve, and issue construction permits. When water systems begin the permit application process, the LHD helps them outline their financial and managerial capacity. Prior to receiving approval to commence operation, the NTNCWS must submit a financial plan and a managerial plan that includes a contingency plan and designation of a certified operator.

2.3 *List New Systems*

Lists of CWS and NTNCWS that became active during the last three FYs are in Appendix A. The lists indicate which systems appeared on a Significant Noncomplier (SNC) list during those years. No new CWS appeared on an SNC list while seven percent of new NTNCWS did so. As was the case in last year's analysis, a new system's appearance on an SNC list is primarily due to a failure to collect samples during the first monitoring period for lead and copper. Half of the NTNCWS that appeared on an SNC only failed in one requirement—to collect these initial samples. Missed monitoring is a capacity issue and, therefore, is not taken lightly by the staff. Despite field staff's best efforts, violations incurred by new systems appear to be the result of the inevitable learning curve with monitoring requirements. The method by which a system is designated an SNC includes a single failure to monitor for disinfection byproducts, or failure to monitor for lead and copper in the initial monitoring period, or a single failure to distribute a Consumer Confidence Report (CCR). When adjusted for this learning curve, the percent of new systems compared to systems overall in each system type category is indicated in the following table:

FY 2008 to FY 2010	CWS		NTNCWS	
	New	New & Existing	New	New & Existing
Number of systems	14	1,410	57	1,384
Number of systems on an SNC list	0	44	8	131
Adjusted number of systems on an SNC list *	0	26	4	102
Percent of systems on an SNC list	0	1.8	7	7

\*Omitted systems that appeared on an SNC list for only one of the following: a single failure to sample lead and copper in the initial monitoring period, or a single failure to sample disinfection byproducts, or a single failure to issue the CCR.

As a final note, the percent of new to all NTNCWS dropped from the FY 2007 to FY 2009 time period that was ten percent and eight percent, respectively.

### 3 Existing Systems Program Tools and Activities Used

The *Capacity Development Strategy for Existing Public Water Systems*, dated August 1, 2000, lists the programs, tools, and/or activities to help systems acquire and maintain capacity. This section describes each of the major program elements, the target audience, and a discussion of how each helps to achieve and enhance capacity.

#### 3.1 Sanitary Surveys to Evaluate Systems

Target: CWS and Noncommunity Water Systems (NCWS)

Capacity of existing systems is assessed through sanitary surveys, on-site surveillance visits, and through the construction permit process.

In NCWS, sanitary surveys are conducted every five years. Construction permits and inspections are required when new wells are installed or treatment is added. A change in classification from transient to NTNCWS also results in a capacity assessment of the existing system. These former transient NCWS are existing systems and, therefore, are not included in the list of new systems in Appendix A.

In CWS, sanitary surveys are conducted every third year by ERMD field staff. This frequency coincides with the requirements of the series of Surface Water Treatment Rules and the Ground Water Rule (GWR). Sanitary surveys result in systems being rated satisfactory, marginal, or deficient. Ratings are based on compliance with health-based standards, monitoring and reporting requirements, qualified operator requirements, and requirements in Act 399 or TMF sufficiency, such as well construction, general and contingency plans, and financial requirements for privately-owned systems. The ERMD staff detail their sanitary survey findings and recommendations in a letter to the system. These letters may include a list of milestones with dates by which the items are expected to be addressed. Options for capacity assistance may also be offered, such as recommending a financial assessment or contacting available technical assistance providers for specific assistance. These evaluation letters help systems understand the severity of the deficiencies and prioritize response activities.

The following table summarizes data on CWS sanitary surveys, visits, and construction permits in recent years. Note that the number of construction permit applications received has declined significantly, likely due to a downturn in the state's economy.

<b>CWS Evaluations, Visits, and Construction Permits</b>			
	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>
Number of Sanitary Surveys Conducted	508	448	419
Percent Rated Satisfactory	85	88	80
Percent Rated Marginal	11	10	11
Percent Rated Deficient	4	5	6
Percent Not Rated	0	0	3
Number of Visits	1,666	1,713	1,593
Number of Construction Permits Received	1,203	927	767
Percent Issued Within 10 Business Days of Receipt *	69	64	66

\*This only includes construction permits issued during the year they were received.

The surveillance visits listed in the previous table are conducted by field staff according to policy that requires the following frequency:

Type of CWS	Smaller/Less Complex	Larger/More Complex
<b>Wholesale customer supplies</b>	Once per three years, though most field staff strive to visit these systems annually	Once per year
<b>CWS with no treatment*</b>	Once per three years for very small systems	Once per year
<b>CWS with treatment*</b>	Twice per year for systems employing treatment that is less than "complete treatment"	Four times per year for systems employing "complete treatment"

\*Treatment employed for public health protection. Excludes water softeners or other point of entry aesthetic treatment.

In addition to scheduled surveillance visits and sanitary surveys, field staff visits water systems to investigate problems discovered as a result of routine monitoring. If water system issues need to be elevated to local officials, the community leadership may include field staff on the agenda of council or board meetings.

### 3.2 One-on-One Technical Assistance and Consultation

Target: CWS and NCWS

The ERMD and LHD field staffs are the primary implementers of the capacity development program. Water system operators develop a relationship with field staff who are the primary contacts for capacity development. Each CWS is served by ERMD staff from 1 of the 8 district offices, and each NCWS is served by staff from 1 of the 44 LHDs under contract with the ERMD. A primary objective of the ERMD field staff and the LHD is to provide excellent customer service from the construction permit process for new infrastructure through the continual assessment and oversight process during operation. Field staff achieves that objective through assistance to systems during site visits, at meetings and conferences, during training events, and consultation by telephone and e-mail. Field staff attends, participates, and presents at periodic regional operator meetings to discuss upcoming regulations, regional issues, and to network with operators and managers.

The NCWS program staff of the ERMD maintains communication with each of the 44 LHDs during the year. This communication occurs routinely via phone calls, e-mail, joint office and field work, and group and individual training. Also quarterly data reviews and annual evaluations of each of the 44 LHD's work are conducted to assure and maintain water system compliance. Training of LHD staff is conducted to inform, explain, and discuss new and updated program issues and procedures. During FY 2010, the NCWS program staff was working with select LHD to investigate means to enhance training within the evaluation process (see discussion in Section 5.1). The NCWS staff also routinely presents topics at environmental health conferences.

To increase reliability, gain efficiencies, and improve water quality, field staff serves as consultants to encourage regionalization, foster consolidation, and create partnerships among water systems. For example:

- The city of Muskegon and its customers were all due to update their reliability studies. Rather than spend years developing reliability studies for the city and each of its customers, the ERMD staff suggested in FY 2009 that the wholesale and customer systems develop a combined reliability study. A combined study would more effectively look at how water is managed, the hydraulics of the combined distribution system, and other issues relative to all the systems. The city took a major role in negotiating with customer systems. It was decided the cost share would not be based on population per se, but on current and future needs as some systems were expected to grow (greater cost share) while others were already fully developed (lesser cost share). The traditionally difficult issue of selecting a firm was solved by a contractor who suggested that proposals be accepted only from firms that none of the participants had used previously. In FY 2010, a draft reliability study was submitted to the ERMD for comment.
- The city of Flint water treatment plant in Genesee County serves as standby to the single pipeline source from Detroit. In FY 2009, the plant confidently served water to the public for the first time without issuing a boil water advisory. This accomplishment was made possible because they were able to obtain entry point disinfection data after installing a dechlorinator in order to discharge to a nearby river during test runs that demonstrated the water treatment plant could produce safe water. Their successes have continued in FY 2010 as they applied for and received a construction permit for an intermediate chlorinator. The resulting clean bacteriological history at the filter effluent before reaching the reservoir compliments the FY 2009 post chlorination project to provide high quality water.
- The city of Flint and Genesee County are moving forward in their search for an alternative source rather than relying solely on purchased water from Detroit, as mentioned in last year's edition of this report. Together with a few Lapeer County communities, they have created an informal authority to collaborate on their effort. The ERMD field staff are meeting and consulting with the communities as needed.

Countless other instances of one-on-one technical assistance help water systems gain TMF capacity.

### 3.3 *Other Public Water System Program Efforts*

Tools to help systems comply with monitoring and reporting requirements include:

- Individual monitoring schedules for each CWS and NCWS. These schedules are based on each system's applicable monitoring waivers and schedule in the standard monitoring framework. To supplement the schedule, staff may enclose or provide an Internet link to the following, depending on that year's monitoring requirements:
- Lead and Copper Report and Consumer Notice of Lead Result Certificate. This form provides a fill-in-the-blank version of the consumer notice for the convenience of systems with limited computer ability.
- Drinking Water Lead & Copper Sampling Instructions. The system may provide this to the occupants that will be performing the sampling.

- Bacteriological Sample Siting Plan. This form incorporates GWR triggered monitoring requirements.
- Stage 1 Disinfectants and Disinfection Byproducts Rule (DDBPR) Monitoring Plans.
- List of approved laboratories.
- Annual Pumpage/Usage Report For Community Water Supply (applicable to CWS that do not submit Monthly Operation Reports [MOR] with monthly pumpage).
- Cross Connection Report. Systems use this form to demonstrate ongoing implementation of their Cross Connection Control Program. The form was found to be confusing to small system operators because some items did not apply. A simpler version was developed in FY 2010 for systems serving only residential customers.

Venues to communicate monitoring and reporting requirements include:

- Reminder phone calls or post cards.
- Reminder letters. Systems that have not yet completed their annual or less frequent monitoring receive a reminder within 30 to 90 days before the end of the monitoring period. This gives them adequate time to meet the requirement and prevent a violation.
- Lead and copper reminder letters. Lead and copper monitoring is so confusing that this reminder letter also serves as monitoring guidance.
- Lead and Copper 90th percentile letter or action level exceedance letter. These letters outline the results of the system's monitoring and remind systems of further requirements, such as distributing the Consumer Notice of Lead Result, for conducting water quality monitoring or installing corrosion control treatment.
- CCR reminder letter. Each spring, ERMD field staff reminds systems of the annual requirement and provides the following tools to comply. A variety of templates are made available including the Internet link to the USEPA *CCRwriter*, as well as the guidance documents *Preparing Your CCR* and *Reporting TOC on the CCR*, as applicable.
- The LHDs inform the NTNCWS of the administrative rule requirement to prepare a water quality report that contains a summary of compliance monitoring data for NTNCWS that serve K-12 schools and day care centers.
- Violation letters, discussed in Section 3.4 below, include requirements to post public notice, when applicable. Templates for typical monitoring and reporting violations, and many state drinking water violations, are available to field staff. Staff either provides the template for the system to edit and place on its own letterhead, or staff may prepare the final public notice for the system to distribute.

Tools to help systems manage the operational requirements include:

- MOR requirement. Systems must report pumpage, treatment information, and operational monitoring conducted during the month. Field staff often instructs operators on how to complete the MOR. Staff reviews each MOR to assure compliance with treatment techniques and to evaluate treatment processes for optimal operating practices. In FY 2009, ERMD program staff finalized the MOR template for those water systems using less than complete treatment. The ERMD field staff is transitioning CWS onto this new form when appropriate.
- Emergency Response Plan (ERP) template. In response to administrative rule changes enhancing planning requirements (see Section 5.2.1), four editions of the former Contingency Plan template were combined into one ERP template.
- Privately-owned CWS requirements. Staff of the ERMD routinely advises owners, managers, and operators of privately-owned systems about the regulatory requirements for operating a water system. Under Michigan administrative rules, new privately-owned CWS are subject to requirements to ensure they are able to provide an adequate supply of drinking water. Proposed systems must stipulate to certain requirements: obtain a local government's refusal to accept ownership of the system; establish an escrow account available to the DNRE for immediate repair or maintenance of the system; and agree to seek ERMD approval before transferring ownership. These provisions ensure private owners understand their responsibilities prior to establishing the water system. Amended administrative rules, promulgated in December 2009, increases the minimum required escrow amount that has been unchanged since 1979. Owners must still stipulate to certain conditions, but amendments allowed staff to forgo the cumbersome Administrative Consent Order (ACO) by which to stipulate. Rather, a more streamlined *Stipulate to Conditions for Private Ownership of Public Water Systems* form was developed in FY 2010.
- Well site inspections and approvals. The LHD and the ERMD field staff conduct inspections and approvals of wells serving the NCWS and CWS, respectively.
- Guidance documents: The ERMD staff develops and distributes guidance documents as needed:
  - *Water Well Disinfection Manual* was updated in 2003.
  - *Suggested Practices* was updated in 2008 and outlines design, construction, and operation of CWS.
  - The *Cross Connection Rules Manual* was updated in FY 2008 and outlines program requirements.
  - *New Community Water System Capacity Guideline Document* developed in 2000 guides field staff and owners of proposed or new systems through the process. It includes a capacity assessment checklist, a financial workbook, policies related to new systems, and templates and forms for planning purposes.

- Source water protection guidance documents are available for systems pursuing these efforts.
- NCWS program guidance documents are, the *Noncommunity Staff Reference Manual*, completed and distributed in 2009, and the *WaterTrack Operators Manual* for LHD staff to implement the drinking water program. For individuals pursuing certification to operate a NCWS is the study guide *Level 5 Drinking Water Operators Guide*, available on the Internet.
- USEPA tools. In addition to state-developed products, the field staff distributes, as needed, USEPA tools and guidance documents, promotes the Check Up Program for Small Systems and other system capacity development and sustainability tools, and promotes USEPA webinars.

Field staff hosts and presents material at meetings, conferences, and training sessions throughout the year for water system personnel, consulting engineers, and local decision makers. Ongoing activities include serving as instructors at several operator training courses throughout the year, speaking at other meetings and conferences related to drinking water, and attending USEPA sponsored Web casts. Specific activities in FY 2010 include:

- The ERMD field staff presented the *MDNRE Update* at each of 8 Michigan Section, American Water Works Association (AWWA), regional meetings updating participants on new rule implementation. New rules updates and training was also presented at ERMD field staff meetings usually held quarterly.
- The ERMD central staff conducted workshops to assist Schedule 3 and 4 CWS to complete a Standard Monitoring Plan Report Form to comply with the Stage 2 DDBPR. The workshops were designed so each of the 25 participants that brought their sample results could leave with a rule compliant monitoring plan. All CWS required to prepare an Initial Distribution System Evaluation (IDSE) Plan and complete an IDSE Report are accounted for. Program staff of the ERMD worked individually with each system to complete these requirements. The field staff will retain these documents in preparation for compliance monitoring that begins in 2012.
- The DNRE cosponsors a quarterly newsletter, *Water Works News*, with the Michigan Section, AWWA. The newsletter is distributed to members and all CWS, including approximately 700 privately owned CWS that might not otherwise receive drinking water-related information. The DNRE share of the distribution cost is funded by the capacity development set-aside of the DWRF through a Joint Funding Agreement with the Michigan Section, AWWA. Articles in the "MDNR Updates" section cover timely topics of interest such as compliance with new rules, promotions for new tools or Internet sites, and the latest ERMD contact list.

A **level 5** operator is certified to operate a Class D-5 treatment system and/or a Class S-5 distribution system. Class D-5 is a NCWS with limited treatment. Class S-5 is a NTNCWS with no treatment, or a CWS with no treatment and a limited distribution system. Examples are a manufactured housing community and a subdivision.

- The NCWS staff occasionally participates in association conferences relevant to NCWS systems, such as the Michigan Manufactured Housing Recreational Vehicle & Campground Association, the Michigan School Business Officials, the Michigan Ground Water Association, and the annual Groundwater Conference sponsored by the Michigan Environmental Health Association.
- An ERMD representative attended the 7th Annual USEPA Workshop on Small Drinking Water Systems in Cincinnati, Ohio.
- The ERMD program staff presented at the Construction Permit Workshop to review the basics of applying for a construction permit and to review some typical mistakes that delay the permit process. Approximately 70 consulting engineers and water system owners attended. These workshops began in 2007 because field staff believed that plans and specifications submitted with the construction permit applications are sometimes incomplete or of poor quality. Feedback has been so successful that they have continued.
- The ERMD program staff worked with the Michigan Department of Community Health, Oral Health Program, to develop and implement a Fluoride Grant Program to promote public water system fluoridation by offering grants to water systems wishing to purchase new or replacement fluoride feed equipment. Seven water systems were awarded grants in FY 2010.
- To continue to offer quality training to ERMD staff and water systems, the ERMD takes advantage of the webinars. Certified operators can meet continuing education requirements with USEPA or AWWA sponsored Web casts. The ERMD promotes webinars and encourages field staff to forward information to water systems so they can participate at their site. With budget cuts, the ERMD has been able to host only free webinars, so it appreciated the AWWA Research Foundation offering *Algal Toxins: Source Water Management and Treatment* at no charge.

The ERMD will continue to take advantage of other opportunities to interact with water systems and their consulting engineers, municipal leaders, and others interested in drinking water issues.

### 3.4 *Enforcement*

Target: CWS and NCWS

Evaluations and compliance information become the basis for enforcement.

In an FY 2009 effort to gain consistency across districts, templates were developed for violation letters and further refined in FY 2010. When a system violates a requirement they should receive a letter that clearly states what was violated, when the violation occurred, how to return to compliance, and when to respond. It is believed that enforcement will be viewed as more predictable; therefore, systems will make a greater effort to comply to avoid enforcement.

When systems fail to return to compliance, escalated enforcement, including ACO and DNRE orders, can be initiated. Before escalated enforcement is used, many systems return to compliance when they are assessed administrative fines for monitoring and

reporting requirements. Water systems generally remain in compliance with monitoring and reporting requirements after receiving a fine. During FY 2008 to 2010, the number of fines was 53, 45, and 30, respectively. This represents 81 different CWS that received a fine at least one time for at least one violation in the three-year period. Failure to monitor for total coliform lead the way with 44 violations, followed by 26 lead and copper monitoring violations, and 23 failures to distribute the CCR. Small systems represent all but two of the systems that received fines, which is expected as large systems typically have the resources and systems in place to ensure monitoring is timely and performed correctly.

When a fine is not applicable or does not prevent further violations, the ERMD moves on an escalating series of enforcement actions that include a Notice of Violation, ACO, and in rare cases, a DNRE order. However, field staff prefers technical assistance over enforcement to bring systems back into compliance. In FY 2009, the city of Muskegon Heights failed to update the state required reliability study and conduct inspections according to its cross connection program. The economically depressed city was struggling to remedy deficiencies noted in sanitary surveys and violation letters. In FY 2010, the ACO was terminated following the completion of all of the required elements of the ACO, including a reliability study and capital improvements plan. The field staff is now following up with a sanitary survey and expects to upgrade the overall rating of the system.

To streamline enforcement, the district-initiated ACO (DACO) is to be used under certain circumstances instead of the traditional ACO. This process bypasses enforcement staff involvement; the ERMD field staff drafts the DACO using templates and calculates penalties based on enforcement staff guidance. The enforcement staff conducted field staff training on DACOs and the penalty calculations in January and February 2009. To date, the village of Akron is the only CWS under a DACO for failure to meet firm capacity, but several DACOs in other nondrinking water program areas have been used.

Some water systems are not willing to enter into an ACO. In those cases, the ERMD must escalate the enforcement level to a DNRE order. In 2009, such an order was issued to the city of Three Rivers in St. Joseph County to continuously disinfect the city water supply. Groundwater systems are not required to disinfect; however, the city has a history of total coliform violations and is one of very few systems of similar size in Michigan that does not chlorinate as a means of preventing and eliminating contamination that may enter the distribution system. The city preferred to remain unchlorinated and an order, as opposed to an ACO, was issued. As is its right, the city requested a public hearing, which was held in 2010. The DNRE received public comment and reissued the order with minimal changes. The city filed with circuit court to reserve its right to appeal the order, but has not gone forward with an appeal. The city is expected to complete modifications needed to continuously disinfect by September 2012.

Each LHD is required to conduct enforcement necessary to address NCWS in noncompliance. The ERMD field staff assists the LHD upon request, and in extreme cases, the ERMD central staff may take the enforcement lead or refer it to the USEPA, Region 5, when state resources are unavailable. Typical tools used by the LHD include administrative fines, informal hearing, local license suspension procedures, and bilateral compliance agreements (similar to the DACO for CWS).

### 3.5 Operator Training and Certification

Target: CWS and NCWS

Due to amendments to Act 399, a properly certified operator must be available at each of the 1,400 CWS and 1,384 NTNCWS and at the 75 transient NCWS that employ treatment for public health purposes. Operators maintain their certification by meeting continuing education requirements through training offered in a variety of venues.

#### 3.5.1 Operator Training and Certification Unit (OTCU)

The OTCU of the ERMD provides over 30 training courses each year and certifies nearly 80 organizations and training providers that offer other opportunities for continuing education including online courses. The OTCU has also approved a list of hands-on training or “HOT” programs that can provide operators with at least 50 percent practical experience in a three or more hour training session.

The OTCU also administers the Expense Reimbursement Grant (ERG) Program for operators employed by systems serving fewer than 3,300 people to cover approved training registration fees up to \$300 per individual. For more information, see the *2010 Operator Certification and ERG Annual Report*, dated August 18, 2010, submitted to the USEPA.

Many of the training courses coordinated by the OTCU are taught by ERMD field staff under a Joint Funding Agreement between the DNRE and the Michigan Section, AWWA. The ERMD treatment specialist schedules instructors and also instructs both the Basic and Advanced Cross Connection Control seminars and the Water Treatment and Distribution System 2.5-day Short Courses.

During on-site visits or other consultation opportunities, field staff discuss the certification status of the operator and may suggest training sessions to hone skills or prepare for the examination required to obtain or to upgrade certification.

#### 3.5.2 Small CWS and NCWS Training

Under contract with the ERMD, 15 LHDs provide continuing education for the level 5 operators. The intent is to provide regional training for NCWS, but any operator employed by a CWS with no treatment and a limited distribution system may attend. As stated in the *2010 Operator Certification and ERG Annual Report*, 164 operators earned continuing education credits and another 14 attended to prepare to write their level 5 exam.

Staff of the NCWS conducted train-the-trainer sessions for LHD staff. Topics range from current requirements and practices to discussions of new requirements and regulations. Surveillance visits and sanitary surveys are additional opportunities for the LHD staff to provide training for NCWS operators.

For the past several years, ERMD staff has conducted training specifically for small CWS. Attendees are primarily operators, managers, or owners of manufactured housing communities, though in recent years an increasing percent of attendees are from other types of small CWS. General topics covered new regulatory requirements, monitoring and reporting, communicating with the public, and operational issues. Special topics

change each year to keep the participants interested. The special topic in the 2010 training was the Walkerton, Ontario *E. coli* incident. A total of 170 persons attended at one of five locations around the state.

### 3.6 DWRF

Target: CWS and Nonprofit NCWS

The 1996 Amendments to the SDWA authorized the creation of a revolving fund to provide low-interest loans for repairs or enhancements to help water systems comply with the SDWA. The capacity development provisions of the SDWA are funded through the DWRF allotment.

Michigan's DWRF is coadministered by the DNRE and the newly established Michigan Finance Authority. The DNRE handles all programmatic issues, while the Finance Authority serves the DWRF Program with its financial expertise. Prior to the creation of the DWRF, project financing for CWS was left largely to the local unit of government or to individuals investing in their own systems. Michigan's drinking water program relies heavily on proper water system design and construction to prevent jeopardizing the safety of both the source and finished water. To that end, priority of DWRF projects favors those communities that are participating in a Source Water Protection Program.

"In her second executive order of 2010, Governor Jennifer Granholm has eliminated 10 state finance authorities [including the Michigan Municipal Bond Authority, that formerly coadministered the DWRF] and combined all of their functions into one agency. The new Michigan Finance Authority, established under E.O. 010-2, will help make state government more 'efficient, responsive and cost-effective,' Ms. Granholm said. The authority will be an autonomous agency within the Department of Treasury."

*Gonger News Service Michigan,*  
Thursday, March 4, 2010

In FY 2010, \$80 million in low-interest loans was committed for 21 projects bringing the total since the fund's inception in 1998 to \$651 million for 223 projects. Some systems receive commitments from the DWRF but may not be ready to proceed with the project until they are able to assure the revenues will be generated to repay the loan. In these cases, the system remains on the priority list for the next year. Of the projects committed, 171 have been completed for a total cost of \$409 million and the loan payments are revolving back into the fund.

Commitments in FY 2010 include projects to increase systems' capacity to reliably provide an adequate supply of water. Many of the projects involve replacing aging infrastructure, others to provide redundancy, and still others to meet drinking water standards. The city of Benton Harbor in Berrien County is the year's largest project of \$14 million to upgrade the water treatment plant driven by treatment technique violations of the turbidity level and the inability to provide continuous service during power outages. In the meantime, one of Benton Harbor's large consecutive systems has terminated their water contract with the city and is building their own water plant. As a result, the city's project may be downsized, but currently construction on the new plant is well underway. Exeter Township's project in Monroe County is connecting in a NCWS and several private homes that currently rely on a hauled system for potable water because of the inability to obtain reliably safe drinking water from wells. The township plans to extend its agreement with Monroe County to continue purchasing water through 2038. Water mains in Grosse Pointe Woods, in Wayne County, were installed prior to the 1940s and some will be replaced with DWRF funding.

One of the plans considered for FY 2011 is a Genesee County project connecting in two manufactured housing communities exceeding the arsenic Maximum Contaminant Level (MCL) and another exceeding both the arsenic and combined radium MCL.

### 3.7 Source Water Protection

Systems are continuing to take steps to protect their drinking water sources.

#### 3.7.1 Groundwater Source Protection

Target: Municipal CWS and Not-for-Profit NCWS

Minimum isolation areas around drinking water wells are established in the Michigan well construction code and in Act 399. Programs in the DNRE, such as the Groundwater Discharge Permit Program and the On-Site Waste Water Program, reference these isolation distances as they review applications for discharge permits or site approvals to assure the facility or activity will be protective of the drinking water source. Act 399 requires the isolation area around a proposed well site be owned or controlled by the CWS or the NCWS.

To expand beyond this long-standing but minimal concept of source water protection, ERMD staff are actively encouraging municipalities to also participate in Wellhead Protection Program (WHPP) activities and apply for a WHPP grant to fund the activities. Municipalities are encouraged to apply for a WHPP grant using a 50 percent local match to fund activities involved in protecting their public water supply well capture zones (based on a ten-year time-of-travel). Of the 444 municipal systems in Michigan using groundwater as a source of drinking water, 249 are involved in some aspect of wellhead protection, such as performing a delineation, inventorying the potential sources of contamination, and planning for emergencies. Of those 249 systems, 187 have completed all the steps and have an approved WHPP. As a result, 87.6 percent of the population of the state served by municipal systems using groundwater is in communities taking action to protect their groundwater sources or purchase water from communities involved in protecting their sources. The WHPP grants for FY 2011 are currently on hold due to budget considerations. The WHPP grant cycle for FY 2010, announced in August 2009, awarded \$642,900 to 43 communities. Three communities are new to the wellhead grant program: the village of Lakeview in Montcalm County, the city of Williamston in Ingham County, and the city of Potterville in Eaton County.

A pilot program entitled *Protecting Drinking Water with Innovative Tools* began in FY 2007 to target source protection in small CWS and NCWS. During the workshops, ERMD and LHD staff used the Michigan Interactive Groundwater for Wellhead Protection (MIGWWP) tool that scientifically maps or delineates the recharge area for a water system based on existing information in state of Michigan databases. Participants used the MIGWWP output and a self-assessment tool to identify actions to reduce the risk of source water contamination and improve source protection practices. The last of four pilot workshops took place in Jackson County in late 2009. MIGWWP will be rolled out on a statewide basis in early FY 2011.

### 3.7.2 Tools as a Result of Water Withdrawal Legislation

Target: CWS, NCWS, and Other Interested Parties

The Natural Resources and Environmental Protection Act, 1994 PA 451, was amended in 2006 and further amended in 2008 in response to increased water use demands, pressure to divert water outside the Great Lakes Basin, and an increase in groundwater use conflicts. The legislative amendments were intended to enhance the state's ability to manage the water resources of Michigan.

Since 2006, any proposed new or increased large quantity withdrawal, defined as a water withdrawal of 70 gallons per minute or more, requires an environmental assessment and approval prior to making use of the water resource. An aspect critical to the continued operation of CWSs in accordance with the law governing management of Michigan's water resources was the grandfathering of all preexisting water uses. Referred to in the law as "baseline capacity," the ERMD established baseline capacities for each existing CWS in April of 2007. New or increased large quantity withdrawals above the baseline capacity require an assessment to determine the likelihood the withdrawal will harm fish populations in nearby streams, rivers, and lakes. CWSs are allowed to construct additional capacity in exchange for the elimination of the established baseline capacity. The establishment of said baseline capacities allowed for the continued operation of CWSs throughout the state consistent with their historic water use trends and previous investments in capacity development.

### 3.7.3 Surface Water Source Protection

Target: CWS and NCWS Using Surface Water

The Surface Water Intake Protection Program (SWIPP) is the surface water counterpart to the WHPP. Under this program, communities develop partnerships with surrounding communities to identify and take action to protect the area around the intake. The six communities that have completed an SWIPP serve small to medium-sized populations; two of these, Northwest Ottawa County Water System and the city of Holland in Allegan County, were approved in FY 2010. A funding source for SWIPP grants has been identified and a matching grant program equivalent to that used in the WHPP was incorporated into the administrative rules in December 2009. Like an approved WHPP, an approved SWIPP will result in additional priority points being awarded to DWRP applicants, encouraging more CWS to develop one.

Monitoring can alert utility personnel of changes in water quality in time to respond quickly. To achieve this in the connecting channels between Lakes Huron and Erie, the ERMD worked with federal and local governmental agencies to install a continuous, real-time water quality monitoring network in the St. Clair River, Lake St. Clair, and Detroit River. Thirteen drinking water treatment facilities equipped with a range of analytical devices have continued to operate in FY 2010. The monitoring system includes data transmission, data visualization, automated notification/alarm service, data archiving, and a publicly accessible Web site for data retrieval. In addition, rapid toxicity test equipment is being used to monitor water distribution systems in Southeast Michigan served by these surface water intakes. Nearly instantaneous communication is key to protecting surface water intakes in the Lake Huron to Lake Erie corridor because of the rapid rate of flow, periodic chemical spills, and corresponding changes in water quality. The city of Monroe in Monroe County is the last plant located on the

connecting channels and is scheduled to receive the monitoring equipment in FY 2011. Unfortunately, financial issues may jeopardize the long-term governance and funding of the Huron to Erie Alliance for Real-Time Monitoring and Information System.

### 3.8 *Financial Assessments*

Target: CWS Serving Fewer Than 10,000 People That are Either Municipally Owned or Subject to Association Bylaws

To help existing CWS improve financial capacity, the ERMD conducts financial assessments of systems that serve a population of less than 10,000 and that could benefit from a financial assessment. As a result, several systems that are currently in compliance, but are concerned about future challenges such as complying with new rules, are making progress toward that end by improving their financial capacity. Funding for these assessments is from the technical assistance to small systems set-aside of the DWRF. Systems serving more than 10,000 people may also participate in the program, but the funding would be drawn from the capacity development set-aside.

A financial expert in the DWRF Program conducts the assessment of the community's existing financial health and develops a Financial Action Plan (FAP). The assessment is a review of financial and legal documents and an on-site meeting with system representatives. The financial expert has found that the most productive on-site meetings are those that are attended by the system operator, a local official, and the ERMD field staff person that oversees the water system. This group mix seems to help communication among the water supply, the local officials, and the ERMD field staff, especially when a technical capacity project must be funded with increased rates or an improved budgeting process. All three parties will continue to be invited to the on-site meeting.

An FAP is a tailor-made, comprehensive plan to strengthen the system's financial situation based on the assessment. Short- and long-range goals are identified in the FAP followed by a step-by-step process to reach the goals. Useful tools to help complete the steps are included with the FAP. The assessment is not designed to provide funding; however, financing options are discussed at the on-site meeting. Further information on obtaining funding is provided with the FAP. The system is expected to carry out the FAP, and the ERMD is available to assist when requested. The FAP is also intended to be a guide for the field staff. An outline of a typical assessment report is included in Appendix B.

Applying for a DWRF loan can be a daunting task for small cities and villages. However, some communities that undergo a financial assessment develop the financial acuity and motivation to apply for a loan through the DWRF or the Rural Utilities Service (RUS) of the United States Department of Agriculture - Rural Development (USDA-RD). In other cases, as communities gather their financial documents, some decide to use the information to pursue funding rather than undergo a financial assessment.

In FY 2010, three financial assessments were completed and a fourth was being finalized. It was recommended that the city of Charlotte in Eaton County separate their water and sewer funds and implement a method of budgeting to fund their capital improvements plan. The village of Pigeon in Huron County has experienced increased costs of purchased water from the city of Caseville, but has not raised rates to cover

those costs. The FAP provided the tools and steps needed to ensure the village has the legal framework to maintain appropriate funding levels. The city of Au Gres in Arenac County hopes to strengthen its financial safeguards by amending its water use ordinance to require an annual review of operating expenses and require that revenues cover expenses. Finally, the FAP for Kinross Township in Chippewa County recommended separating water and sewer funds into two distinct Enterprise Funds and maximizing the interest bearing vehicles for each fund.

### 3.9 Security

Target: CWS and NCWS

The DNRE Water Security and Emergency Management Program is responsive to the various federal programs and the needs of the public water systems. Planning, training, and coordinating are all a part of the effort to emphasize emergency management for all hazards; terrorism and malevolent acts as well as weather-related incidents and accidents.

All day training was held for the members of the Michigan Section, AWWA at the *6th Annual Water Security Summit: Water Security and Emergency Management*. Topics included United States Army portable water treatment units, tabletop exercises, the Michigan Water and Wastewater Agency Response Network (WARN), Risk Management Plans, Disaster Recovery and Emergency Water, and Business Continuity Plans.

Topics presented at the Michigan Section, AWWA Regional training included: all hazards security and emergency management, vulnerability assessments, ERP, Incident Command System, National Incident Management System, WARN, and distribution system vulnerability.

The USEPA has eliminated the Water Sector Security funding as of FY 2010. As a result, further contracting is curtailed. To help offset that loss of funds, grant applications were submitted to the Michigan Department of State Police, Emergency Management and Homeland Security Division, for the FY 2010 United States Department of Homeland Security to continue the efforts of recent years to conduct tabletop exercises and to train small water systems in emergency response planning. These proposals did not receive funding, but we will continue to search for possible funding sources for these projects that we believe have increased the managerial capacity of water systems.

### 3.10 Technical Assistance Providers

Target: CWS and NCWS

The efforts of other organizations deserve highlighting due to their efforts to enhance capacity.

#### 3.10.1 Michigan Rural Water Association (MRWA)

The MRWA helps rural communities serving fewer than 10,000 people with administrative, managerial, or operational concerns. Services include on-site visits, training courses, conferences, rates studies, and a resource library. Each field technician visits at least 35 rural or RUS eligible public water systems per month, but will

provide assistance to any public water system. In each of the last three fiscal years seven to nine technicians have spent over 2,900 hours on over 2,500 on-site visits. These on-site visits help utilities with regulatory, operational, managerial, and financial concerns. Field technicians also work with water systems to put together wellhead protection and source water protection plans. Each year the MRWA conducts about 90 operator training courses across the state. This year, the MRWA conducted 78 training sessions and trained 297 operators in management, 890 operators in operations, 194 operators for certification exam reviews, and 199 operators at the MRWA Annual Conference. Some conferences and training conducted in FY 2008 through FY 2010 include:

- Protecting Utility Customers from Identity Theft.
- Hands on Rate Study Workshop.
- Workplace Safety Conference.
- Project Management.
- DNRE Water Supply Cross Connection Report Workshop.
- Water Distribution and Water Limited Treatment Review classes.
- Excavation & Trenching Safety.
- Electrical Training.
- Technical Maintenance Practices for Water Plants.
- Water Math.
- Ten Best Kept Water and Wastewater Process Management Secrets.
- Technical Maintenance Practices for Water and Wastewater Plants.
- Permit Required Confined Space.

The MRWA receives referrals from several sources including referrals from the DNRE staff. Examples of assistance provided this fiscal year includes:

- Cross Connection Programs and inspections: village of Newberry, in Luce County; village of Detour, in Chippewa County; city of Pinconning, in Bay County; village of Gagetown, in Tuscola County; and the city of Marlette, in Sanilac County.
- Long Term 2 Enhanced Surface Water Treatment Rule: Arenac County cities of Au Gres and Omer and the Sims-Whitney Water Authority.
- Stage 2 DDBPR IDSE Report: Iosco County's city of East Tawas, Baldwin Township, and Au Sable Township.
- Inspecting a water distribution project: city of Harrisville, in Alcona County.

- Responding to a fecal coliform positive sample (village of Akron, in Tuscola County) and total coliform sample (village of Kingston, in Tuscola County).
- ERP preparation and valve exercising program: city of Zilwaukee, in Saginaw County.
- Water intake problems: city of Caseville, in Huron County.
- Source Water Protection Plans: Northwest Ottawa County Water System; Union Township, in Isabella County; Beecher Metropolitan District, in Genesee County; village of Stockbridge, in Ingham County;, and the city of South Lyon, in Oakland County.
- Water system operations: Kalamazoo Lake Sewer and Water Authority, in Allegan County and the village of Addison, in Lenawee County.

### 3.10.2 Rural Community Assistance Program (RCAP)

The RCAP provides free technical assistance to rural communities with low to moderate median household incomes and populations of less than 10,000 to develop, manage, and operate water and wastewater systems affordably while maintaining system sustainability. Staff of the RCAP work on site with local community officials, community leaders, and system operators to assess capacity needs, review funding options, provide public education, prepare and facilitate public communication, help select consultants, prepare environmental assessments, and financing applications to help communities apply for funding for capacity projects. Local officials are taking advantage of the RCAP services to achieve financial solvency through rate studies as well as help with project selection, compliance with existing and upcoming rule requirements, capital improvements planning, financing options, and Vulnerability Assessments (VA) and ERP development. Funding for this national nonprofit program is provided by the USEPA, the Health and Human Services/Office of Community Services, and USDA-RD as part of the Farm Bill. Michigan's RCAP is administered by the Michigan Community Action Agency Association. Additionally, the RCAP received American Recovery and Reinvestment Act (ARRA) funding from the USDA-RD for a one-year period to assist communities that are receiving ARRA funding for their projects from the USDA-RD.

Over \$44 million in loans, grants, and local funds were secured this year for capacity enhancement projects across the state. Michigan's RCAP provided technical assistance on 89 projects located in 81 communities across the state, working in 46 different counties. Eight communities received assistance with income surveys; over two dozen projects received assistance in completing environmental assessment and applications for financing improvements. Many received assistance in preparing or updating their VA and ERP and with compliance issues.

With the DNRE, the RCAP cohosted one of the five small systems training sessions mentioned in Section 3.5 above. Board member training was conducted for the village of Alpha, in Iron County. Topics included roles and responsibilities, the Michigan's Open Meeting Act, Red Flag Rules (requiring an identity theft prevention program), Robert's Rules of Order, and emergency response. Michigan's RCAP also continues to work with the Michigan WARN Steering Committee, AWWA and other organizations to promote

safe and sustainable drinking water and wastewater treatment systems. All services are provided to eligible communities at no cost.

### 3.10.3 RUS

The RUS provides loans, grants, and loan guarantees to construct, extend, or rehabilitate water, sewer, solid waste, and storm sewer systems in rural communities serving 10,000 or fewer people. Priority is given to low income communities, those with water or sewer system DNRE violations, communities with leveraged funds from other sources, water or sewer system expansion projects, and communities that are working toward a regional approach to combine their separate water and sewer systems. The goal of the USDA-RD remains to help the most needy, low income communities, targeting those at 60 percent of the state median household income, which is \$27,461 or less.

From the time of application, the USDA-RD oversees the financial, engineering, and construction of the community's projects. Loans are serviced by local area offices until satisfied. Financial reports are reviewed on an annual basis to ensure sustainability of the funded project. Compliance reviews and security inspections are completed every three years, which gives the USDA-RD an opportunity to meet with the borrower and discuss the system.

Small communities with populations under 10,000 have taken advantage of funding for drinking water projects in recent years: in FY 2010, 30 projects totaling \$73,088,000; in FY 2009, 27 projects totaled \$77,158,000; and in FY 2008, 19 projects totaled \$37,689,000.

In addition to low-interest loans, grant funds are available to assist eligible communities in keeping the end user costs at a reasonable level. The ratio of RUS loans to grants is approximately 70 to 30. To ensure funding goes to communities that protect and manage their water system, applicants must have a wellhead protection plan, install water meters, and fund short-lived asset and replacement accounts. System security is receiving continued focus as applicants must complete a VA and ERP before loans are closed. The USDA-RD also requires the VA and ERP of systems serving less than 3,300 people, even though they are not required under the USEPA.

The USDA-RD administers a Technical Assistance Training Grant Program that funds tax exempt private nonprofit organizations that have the proven ability, background, experience, legal authority, and capacity to provide technical assistance or training on a regional basis. Successful applicants are typically multijurisdictional groups, such as the National Drinking Water Clearinghouse, National Rural Water Association, and Rural Community Assistance. The RUS also administers the Household Water Well Grant Program that establishes revolving loan programs through nonprofit organizations to assist homeowners with financing their private household water well systems.

### 3.11 *Electronic Reporting and Data Management*

Target: CWS and NCWS

Electronic reporting and data management are tools to help the central office to identify and analyze statewide trends in contaminant levels, treatment, and distribution

operations, and compliance. This ability will allow the ERMD to focus assistance more effectively.

#### 3.11.1 Electronic Drinking Water Reporting (eDWR)

Target: CWS Primarily, Though Elements Designed for Laboratories That Also Serve NCWS

The successful implementation of the Internet-based reporting system for discharge monitoring reports prompted Michigan to expand the project to include eDWR. The eDWR system will provide for online submittal of drinking water laboratory results and treatment plant operational data. Participation will be voluntary, and a water system may choose at any time to no longer participate. The collection of data will allow the ERMD to query certain parameters to assess capacity on a system wide and statewide basis. Although competing priorities have delayed the launch of this tool, progress is still being made toward implementation. Future plans include providing other required reports online.

#### 3.11.2 Tracking Compliance Using Safe Drinking Water Information System/State (SDWIS/State)

Target: CWS

SDWIS/State, the federally supported database for tracking drinking water compliance activities, stores actual analytical results entered either manually or via eDWR reporting discussed above. This tool allows for more automated compliance determinations, which is particularly necessary when staff resources are stretched. In FY 2005, the CWS program began tracking Total Coliform Rule compliance monitoring in SDWIS/State, and in FY 2010, this was expanded to include Lead and Copper Rule tracking. In addition, the CWS Program has been preparing compliance monitoring schedules for other rules for migration from the program's legacy database to SDWIS/State. The project will take at least through FY 2011 to complete.

#### 3.11.3 WaterTrack

Target: NCWS

The LHD staff use the WaterTrack database to track NCWS inventories, certified operator information, sanitary survey reports, capacity development, construction permits, monitoring results, monitoring violations, violations of MCL, and NCWS compliance reports. The information is monitored by the DNRE staff that oversees the NCWS program. WaterTrack uses an outdated platform, is largely unsupported, and does not contain capability to track all current rule requirements. A rewrite or transfer to the SDWIS/State is necessary in the very near future.

### **4 Identify Existing Systems in Need**

The strategy used to select and prioritize systems for assistance is outlined in the *Capacity Development Strategy for Existing Public Water Systems*, dated August 1, 2000, and remains unchanged. Briefly, the ERMD looks at all of the following criteria:

- Compliance information.

- Sanitary surveys and results of surveillance visits.
- Construction permit bans and correspondence from the ERMD addressing potential bans.
- Operation and maintenance concerns.
- Field staff input.

The sanitary surveys and surveillance visits are ongoing, and the frequency with which systems are identified for capacity assistance is continual.

## **5 Identify Capacity Development Needs and Provide Assistance**

In recent years, the economy has forced severe budget cuts. The budget woes are not limited only to state government, but shared with LHD and public water supplies. Early in 2010, the governor reorganized several state departments including merging two into the DNRE. A long anticipated "early out" incentive for state employees has been enacted. The upcoming exodus of institutional knowledge is creating a deep feeling of uncertainty. How to do more with less in FY 2011 and beyond is a paramount concern and factors into every decision. Working under ongoing resource challenges, the ERMD still identified needs and took steps to address them in 2010.

The ERMD believes the four areas identified in the 2009 edition of this report still needed work. In addition to those areas, the ERMD concentrated on recurring total coliform positive events. Finally, ERMD recognized the needs that exist at the national level and is participating in workgroups to tackle them.

### *5.1 Minimize Recurring Total Coliform Positive Events*

The NCWS Program became increasingly concerned with recurring total coliform positive events and MCL violations, in spite of an excellent compliance rate among NCWS overall. The recurring nature of these events represents a potential exposure to unsafe drinking water and a significant expense of resources. It was determined that changes are necessary to improve identification of problem systems and resolve them—in other words "find and fix" the problem once and for all. This effort requires partnering among the ERMD, LHD, and well drilling contractors.

To determine how best to accomplish this, a survey was conducted to identify causes of ongoing positive events and the means and practices used to investigate and resolve those events. Two observations were made. First, sanitary well construction and disinfection procedures on new wells could minimize recurring positives once the new or replacement well is in operation. Second, improving the effectiveness of identifying causes, corrective actions, and follow up should reduce the duration of the event, public exposure, and expenditure of resources.

Recommendations were to improve training for well drillers and LHD and to identify a means for more effective monitoring under certain circumstances. It is believed that a better monitoring protocol for new/replacement wells and for existing wells with positive results may identify ineffective disinfection practices before a well is returned to service and thereby prevent these wells from evolving into recurring problems. As a result, an effort is being made to pool the resources of the ERMD, the LHD, and the well drillers to

get back to the basics of understanding coliform, practicing sanitary well construction, applying proper disinfection, developing and conducting adequate monitoring protocols, and implementing good investigative techniques.

Two activities are ongoing:

- LHD training and evaluations: It is believed that providing more technical assistance and more timely training will improve NCWS services more effectively. Possibly revamping the annual program evaluation process, during which much of the LHD training is normally conducted, could be made more effective. The ERMD is piloting a new LHD NCWS evaluation process based both on quarterly data reviews (an element of the current process), but also on ERMD interactions with LHD in the field over the course of the year while conducting sanitary surveys, resolving violations, issuing construction permits, and overseeing difficult treatment systems. This evaluation method may be a better use of ERMD resources in the midst of new and more complex regulatory oversight requirements and is expected to provide more effective training and consultation to the LHD.
- New Manual: The ERMD has finished drafting the Abandoned Water Well Plugging Manual focusing on methods, materials, equipment, and requirements. Beginning in 1998, the DNRE conducted abandoned well management training for well drillers and LHD, the agency that requires plugging of existing wells when a replacement well is drilled. The training emphasized cooperation between the drillers and their LHD, and as a result, a total of over 110,000 abandoned wells have been plugged, and the plugging rate approaches 90 percent at residential replacement well sites. Use of this new manual will help assure plugging is done properly.

In FY 2011, the ERMD hopes to work more closely with the Michigan Ground Water Association, which represents well drillers, to find ways to more effectively prevent recurring positive events.

## 5.2 Follow Up on Needs Identified in 2009

Areas identified to be addressed in FY 2009 are continuing to be addressed.

### 5.2.1 Implement New Federal Rules

The ERMD program and field staff has continued to host and participate in training on new rules. As mentioned earlier, new rule information was presented at each of the eight Michigan Section, AWWA regional meetings, at each of the five small systems CWS training, at quarterly field staff meetings, and during LHD visits by NCWS staff. Also mentioned earlier was the workshop to assist Schedule 3 and 4 CWS to complete the Standard Monitoring Plan as required by the Stage 2 DDBPR. Reminders of new rule changes are included in correspondence with water systems whenever possible.

New training opportunities are needed for NCWS operators of systems that do not treat. Staff are using and promoting the *Level 5 Certified Drinking Water Operator Guidance Manual*, finalized in 2009, as a tool for persons preparing to take the certification examination as well as existing operators who need guidance. As mentioned in the *2010 Operator Certification and ERG Annual Report*, ERMD staff will increase available

training in FY 2011 targeting small system and NTNCWS certified operators. Training programs will include modules developed by the DNRE, also being used by LHD, and they will develop new training modules to keep certified operators updated with regulatory compliance, roles, responsibilities, and latest trends and technology in operating, maintaining, and managing public water supplies.

#### 5.2.2 Capture Sanitary Survey Data

Detailed sanitary survey data is captured on individual Excel spreadsheets for every groundwater and surface water CWS. To create a tool to enhance decision making, the ERMD program staff is continuing to investigate options to capture that data in a queryable format.

Currently, ERMD staff track basic survey data, specifically survey date, rating of the eight required elements, and significant deficiency tracking in a central database. The ERMD hopes to fully transfer this basic survey tracking to SDWIS/State in the near future.

#### 5.2.3 Implement Newly Revised Nonfederal Provisions of the Administrative Rules

The amendments to the administrative rules adopting the new federal rules were promulgated in December 2009. This rule package provided an opportunity to update the nonfederal provisions of the administrative rules. The ERMD is using all available opportunities to communicate these changes to water supplies.

- Improve capacity in very small systems and in licensed facilities. New provisions removes exceptions that applied to licensed facilities and small water systems; such as cross connection control program, distribution and raw water pumping capacity, standby power, general plans, private ownership provisions, and contingency plans.
- Provide oversight to NCWS that treat to improve aesthetics. The rule clarifies that any system that employs treatment must obtain a construction permit, obtain a certified operator, and submit an MOR when in operation.
- Diversify the type of operator training received and update operator certification rules. Upper level certified operators now must receive a minimum number of training hours in technical and managerial subjects. Conditions under which a certificate may be revoked were clarified in the rule.
- Enhance planning. In addition to removing exceptions for small systems and for licensed facilities, the amended rules expand the general plan, reliability study, and contingency plan requirements. Field staff are working with CWS as they update these documents to comply with the new requirement to consider fire protection needs in municipal CWS, to prepare 5 and 20 year capital improvement plans for publicly owned CWS, to better elaborate on future use projections, and to expand their emergency planning. As systems comply with these enhanced planning provisions, they are realizing the importance of asset management.

- Provide a source water protection grant program for surface water systems. The rules provide for a surface water intake protection grant program to disperse money available through the DWRF set-aside under assistance to state drinking water programs in Section 1452g(2) of the SDWA.
- Enhance technical capacity. Staff are working with systems as needed to implement other changes in the rules, such as ensuring systems have adequate pressure at all times and properly sample when infrastructure is returned to service.

#### 5.2.4 Encourage Asset Management

As the infrastructure gap continues, field staff is stressing asset management concepts during interactions with CWS and their local decision makers. Good water system operation and management cannot be mandated, though the ERMD hopes the enhanced planning provisions of the recently amended administrative rules will foster better water system management. Several field staff attended the USEPA hosted webinar, *Energy Efficiency*, to prepare themselves to promote better management to their systems.

#### 5.3 Participate in National Workgroups

Program staff in the ERMD are involved in national workgroups with other states, USEPA headquarters and regional offices, the Association of State Drinking Water Administrators, and others to improve implementation or affect change to federal regulations and national policy. A NCWS program representative has provided ongoing input to those working to revise the Total Coliform Rule. The ERMD water treatment specialist is working with other states and the USEPA to develop recommendations for the anticipated long term revisions to the Lead and Copper Rule. The ERMD program staff responsible to implement the CCR and Public Notification Rules in Michigan is participating in a workgroup to improve the implementation of these rules given that regulatory changes are not likely. Participating in national efforts to improve implementation of the drinking water program will likewise improve systems' overall capacity.

### 6 Review Existing Systems Program Implementation and Address Findings

Sanitary surveys are the primary tool to evaluate capacity and identify needs for specific systems. A long-standing DNRE policy dictates sanitary survey frequencies for all types of CWS and NCWS. Follow up on deficiencies in any system has been a long standing practice and is required of the LHD under contract with the DNRE. As stated in last year's edition of this report, the ERMD was driven by the federal GWR and the requirement to identify and pursue resolution of significant deficiencies to draft two policies. The first policy sets frequencies for sanitary surveys and the second sets criteria to identify significant deficiencies and establishes procedures to resolve them. Both policies became effective in January 2010.

Between sanitary surveys, ERMD field staff makes routine on-site visits to review the technical, managerial, and sometimes financial aspects of a CWS and to establish channels of communication with the CWS. The knowledge and familiarity gained by both parties as a result of routine visits are keys to maintaining a cooperative relationship in achieving mutual goals. The frequency of these visits has been dictated

in policy based on long-standing practice. Due to the steep budget cuts and anticipated further resource shortfalls, the ERMD is revisiting that policy to set criteria by which routine frequencies may be reduced when resources dictate.

Requests for financial assessments continued to remain sluggish this year. Rather than attempt to increase the number of financial assessments, the ERMD has begun to follow up with previously assessed water systems informally during routine on-site visits by field staff and more formally by the financial expert that conducted the original assessment. Formal follow-up assessments are currently underway in two communities serving fewer than 10,000 people: the city of Charlotte, in Eaton County, and the village of Sand Lake, in Kent County.

## **7 Modify Existing Systems Program Strategy**

The strategy remained unchanged during the reporting period. The DNRE is continuing to implement the original strategy of moving from capacity assessment through assistance to development.

## **8 Summary**

Michigan is continuing to implement a program for new systems and a strategy for existing systems as set forth in May and August 2000, respectively. The new systems' program retains the legal authority and the control points established in 2000. A list of new systems in the last three years is included in this report and indicates which systems have appeared on an SNC list during those years. New NTNCWS appeared on an SNC list primarily due to a single failure to monitor as required in the initial monitoring period.

The strategy for existing systems established in 2000 has remained the same though the specific tools and activities used to implement the strategy have been added, removed, or altered as needed. The drinking water program continually identifies systems in need of capacity development primarily through the sanitary survey process. During the reporting period, needs were identified and discussions were held to determine what areas could be enhanced. A review of implementation of various activities of the strategy occurred and changes were made. The strategy was not modified.

**Appendix A: List of New Systems**

**New CWS  
FY 2008 through FY 2010**

PWSID <sup>1</sup>	CWS Name	FY Active in SDWIS/State <sup>2</sup>	Date Active CWS	SNC <sup>3</sup>
MI0000322	AUSTIN COMMONS II	2010	12/21/09	
MI0001258	CEDAR CREEK TOWNSHIP	2010	11/06/09	
MI0004778	NORTH MOORE ESTATES	2010	09/20/10	
MI0006693	TULLYMORE CLUBHOUSE AND CAMELOT VILLAGE	2010	07/01/10	
MI0061700	CURRY HOUSE	2010	08/02/10	
MI0002291	FILLMORE TOWNSHIP	2009	10/30/08	
MI0062720	GOLDEN ORCHARDS	2009	08/04/09	
MI0000044	CEDAR HOLLOW CONDOMINIUMS	2008	04/17/08	
MI0002124	EMERY PINES	2008	11/29/07	
MI0003947	LONG LAKE VILLAGE SUB	2008	01/01/08	
MI0003966	LYNX GOLF VIEW	2008	08/14/08	
MI0004276	MERRILL, VILLAGE OF	2008	10/29/07	
MI0005268	PERE MARQUETTE TWP - WELLS	2008	09/05/08	
MI0005824	ROSEBUSH MANOR SENIOR LIVING COMMUNITY	2008	01/01/08	

<sup>1</sup> Public Water System Identification Number

<sup>2</sup> Safe Drinking Water Information System/State

<sup>3</sup> Noted CWS on an SNC list in the years covered by this report.

FY	New CWS	SNC
2010	5	0
2009	2	0
2008	7	0
<b>Total</b>	<b>14</b>	<b>0</b>

**New NTCWS  
FY 2008 through FY 2010**

PWSID <sup>1</sup>	NTCWS Name	FY Active in WaterTrack <sup>2</sup>	Date Active NTCWS	SNC <sup>3</sup>
MI0320654	MICHIGAN FINE HERBS	2010	04/05/10	
MI2521363	DIPLOMAT PHARMACY	2010	04/08/10	
MI2521460	PEYTON'S LEARNING PLACE	2010	04/21/10	
MI3720204	OASIS ALTERNATIVE EDUCATION	2010	11/25/09	
MI3820833	HEAVEN'S HELPERS CHILDCARE	2010	06/02/10	
MI4120954	RIVERIDGE PACKING - STORAGE	2010	12/03/09	
MI5220200	TEACHING FAMILY HOMES SCHOOL	2010	05/17/10	
MI5420424	BIG RAPIDS TOWNSHIP INDUSTRIAL PARK	2010	03/01/10	
MI6220251	FIVE CAP INC - NEWAYGO CENTER	2010	10/23/09	Yes
MI7520304	MONSANTO	2010	02/23/10	
MI2120212	CEDAR HILL FAMILY MEDICINE	2009	8/12/09	
MI2521602	GOODRICH PLAZA	2009	04/24/09	
MI3020302	BIRD LAKE BIBLE SCHOOL <sup>4</sup>	2009	10/21/08	
MI3320202	DART CONTAINER III	2009	09/03/09	
MI3820830	M.D.O.T. SERVICE CENTER	2009	02/10/09	
MI4120946	MEIJER #248 SOLON TWP	2009	04/10/09	
MI4520263	NORTHPORT POINT	2009	10/22/08	
MI4720097	FACE PROPERTIES LLC	2009	10/29/08	
MI4720346	OLD 23 COMMERCE CENTER	2009	02/11/09	
MI4720440	20TH CENTURY BUILDING COMPANY	2009	10/16/08	
MI4720465	20TH CENTURY BUILDING COMPANY	2009	10/17/08	
MI4720636	FOR KID'S SAKE EARLY LEARNING CENTER/ ECONO P	2009	09/24/09	Yes
MI4720781	20TH CENTURY BUILDING COMPANY	2009	10/17/08	
MI4720899	DR. MIKA'S MEDICAL OFFICES	2009	10/23/08	
MI5620085	KIDS TIME	2009	01/07/09	
MI6322874	OAKWOOD ELEMENTARY	2009	08/19/09	
MI6520304	ERMDRC SCHOOLS - KIRTLAND BUILDING	2009	08/26/09	
MI6720166	WHITE PINE SPRING	2009	04/03/09	
MI6720192	MUSKEGON RIVER YOUTH HOME S.O.	2009	03/03/09	
MI7520302	FRESH SOLUTION FARMS, LLC	2009	10/21/08	
MI0320650	SEBRIGHT PRODUCTS, INC.	2008	09/04/08	
MI0820404	APPLETREE CHRISTIAN LEARNING CENTER	2008	02/08/08	
MI1820268	MID MICHIGAN COMMUNITY ACTION AGENCY <sup>4</sup>	2008	01/11/08	
MI1820276	NEMCSA DAY CARE	2008	08/28/08	
MI1920612	SUMMIT CHRISTIAN ACADEMY	2008	10/02/07	
MI2521601	GENOVA PRODUCTS	2008	09/29/08	
MI2620440	LYLE INDUSTRIES INC	2008	04/15/08	Yes

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PWSID <sup>1</sup>	NTNCWS Name	FY Active in WaterTrack <sup>2</sup>	Date Active NTNCWS	SNC <sup>3</sup>
MI2920616	GOOD SHEPHERD CHURCH	2008	11/06/07	
MI3420266	MENARD'S INC.	2008	01/08/08	
MI3420268	PORTLAND FEDERAL CREDIT UNION	2008	05/02/08	Yes
MI3420269	RIDGE KING	2008	01/05/08	
MI3820825	SIS'S IMAGINATION STATION	2008	10/31/07	Yes
MI4120941	SONSHINE CORNER LEARNING CENTER	2008	06/16/08	
MI4620655	BIRTH, TODDLER AND BEYOND #2 <sup>4</sup>	2008	01/08/08	
MI4720655	HARTLAND COMMERCE CENTER	2008	12/10/07	
MI4720908	GARDEN GATE MONTESSORI <sup>4</sup>	2008	09/15/08	
MI4720914	ABED PROFESSIONAL BUILDING	2008	02/26/08	
MI4720916	TMA ONE - EAGLE ONE	2008	02/29/08	
MI4720919	EXCELDA MANUFACTURING	2008	05/23/08	
MI4720925	DOWN ON THE FARM LEARNING CENTER	2008	08/26/08	
MI5420415	HUNTEY CLUBHOUSE	2008	08/06/08	Yes
MI6322855	HIGHLAND STATION	2008	10/10/07	
MI6322867	LAFONTAINE AUTOMOTIVE	2008	05/29/08	Yes
MI6322868	HEATHER HIGHLANDS	2008	04/15/08	
MI6820206	AMI INDUSTRIES	2008	10/15/07	
MI8120581	CHILDREN'S CREATIVE LEARNING CENTER, DBA	2008	01/22/08	
MI8320296	MDOT	2008	08/25/08	Yes

<sup>1</sup> Public Water System Identification Number

<sup>2</sup> WaterTrack is the database of the NCWS, from which SDWIS/Federal is populated.

<sup>3</sup> Noted NTNCWS on an SNC list in the years covered by this report.

<sup>4</sup> This system was previously reported in an earlier FY. We believe it was still proposed at that time.

FY	New NTNCWS	SNC
2010	10	1
2009	20	1
2008	27	6
<b>Total</b>	<b>57</b>	<b>8</b>

## **Appendix B: Outline of a Typical Financial Assessment and Financial Action Plan**

### ***Financial Assessment***

Introduction: Population, location, transportation routes, and community characteristics; description of the water system and major projects or concerns such as expansion, securing loans, and meeting new drinking water standards; and major financial shortfall such as the need for a rate methodology.

Requested Information: Budget, last two years of audited records, water use and water rate ordinances, latest rate ordinance or resolution, recent rate or feasibility study, and contract or service agreements with outside customers.

Submitted Information: List of information provided.

Analysis: Summary or highlights of each of the documents provided by the supply.

On-Site Meeting: Date and attendees; and list of items discussed, such as the financial concerns, the billing method, and major recent projects.

### ***FAP***

*Goal One: Develop the financial capability to fund present and future needs.*

Task 1: Develop a capital improvement projects plan.

- Step 1: List anticipated water projects.
- Step 2: Estimate the cost of each project to be funded.
- Step 3: Project the anticipated date the project is to begin.
- Step 4: Calculate the dollar amount necessary to be set aside annually.
- Step 5: Establish a line item in the budget for capital improvement expenditures.

Task 2: Develop and implement a rate setting methodology.

- Step 1: Identify water system expenses.
- Step 2: Identify replacement expenses and fund the replacement account.

*Goal Two: Establish the legal and managerial capability to protect the water system.*

Task 1: Develop a penalties section in the water ordinance.

Task 2: Adopt the amendment to the ordinance.

### ***Tools Included With FAP***

Sample resolution, sample water use and rate ordinance, service agreement checklist, DWRf informational brochure, project plan preparation guide, and securing a DWRf loan fact sheet.