

Michigan Department of Environmental Quality
Water Bureau

CAPACITY DEVELOPMENT REPORT TO THE GOVERNOR 2005

September 2005

Water Bureau
525 West Allegan Street
P.O. Box 30273
Lansing, MI 48909-7773
517-241-1300
www.michigan.gov/deq

| | |
|--|-----|
| Executive Summary | iii |
| List of Acronyms..... | v |
| 1.0 Introduction..... | 1 |
| 1.1 CDP Overview | 1 |
| 1.1.1 New Systems | 2 |
| 1.1.2 Existing Systems..... | 2 |
| 1.2 Involved Parties | 2 |
| 2.0 Effectiveness of the CD Strategy | 3 |
| 2.1 New Systems..... | 3 |
| 2.1.1 CWS | 4 |
| 2.1.2 NTNCWS..... | 4 |
| 2.2 Existing Systems..... | 4 |
| 3.0 Progress Toward Improving TMF..... | 5 |
| 3.1 Compliance Rates..... | 5 |
| 3.2 Multibarrier Approach..... | 6 |
| 3.2.1 Source, Treatment, Distribution, and Operation | 6 |
| 3.2.2 Protect the Source | 7 |
| 4.0 Tools Used to Improve TMF..... | 7 |
| 4.1 DWRF..... | 7 |
| 4.2 Field Staff | 8 |
| 4.3 Source Protection | 10 |
| 4.3.1 Source Water Assessments to Protection | 11 |
| 4.3.2 WHPP..... | 11 |
| 4.3.3 Abandoned Well Management Program (AWMP) | 12 |
| 4.4 Operator Training and Certification | 12 |
| 4.4.1 Operator Training and Certification Unit (OTCU)..... | 12 |
| 4.4.2 Small CWS and NCWS..... | 13 |
| 4.4.3 MHC | 13 |
| 4.5 Financial Assessments | 14 |
| 4.5.1 New Systems | 14 |
| 4.5.2 Existing Systems..... | 14 |
| 4.6 Technical Assistance Contracts | 16 |
| 4.7 Security..... | 16 |
| 4.8 Technical Assistance Providers | 17 |
| 4.9 Enforcement | 18 |
| 4.10 Electronic Reporting..... | 19 |
| 5.0 Summary | 19 |
| Appendix: Outline of a Typical Financial Assessment and Financial Action Plan..... | A |

Executive Summary

The 1996 Amendments to the federal Safe Drinking Water Act (SDWA) added provisions for each state to develop a Capacity Development Program (CDP). The objective of the CDP is to enhance public health protection by helping water systems to develop and maintain the capability, or capacity, they need to consistently deliver a safe, reliable, and abundant supply of drinking water to all customers. Capacity has three components:

- Technical – Physical infrastructure and operational ability
- Managerial – Personnel expertise and institutional and administrative capabilities
- Financial – Monetary resources

The purpose of this document is to report to Governor Jennifer M. Granholm the effectiveness of Michigan's capacity development strategy. Each state risks losing 20 percent of the annual Drinking Water Revolving Fund (DWRf) allotment if it does not submit a report to its Governor by September 30 of every third year or does not make the report available to the public under Section 1420(c)(3) of the SDWA.

Many of the capacity development efforts have been in effect since the inception of Michigan's drinking water program in 1913 and later integrated into the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399.) In addition to compliance with health-based standards, Act 399 also includes requirements to ensure sufficient capacity to provide water to the public, such as well construction, reliability, and general and contingency plans. As a result, the strategy to help systems maintain technical, managerial, and financial (TMF) capacity is a reflection of our long-standing tradition of technical assistance with the addition of a capacity assessment component.

The strategy is effective. New public water systems are demonstrating adequate capacity before they begin serving water to the public, and existing systems are continuing to enhance and maintain capacity. A strong emphasis on assistance has moved systems toward enhanced capacity.

Systems with adequate TMF capacity are able to maintain high rates of compliance with health-based standards. Additionally, systems use a multibarrier approach to providing safe water to the public, which begins with securing a safe source, such as a confined groundwater aquifer, and protecting that source from contamination. The multibarrier approach continues with proper construction of wells, pumps, treatment plants, and distribution systems. Finally, well-trained, certified operators perform proper oversight (operation and maintenance) and conduct routine monitoring to ensure that these multiple barriers continue to function.

Systems are taking advantage of programs to enhance their TMF capacity. These programs help systems stay in compliance with existing requirements, prepare systems to comply with upcoming requirements, and help operators and local officials to better manage their systems. These include:

- DWRf: The 1996 Amendments to the SDWA provide low-interest loans for repairs or enhancements to help water systems comply with the SDWA. To date, the DWRf has committed over \$349 million in low-interest loans for 120 projects to construct, upgrade, and replace infrastructure.

- Relationship with Field Staff: Water system operators maintain a long-term relationship with field staff who are the primary contact with water systems for capacity development. A prime objective of the field staff is to provide excellent customer service, from the construction permit process through regulatory oversight, and continual assessment and assistance for the duration of a system's operation.
- Source Water Protection: Increasing numbers of systems are taking steps to protect their drinking water sources. Federal funding for Wellhead Protection Programs is available through the DWRP for systems using groundwater. Michigan has also implemented a grant program to locate and properly plug private and public wells no longer being used that are located in a community's wellhead protection area. Unfortunately, federal funds are not available for surface water protection programs, although federal funds were allocated for source water assessment activities that were completed in 2003.
- Operator Certification and Training: Act 399 requires a certified operator to be available at all community and nontransient noncommunity water systems. These operators must maintain their certification by earning continuing education credits. As a result, operators are requesting and receiving more training opportunities. New training courses are developed based on operator feedback, field staff input, and in response to new regulations with which water systems must comply.
- Other programs available to systems include financial assessments, technical assistance provider services, security training, and electronic reporting systems.

New regulations will continue to challenge water systems. Over 400 Michigan systems will need to comply with a lowered arsenic standard effective in January 2006. Late this year, the United States Environmental Protection Agency is due to promulgate regulations to expand requirements on systems that disinfectant and on systems that use surface water as a source. Continuing to strive to maintain TMF capacity will help to meet the challenges of these new regulations.

This report is available on the Department of Environmental Quality's (DEQ) Web site at <http://www.michigan.gov/deq> and to the public, on request.

List of Acronyms

| | |
|---------|--|
| Act 399 | Safe Drinking Water Act, 1976 PA 399, as amended |
| ACO | Administrative Consent Order |
| AWMP | Abandoned Well Management Program |
| AWWA | American Water Works Association |
| CCCP | Cross Connection Control Program |
| CCR | Consumer Confidence Reports |
| CDP | Capacity Development Program |
| CWS | Community Water Systems |
| DEQ | Department of Environmental Quality |
| DWRF | Drinking Water Revolving Fund |
| eDWR | Electronic Drinking Water Reporting |
| ERP | Emergency Response Plans |
| FAP | Financial Action Plan |
| FY | Fiscal Year |
| LHD | Local Health Departments |
| MHC | Manufactured Housing Community |
| MiTAPS | Michigan Timely Application and Permitting Service |
| MMBA | Michigan Municipal Bond Authority |
| MOR | Monthly Operations Reports |
| MRWA | Michigan Rural Water Association |
| NCWS | Noncommunity Water Systems |
| NTNCWS | Nontransient Noncommunity Water Systems |
| OTCU | Operator Training and Certification Unit |
| RCAP | Rural Community Assistance Program |
| RUS | Rural Utilities Service |
| SDWA | Federal Safe Drinking Water Act |
| SME | Subject Matter Experts |
| SWPP | Source Water Protection Program |
| TANS | Threat Advisory Notification System |
| TMF | Technical, Managerial, and Financial |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geological Survey |
| VA | Vulnerability Assessments |
| WB | Water Bureau |
| WHPP | Wellhead Protection Program |

1.0 Introduction

The 1996 Amendments to the federal Safe Drinking Water Act (SDWA) added provisions for each state to develop a Capacity Development Program (CDP). The objective of the CDP is to enhance public health protection by helping water systems to develop and maintain the 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 report to Governor Jennifer M. Granholm the effectiveness of Michigan's capacity development strategy. Each state risks losing 20 percent of the annual Drinking Water Revolving Fund (DWRF) allotment if it does not submit a report to its Governor by September 30 of every third year or does not make the report available to the public under Section 1420(c)(3) of the SDWA.

This report examines the effectiveness of the strategy, progress toward improving capacity, and tools used to help to improve capacity. This report will be available to the public on the Web site of the Department of Environmental Quality (DEQ) at <http://www.michigan.gov/deq> and at the public's request.

1.1 CDP Overview

Water system capacity is the ability to plan for, achieve, and maintain compliance with drinking water requirements. Capacity has three components:

- Technical – Physical infrastructure and operational ability
- Managerial – Personnel expertise and institutional and administrative capabilities
- Financial – Monetary resources

Michigan's capacity development strategy is to help community water systems (CWS) and noncommunity water systems (NCWS) achieve and maintain technical, managerial, and financial (TMF) capacity by adding a capacity assessment component to the long-standing technical assistance program and to the Public Water System Supervision Program. The strategy is an ongoing process to:

- Assess systems' capacity or "capability"
- Prioritize systems most in need of assistance
- Determine the best means of assistance
- Provide assistance or refer systems to other capacity assistance or technical assistance providers
- Measure improvements in TMF capacity during subsequent assessments

The CDP is implemented by the Water Bureau (WB) of the DEQ through amendments to the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), by application of capacity development polices and guidance documents and through cooperation and/or partnerships with other agencies.

The CDP focuses on both new systems and existing systems. The new systems program ensures systems have sufficient capacity prior to commencing operation, and the existing systems program works to achieve, maintain, and enhance capacity. These two programs are detailed in two documents and were approved by the United States Environmental Protection Agency (USEPA) in 2000.

1.1.1 New Systems

New Community Water System Capacity Guideline Document, 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 and final inspection. Generally, a construction permit is issued based on the technical capacity of the proposed system. For CWS, the financial and managerial capacity requirements may still be pending while the system is under construction. Only after a final inspection and when the CWS has demonstrated capacity in all three areas is approval granted to commence operation. For nontransient noncommunity water systems (NTNCWS), the WB has delegated the authority to the local health departments (LHD) 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.

1.1.2 Existing Systems

Capacity Development Strategy for Existing Public Water Systems, August 1, 2000. The existing system strategy relies primarily on the capacity assistance component of the drinking water program, which the WB has traditionally referred to as technical assistance. Through routine system evaluations, also known as sanitary surveys or capacity assessments, the WB staff identifies which systems need capacity assistance and prioritizes assistance subject to available resources. Based on the wishes of our stakeholders, the WB will not request a financial capacity assessment of an existing water system unless violations, deficiencies, or other factors indicate the system lacks technical or managerial capacity. For CWS, capacity assistance is provided through the WB staff or through other technical assistance providers to help communities build TMF capacity. For NCWS, the WB delegated the authority to the LHD to assess capacity and to provide assistance. If capacity assistance is not accepted or effective, Michigan practices a program of progressive or escalated enforcement.

1.2 Involved Parties

The CDP encompasses the efforts of water systems, the DEQ, technical assistance providers, and other organizations and agencies that affect the capabilities of water systems including:

- DEQ, WB District Offices
- LHD
- DEQ, Environmental Science and Services Division
- Michigan Municipal Bond Authority (MMBA)
- Technical Assistance Providers such as:
 - Michigan Section, American Water Works Association (AWWA)

- Michigan Rural Water Association (MRWA)
- Rural Community Assistance Program (RCAP)
- United States Department of Agriculture, Rural Development, Rural Utilities Service (RUS)
- Contractors
- DEQ, WB, Enforcement Unit
- These organizations worked with the DEQ to complete source water assessments of CWS and NTNCWS in Michigan, as required by the SDWA:
 - Michigan State University, Institute of Water Research
 - Groundwater Education in Michigan Centers
 - Michigan Department of Agriculture
 - United States Geological Survey (USGS)
 - Michigan Public Health Institute
 - National Oceanic and Atmospheric Administration
 - Detroit Water and Sewerage Department
 - Environment Canada

2.0 Effectiveness of the CD Strategy

Many of the capacity development efforts have been in effect since the inception of Michigan's drinking water program in 1913. In addition to compliance with health-based standards, Act 399 also includes requirements to ensure sufficient capacity to provide water to the public, such as well construction, reliability, and general and contingency plans. As a result, the strategy to help systems maintain TMF capacity is a reflection of our long-standing tradition of technical assistance with the addition of a capacity assessment component.

The strategy is effective. New public water systems are demonstrating adequate capacity before they begin serving water to the public and existing systems are continuing to enhance and maintain capacity. A strong emphasis on capacity assistance has moved systems toward enhanced capacity.

2.1 New Systems

New systems must demonstrate TMF capacity before serving water to the public. As a result, they are better able to remain in compliance with health-based standards and monitoring requirements. When violations occur, they are usually minor monitoring violations. Field staff report that new systems subject to capacity development assessments are well developed from start-up and perform at a higher level than some of the older systems. The systems use modern technology, competent engineering support, and acceptable management. Prior to a

formalized CDP, field staff only required adequate technical capacity before a construction permit was issued.

2.1.1 CWS

Proposed new CWS are primarily new residential subdivisions. Field staff interact with developers and their engineering consulting firms to complete the capacity assessments before approval is granted to serve water to the public. Most developers who phase their projects understand that it is more cost-effective to install a system meeting CWS requirements at the beginning of the project instead of upgrading the water system later when they expand. In addition to the technical assessment are the financial and managerial assessments. The financial capacity assessment requires some thought into future operations and costs. The managerial capacity assessment requires an operations plan, a certified operator, a sampling site plan, as well as other plans to ensure the system has adequate managerial oversight and organization before commencing operation.

Some systems are already serving the public but are also considered new for the purpose of this program:

- Systems that do not meet the definition of a CWS at start-up but are designed to one day meet the definition, or
- Systems that are not currently a CWS, but propose to extend the water system, thereby growing to become a CWS.

A system that simply increases the number of users without altering or constructing water system infrastructure is not considered a new system. Existing systems that become CWS due to expansion of infrastructure are subject to capacity development policies. These systems are usually privately-owned, residential subdivisions that were previously exempt from CWS requirements due to their small size. Many times, a new developer begins to expand the subdivision or the original developer returns to complete a final phase after many years. These systems pose our greatest challenge because they often expand before fully complying with capacity assessment requirements and because the control point of a final inspection before commencing operation no longer exists.

2.1.2 NTNCWS

Due to the financial and managerial capacity requirements on new NTNCWS, these systems have a qualified operator and a higher level of awareness of the responsibilities of supplying water to the public. These systems begin operation with a contingency plan already in place – a valuable tool during emergencies.

2.2 *Existing Systems*

Existing systems are achieving and maintaining TMF capacity as evidenced with their high rates of compliance, as discussed in section 3.1, and their efforts to manage their systems effectively with qualified and educated staff to meet the needs of their customers. This compliance rate is a result of several factors including:

- District and LHD staff interaction with systems
- Operator training and certification

- Support of data systems for district staff and LHD
- Support of Web sites for district staff, LHD, and water systems
- Financial assistance in the form of loans, grants, and financial management assistance
- Technical assistance providers including contracts with provider organizations
- Source water protection and water system security programs
- Enforcement assistance via letters, phone calls, site visits, administrative fines, and hearings
- Routine policy updates and clarification communication to district staff, LHD, and systems

Many of these factors will be discussed in section 4.

3.0 Progress Toward Improving TMF

Systems with adequate TMF capacity are able to maintain high rates of compliance. Compliance with health-based standards, monitoring, reporting, and other capacity requirements is one measure of success of the CDP. A multibarrier approach to providing safe water is more difficult to measure, but it is an integral part of ensuring water systems have sufficient TMF capacity. Through the permitting and evaluation process, field staff helps to ensure systems obtain a safe source and continue to protect the source through the life of the system.

3.1 Compliance Rates

Comparing compliance data from one year to the next becomes more difficult because of the rapidly increasing numbers and complexity of new rules and requirements each year. With the onslaught of many new regulations that are likely to have a disproportionate impact on small systems, the number of systems in compliance may not tell the true story of improved capacity. Small systems make up the majority of systems in the state and the majority of systems in noncompliance. However, the majority of the population served by CWS is supplied by large systems that generally comply with requirements. To put compliance data into perspective, it may be useful to compare the percent of population served by CWS that are in compliance with health-based standards and monitoring and reporting requirements.

The following table is the percent of Michigan’s population that is served by CWS meeting all health-based drinking water standards.

| Percent of Population Served by CWS Meeting All Health-Based Standards | | | | |
|---|-------------|-------------|-------------|-------------|
| <i>Quarter</i> | <i>2001</i> | <i>2002</i> | <i>2003</i> | <i>2004</i> |
| J-M | 99.9 | 98.34 | 99.90 | 99.68 |
| A-J | 99 | 99.77 | 99.84 | 99.89 |
| J-S | 99.7 | 99.28 | 98.52 | 99.47 |
| O-D | 99.7 | 99.72 | 99.71 | 99.88 |

In the past several years the percent of population served by CWS that met all health-based standards is at least 99 percent and in most quarters is above 99.5 percent

The following tables summarize compliance with health-based standards (Table A) and monitoring and reporting requirements (Table B) from Michigan's Annual Compliance Reports for calendar years 2002 through 2004 submitted to the USEPA each July.

| | 2002 | 2003 | 2004 |
|----------------|------|------|------|
| Chemical | | | |
| CWS | 0.3 | 0.2 | 0.3 |
| NCWS | 0.1 | 0.0 | 0.1 |
| Combined | 0.2 | 0.0 | 0.1 |
| Total Coliform | | | |
| CWS | 4.7 | 3.0 | 4.4 |
| NCWS | 3.1 | 2.3 | 3.0 |
| Combined | 3.3 | 1.9 | 3.2 |
| Lead & Copper | | | |
| CWS | 0.0 | 0.0 | 0.0 |
| NTNCWS | 0.0 | 0.0 | 0.0 |
| Combined | 0.0 | 0.0 | 0.0 |
| Stage 1 | | | |
| CWS | | 0.0 | 0.4 |
| NTNCWS | | 0.0 | 0.0 |
| Combined | | 0.0 | 0.1 |
| CCR | | | |

| | 2002 | 2003 | 2004 |
|----------------|------|------|------|
| Chemical | | | |
| CWS | 0.6 | 0.6 | 0.6 |
| NCWS | 4.5 | 6.1 | 8.9 |
| Combined | 4.0 | 5.5 | 7.9 |
| Total Coliform | | | |
| CWS | 4.2 | 3.5 | 3.9 |
| NCWS | 9.8 | 10.1 | 11.1 |
| Combined | 9.1 | 9.3 | 10.1 |
| Lead & Copper | | | |
| CWS | 0.8 | 0.8 | 0.4 |
| NTNCWS | 3.7 | 5.4 | 9.6 |
| Combined | 2.3 | 3.3 | 5.3 |
| Stage 1 | | | |
| CWS | | 0.3 | 0.8 |
| NTNCWS | | 0.0 | 0.0 |
| Combined | | 0.0 | 0.1 |
| CCR | 2.3 | 0.9 | 0.7 |

Key to Table:

- CCR Consumer Confidence Report—Michigan requires day care centers and K-12 schools to provide an abridged annual water quality report instead of a CCR; that compliance data is not included here
- CWS Community water system
- NCWS Noncommunity water system
- NTNCWS Nontransient noncommunity water system
- Stage 1 Stage 1 Disinfectants and Disinfection Byproducts Rule – No data before 2003 – Most provisions of the rule do not apply to transient noncommunity water systems; therefore, percentages based on CWS and nontransient NCWS only
- * Significant monitoring and reporting violations—They occur when no samples are taken or no results are reported during a compliance period or when follow-up monitoring was not performed after a positive total coliform sample

3.2 *Multibarrier Approach*

The multibarrier approach to providing safe water to the public begins with securing a safe source, such as a confined groundwater aquifer, and protecting that source from contamination. It continues with quality construction of wells, pumps, treatment plants, and distribution systems. Finally, proper oversight (operation and maintenance) by trained personnel perform monitoring as confirmation that the multiple barriers are functioning.

3.2.1 Source, Treatment, Distribution, and Operation

The administrative rules that were promulgated under Act 399 provides public health protection for drinking water sources because it includes well isolation and construction requirements. Furthermore, Act 399 requires construction permits for surface water intakes and for necessary treatment systems. These construction permits require an engineering review and a sound basis of design that incorporates reliability and redundancy in these treatment and operation

systems. Compliance with these requirements is part of the continual evaluation process by field staff. Systems with proposed new sources and infrastructure must meet minimum standards to obtain a permit to construct. As a result, aging infrastructure that is replaced or expanded is done so under strict design and construction standards to ensure sufficient capacity. These requirements have been in existence for decades in Michigan and are key to achieving and maintaining capacity. Some reliability requirements are waived for systems with fewer than 50 connections or serving fewer than 200 people.

Act 399 requires water systems to develop and implement a Cross Connection Control Program (CCCP) to eliminate and prevent future cross connections, which are potential pathways for contaminants to enter the water system. A system must establish the legal authority to enforce the CCCP, preferably through an ordinance, and must establish inspection and testing frequencies for certain cross connection control devices used at businesses and industries that are of particular concern, such as dental offices and mortuaries. Field staff and technical assistance providers are available to systems to help develop and update the CCCP. During the evaluation process, field staff evaluate the implementation of the system's CCCP as part of the overall capacity assessment.

3.2.2 Protect the Source

The 1996 Amendments to the SDWA require an assessment of all source waters used for drinking water. Assessments of all of Michigan's nearly 18,000 sources were completed in 2003 with the cooperation of several state, federal, and private agencies. These assessments are discussed in section 4.3. The current challenge is to use the source water assessments to implement continued source water protection efforts. After the heavy investment in the assessment process, it is hoped that the USEPA will provide funding for source water protection to follow the assessment process. The WB and the MRWA are working closely together to move from assessments to protection efforts. As an example, Ira Township in St. Clair County is taking the lead in a St. Clair River Early Detection Warning System. Nearly instantaneous communication is key to protecting surface water intakes because of the rapid rate of flow and corresponding changes in water quality compared to groundwater rates. Additionally, Alpena and Caseville have expressed interest in a source water intake protection program. Intensive outreach by WB staff has also resulted in the city of Ann Arbor showing an interest in participating in a source water protection program.

4.0 Tools Used to Improve TMF

Systems are taking advantage of other programs and tools to enhance their TMF capacity. These programs help systems stay in compliance with existing requirements, prepare systems to comply with upcoming requirements, and help operators and local officials to better manage their systems.

4.1 DWRP

The 1996 Amendments to the SDWA authorized the creation of a revolving fund with state match to provide low-interest loans for repairs or enhancements to help water systems comply with the SDWA. This fund is similar to the State Revolving Fund created to assist water pollution control projects. The capacity development provisions of the SDWA are funded through the DWRP allotment.

Michigan's DWRP is coadministered by the DEQ and the MMBA. The DEQ handles all programmatic issues, while the MMBA serves the DWRP 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. The DWRF provides a source of infrastructure financing. Through the third quarter Fiscal Year (FY) 2005, the DWRF has committed over \$349 million in low-interest loans for 120 projects. Examples of projects are to construct or upgrade water treatment plants, booster pumps, and storage facilities; and replace and upgrade water mains. Some systems receive binding commitments but are not yet ready to proceed with the project.

Funds for the three largest projects were committed in FY 2003 and 2004. The fourth segment of the upgrades to the city of Flint water treatment plant was funded in FY 2003. Independence Township in Oakland County is beginning a financially segmented project to add well capacity, enhance reliability, and to comply with the new arsenic standard. The city of Muskegon project will improve the filtration plant by eliminating discharge of filter backwash water to Lake Michigan and improving sludge handling. It will also improve the distribution system by eliminating dead ends, replacing mains, and upgrading storage tanks.

Funds have been committed for a total of 120 projects, and 72 have been completed. The following table summarizes the loan commitments since FY 1998:

| DWRF Loan Commitments by FY | | | | | | | | |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|-------------------------------------|
| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 thru 3 rd Qtr |
| Number of Projects Committed | 24 | 21 | 7 | 10 | 15 | 21 | 12 | 10 |
| Commitments of Funds (\$M) | \$53.24 | \$51.38 | \$27.64 | \$26.71 | \$38.15 | \$69.72 | \$60.17 | \$22.22 |

Michigan’s drinking water program centers around proper water system construction to prevent jeopardizing the safety of either the source or the finished water. To that end, priority of DWRF projects favors those communities that are participating in a Source Water Protection Program, which is discussed in section 4.3.

4.2 Field Staff

Water system operators maintain a long-term relationship with field staff who are the primary contact with water systems for capacity development. The CWS are served by WB staff in 8 district offices, and NCWS are served by staff from 43 LHD under contract with the WB. A primary objective of the district staff and the LHD is to provide excellent customer service from the construction permit process for new infrastructure through the regulatory oversight process and the continual assessment and assistance process for the duration of a system’s operation. Field staff achieve that objective through assistance to systems in meetings, by telephone, and during site visits.

“Since I have been here, I have pushed systems to face the upcoming new arsenic MCL. Systems have begun to increase water rates, run pilot studies, propose compliance schedules, evaluate entering into an ACO (administrative consent order), hire engineers to propose and evaluate options, etc. I have pushed systems to properly maintain their treatment and distribution systems. ... I have met with the council in Owendale to talk about what they need to do about arsenic compliance. I will most likely meet with other councils yet this year.”
 - A district engineer

Assistance or consultation has been the preferred method to prevent systems from falling into noncompliance. At times the district staff serves as both capacity assistance providers as well as regulators. When assistance is not accepted or effective, staff initiates enforcement actions.

Capacity of existing systems is assessed with routine evaluations, also known as sanitary surveys, which rate

Capacity Development Report to the Governor 2005

systems satisfactory, marginal, or deficient. District engineers detail their findings and recommendations in a letter to the system. Evaluation 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. These evaluation letters help systems understand the severity of the deficiencies and importance of acting on the recommendations.

The following table shows the number and percentage of evaluations, visits, and construction permits in recent years in the CWS program. The table does not include activities in the Manufactured Housing Community (MHC) Program:

| System Evaluations, Visits, and Construction Permits | | | | | | | | | | |
|---|---------------|----|---------------|----|---------------|----|---------------|----|-------------------------------------|----|
| | FY 2001 | | FY 2002 | | FY 2003 | | FY 2004 | | FY 2005 thru 3 rd Qtr | |
| Evaluations Conducted | 401 | | 488 | | 294 | | 356 | | 313 | |
| | # | % | # | % | # | % | # | % | # | % |
| Satisfactory | 311 | 78 | 384 | 78 | 219 | 75 | 279 | 78 | 229 | 73 |
| Marginal | 45 | 11 | 57 | 12 | 45 | 15 | 55 | 15 | 25 | 8 |
| Deficient | 23 | 6 | 30 | 6 | 22 | 8 | 18 | 5 | 9 | 3 |
| Not Rated | 22 | 6 | 16 | 3 | 8 | 3 | 3 | 1 | 50 | 16 |
| Other | | | 1 | 0 | | | | | 1 | 0 |
| Visits | 1,301 | | 1,360 | | 1,117 | | 1,250 | | 912 | |
| Construction Permits (Received/Issued) | 1,836 / 1,830 | | 1,709 / 1,703 | | 1,889 / 1,801 | | 1,959 / 1,864 | | 1,407 / 1,296 | |
| Permits Issued Within 10 Business Days of Receipt | # | % | # | % | # | % | # | % | # | % |
| | 1,384 | 76 | 1,381 | 81 | 1,381 | 77 | 1,269 | 68 | 929 | 72 |

The data reflect the following:

- The dip in the number of evaluations or sanitary surveys during FY 2003 was due, in part, to a merge with another division and an early-out retirement option for senior state employees. As a result, evaluations were not conducted at the expected rate of about 350 per year during FY 2003, but sprang back in FY 2004 as staff became more comfortable with the structure and management continued to emphasize timely evaluations. FY 2005 figures are through the third quarter.
- The percent of systems rated satisfactory, marginal, and deficient have remained about the same.
- To date, several evaluations are still pending in FY 2005. Greater efforts are being made to more accurately track evaluations and ensure evaluations are completed, which involves sending a letter of findings to the system within 30 days of the onsite evaluation.
- The number of onsite visits fell in FY 2003 but began to climb in FY 2004. These visits are conducted to meet with operators and local officials, conduct evaluations, or check on progress of projects.
- The timeliness of permits issued (within 10 business days of receipt) has dropped in FY 2004, possibly due to the record number of permit applications received and the turnover of engineering staff last year.

- Data not included in the above table are the percent of NCWS that have been inspected in the previous five years. Since FY 2000, the percent of up-to-date evaluations has risen to 96 percent. The goal is 100 percent.

Deficient systems receive priority for assistance. Assessments are based on compliance with health-based standards, monitoring and reporting requirements, qualified operator requirements, and requirements in Act 399 for TMF sufficiency, such as well construction, general and contingency plans, and financial requirements for privately-owned systems.

Many times, a one-time capacity assistance meeting is sufficient to keep systems in compliance. In other situations, the district engineers spend more time with the system to help solve more complicated concerns or refer the system to other capacity assistance providers. At times, water system operators want to comply, but they do not have the financial resources or support from community leaders to make the changes that are necessary, especially when options are particularly expensive, or acceptable alternatives are not readily available. However, when capacity assistance is met with resistance, letters of notice are used to outline the consequences of failing to correct deficiencies and may offer one more opportunity to meet with staff to arrive at a mutually agreed compliance schedule. When these difficult cases arise, the WB increases surveillance activities and attempts to address potential enforcement action at the same time.

"I've been trying to get systems to do more preventative maintenance, especially well/pump inspections. ... I'm getting a few communities to commit to some preventative well/pump maintenance.
- A district engineer

In these cases, district staff may attend municipal board meetings or council meetings to discuss a compliance schedule with specific items and completion dates and discuss the possibility of formalizing a compliance schedule that is incorporated into an Administrative Consent Order (ACO). Community leaders need to hear the benefits of agreeing to a course of action that allows them time to address their problems without further enforcement or penalties. During this time, district staff will be more closely involved to help the system meet the deadlines in the ACO. District staff interaction with systems as a capacity assistance provider has resulted in very few department orders for noncompliance (eight since 2003) and a high rate of compliance statewide.

System operators and managers have many opportunities to interact with field staff outside the capacity assessment arena. Field staff attend, participate, and present at periodic regional operator meetings to discuss upcoming regulations, regional issues, and to network with operators and managers. District staff also serve as instructors at operator training workshops, serve as subject matter experts for operator certification examinations, and present training at professional meetings. When systems begin to develop their project plan to apply for a DWRF loan, the district staff consult with the system and work with its consulting engineer to ensure the project plan is eligible for funding.

I meet with water boards on request. On a few occasions, I have asked to be placed on a Board's agenda.
- A district engineer

4.3 Source Protection

Increasing numbers of systems are taking steps to protect their drinking water sources. The SDWA established and funded source water assessment activities, but did not provide funding for implementation of source water protection programs for surface water sources. Federal funding for Wellhead Protection Programs (WHPP) is available through the DWRF. To further protect drinking water aquifers from contamination, Michigan has implemented a grant program

to locate and properly plug private and public wells no longer being used that are located in a community's wellhead protection area.

4.3.1 Source Water Assessments to Protection

The SDWA required all CWS and NCWS sources used for drinking water to be assessed by December 2003. Michigan's nearly 18,000 sources serving approximately 10,600 NCWS and 1,250 CWS were identified, potential sources of contamination were inventoried, and susceptibility to contamination was determined by the combined efforts of the following agencies:

- WB
- Michigan State University, Institute of Water Research
- LHD
- Groundwater Education in Michigan Centers
- Michigan Department of Agriculture
- USGS
- Michigan Public Health Institute
- Technical assistance contractors

The susceptibility of a groundwater source was based on a quantitative evaluation of geologic sensitivity, well construction details, water chemistry, and contamination sources. The surface water assessments evaluated water intake sensitivity and calculated susceptibility to potential sources of contamination. Organizations that played a significant role in the assessments of surface waters sources included the USGS, National Oceanic and Atmospheric Administration, Detroit Water and Sewerage Department, and Environment Canada.

Source water assessment data is being used to prioritize communities based on their overall susceptibility rating for intensive outreach efforts, including site visits and quarterly newsletters, to encourage protection efforts and follow-up assistance to communities that are developing SWPPs. Joint quarterly meetings between the WB and MRWA are held to assess progress and discuss future activities.

To build upon the source water assessments at NCWS, the WB has developed and piloted a self-assessment tool to help the operators identify activities that may increase the risk of a contamination incident. The operator then identifies actions to reduce the risk and sets target dates to complete the actions.

4.3.2 WHPP

The WHPP assists local communities utilizing groundwater for their municipal drinking water systems in protecting their water source. A WHPP minimizes the potential for contamination by identifying and protecting the area that contributes water to municipal water supply wells and avoids costly groundwater cleanups. Of the 455 municipal systems in Michigan using groundwater as their water supply, 292 are involved in some aspect of wellhead protection such

as performing a delineation, inventorying the potential threats, and developing contingency plans. Of those 292 systems, 135 have completed all the steps and have an approved WHPP. As a result, 89 percent of the population of the state served by municipal systems using groundwater are in communities taking action to protect their groundwater sources.

4.3.3 Abandoned Well Management Program (AWMP)

No one knows exactly how many unplugged and improperly abandoned wells exist in Michigan. The National Ground Water Association reports that Michigan leads the nation in the number of new wells drilled annually. It is quite likely that Michigan has more abandoned wells than any other state.

As a result of the Clean Michigan Initiative, 65 communities have applied for and received matching grants to administer a program intended to locate and properly plug abandoned wells inside the delineated wellhead protection area of their drinking water wells. Some highlights of these projects include conducting public education programs to assist in identifying these potential hazards, identifying and mapping the location of abandoned wells, developing specifications for bidding abandoned well plugging work, and developing proactive abandoned well plugging ordinances. The LHD issues permits to install wells and now they oversee plugging of abandoned wells. They are encouraging private well owners to properly plug abandoned wells when a replacement well is drilled. Due to these efforts, Michigan properly plugged nearly 85 percent of abandoned wells during replacement well projects. Recently, a project in Rudyard Township in the Upper Peninsula earned the MRWA Exemplary Efforts in Environmental Protection Award. For this project, 37 wells that varied in depth from 200 to 400 feet were located and properly plugged at a cost of about \$500 per well. Another project in the Upper Peninsula plugged 21 wells, 2 of which were at sites with leaking underground storage tanks. The WB recently participated in the investigation of a case involving the illegal abandoning of wells. The defendants had been retained by the state to plug abandoned wells under an Environmental Remediation contract with the state. They claimed the wells were properly plugged, submitted false reports, and were paid by the state for their work. Subsequently, the DEQ discovered that the wells were not properly plugged. The contractors involved made restitution to the state, with one receiving a jail sentence. Adjudicating these types of cases protects and maintains the integrity of the AWMP and provides a significant deterrent to other contractors.

4.4 Operator Training and Certification

Due to amendments to Act 399, a certified operator must be available at all CWS, all NTNCWS, and certain transient NCWS. These operators must obtain continuing education credits to maintain their certification. As a result, operators are requesting and receiving more training opportunities. New training courses are developed based on operator feedback, field staff input, and in response to new regulations with which water systems must comply.

4.4.1 Operator Training and Certification Unit (OTCU)

The OTCU of the DEQ, Environmental Sciences and Services Division, provides over 30 training courses each year. The OTCU certifies nearly 80 other organizations and training providers that offer other opportunities for continuing education credits including online courses. Major program activities recently include:

- Issued over 500 new drinking water certificates and processed over 1,400 renewals in the first three quarters of FY 2005 due to operators completing their continuing

education requirements. The renewal program is based on a three-year cycle for all certification levels.

- Established the Expense Reimbursement Grant Program for water system operators employed by water systems serving 3,300 or fewer people. Three training providers were awarded contracts to participate in the program – MRWA, AWWA Online Institute, and a private consultant.
- Implemented the computer program for Michigan training providers to submit attendee rosters electronically to OTCU via a proprietary software application.
- Utilized Subject Matter Experts (SME) to review and develop new questions for licensing examinations. The SME include water system operators holding licenses of the highest level in their category.
- Offered the first exams, using questions validated by the SME, for the higher level classifications of complete treatment and limited treatment operators. A new examination is currently being developed by the SME for distribution system operators.
- Developed and offered new training courses and revised existing courses in response to new rules and based on new technologies including hands-on training and advanced level courses. Conducted highly technical seminars geared toward larger water treatment plants.
- Created an Internet site for certified operators to view pertinent information regarding their certifications. Water system supervisors can better manage their employees by having access to this information.

4.4.2 Small CWS and NCWS

A restricted certification option is available for existing operators of certain small systems to continue to operate at their current location if they receive additional training. Approximately 90 percent of the NTNCWS met the certified operator requirements by the effective date of the requirement. However, the rapid turnover rate typically experienced at these small systems puts the system out of compliance with the certified operator requirements until a replacement operator is employed.

Four continuing education modules have been developed for operators holding the lowest level certification. Twenty LHD are contracting with the WB to provide continuing education for these operators and be reimbursed by the WB.

4.4.3 MHC

For the past several years, the staff of the WB responsible for oversight of the CWS serving MHC has provided training targeted for operators of these systems, many of which hold restricted licenses. The audience is not only operators, but managers and owners of these CWS. Many of these operators are employed by more than one system or may also work at NTNCWS, so the training is improving the operation and maintenance of many more systems than the number of operators present for this training. The training is slightly different each year to keep the operators interested and engaged. In 2005, 186 operators and owners attended training offered at five sites across the state that covered:

- Distribution Flushing and Cleaning
- Chlorination
- Methamphetamine Laboratories and Contamination Issues
- Compliance with new arsenic standard
- Sanitary Surveys (system evaluations)
- Electronic Drinking Water Reporting (eDWR)

In the past, the MHC operators and owners have interacted with WB staff that specializes in the unique aspects of these communities including wastewater and drainage issues. Due to recent budget cuts, some of the nonregulatory programs are being eliminated and staff is being reassigned. The WB recognizes the importance of continuing efforts to maintain compliance with drinking water regulations at small water systems, such as those serving MHC, but there will be a period of transition as staff are reassigned and the regulatory responsibility for MHC are moved to the district offices. In the meantime, the MHC have shown improved infrastructure due to an increased number of completed sanitary surveys identifying deficiencies. These communities are also moving forward to find ways to comply with the new arsenic standard by the effective date in 2006.

4.5 *Financial Assessments*

Both new and existing systems have opportunities to achieve and maintain financial capacity. As mentioned previously, financial capacity assessments would not be required of existing systems unless serious deficiencies in technical or managerial capacity existed. However, voluntary participation in financial assessments have been forthcoming.

4.5.1 New Systems

New systems must demonstrate financial capacity before serving water to the public. In the NCWS Program, the system may receive help from the LHD during the permit application process to develop a financial plan. They must submit a financial plan, including a budget, to the LHD in order to receive approval to commence operation. In the CWS program, systems submit their financial plan and supporting documents to the DEQ for review and approval. Systems may continue to develop their plan during the construction phase of the water system, but must receive approval for their financial plan prior to the final inspection of the system.

4.5.2 Existing Systems

To help existing CWS improve financial capacity, the WB has partnered with another DEQ division to conduct financial assessments of systems that serve a population of less than 10,000, received a less than satisfactory rating in a recent evaluation, and are not making satisfactory progress toward correcting the deficiencies due in some part to financial difficulties. The criteria has been expanded to systems 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 meeting the new arsenic standard, are making progress toward that end by improving their financial capacity.

Outcomes

41 Municipally-owned CWS have requested or been nominated by district staff to undergo an assessment

21 systems have received their FAP and are beginning to implement their plan.

A financial analyst in the DWRP 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 documents and an onsite meeting with system representatives. 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, such as a sample water use and rate ordinance and a service agreement

checklist. The assessment is not designed to provide funding; however, financing options are discussed at the onsite meeting. Further information on obtaining funding is provided with the useful tools, when applicable, such as forms to help apply to the DWRP. The system is expected to carry out the FAP, and the WB is available to assist when requested. The FAP is intended to also be a guide for the district staff. If a system falls into noncompliance with Act 399 partly due to failure to carry out the FAP, then the district staff may choose to include the FAP tasks and timeframes into an ACO. An outline of a typical assessment report is included in the Appendix.

In 2004, the city of Beaverton underwent a financial assessment and is reaching their goal to develop the financial capability to fund present and future needs. Beaverton developed a capital improvement project list to address many of their system deficiencies, and began to seek grants and other funding. They formed a Utilities Committee, consisting of government, business, and citizen members to work on a fair water rate structure to adequately fund the water system. In the meantime, the city manager has been replaced, which derailed the process somewhat, but the city is still hoping to seek funding for a significant water project.

Rose City was one of the first systems that volunteered to undergo a financial assessment. Due to political reasons, the system was slow to begin to implement their plan. However, they have progressed in their FAP and are now setting aside \$20,000 each year to fund an arsenic removal system without having to borrow money.

Applying for a DWRP loan can be a daunting task for small cities and villages. However, district staff report that some of their communities that underwent a financial assessment may have become motivated to apply for DWRP money. The financial assessment may have helped put into perspective the need to move forward. The assessment may have also helped these communities move incrementally toward gathering the information and documents needed to apply for a loan. Galesburg, which underwent a financial assessment in 2003, submitted a project plan to upgrade aging infrastructure and increase storage capacity. In FY 2005, two DWRP project plans were submitted and included treatment to meet the new arsenic standard: Carsonville, which participated in the pilot financial assessments in 2002; and Byron, which underwent a financial assessment in 2003.

To advertise the availability of financial assessments, the WB has made presentations at the Michigan Section, AWWA, Regional meetings and published articles in the *Water Works News*, a joint newsletter of the DEQ and the Michigan Section, AWWA. Some municipalities learned of the service through their engineering consultants.

4.6 *Technical Assistance Contracts*

Funds from the DWRP have been set aside for technical assistance to the 12,000 community and noncommunity water systems serving 10,000 or fewer people. Two new contracts were recently awarded, each for two years.

The first contract is to assess and reduce critical contaminants in small water systems. This will include onsite visits to systems with elevated arsenic levels and pilot projects at selected systems to develop arsenic reduction strategies and tools. Onsite visits will also be conducted at small systems to collect and analyze samples for critical chemical contaminants. The contract also includes training sessions to LHD, NCWS, and others using training modules already developed concerning monitoring, treatment, evaluations, source water assessments, cross connections, contingency planning, and groundwater wells.

The second contract is to develop, test, and deliver training modules for community water systems. One set of training modules will address priority issues for operators, such as regulations, reporting, and recordkeeping; water sources and treatment; water quality monitoring; operation and maintenance; and contingency planning and emergency procedures. A second set will focus on topics for small system managers and financial officials, such as managing and financing small systems; system assessment, objectives, and options; establishing a budget; basics of rate setting; and legal framework.

4.7 *Security*

Supplies are taking advantage of programs available to protect their systems from malevolent acts including training to complete vulnerability assessments (VA) and Emergency Response Plans (ERP), participating in water security table top exercises, and receiving the Threat Advisory Notification System (TANS).

The WB received approximately \$0.4 million from the USEPA to implement provisions of the federal Public Health Security and Bioterrorism Preparedness and Response Act of 2002. A total of 16 two-day workshops were conducted at locations around the state for public water systems serving between 3,300 and 50,000 people. Training participation included 452 personnel from 153 systems. The training helps systems to complete their VA and ERP, which include a review of water system operations, hazardous chemicals delivery and storage facilities, and prioritize vulnerable assets lists. Similar one-day security seminars at 30 locations were available to systems serving fewer than 3,300 people. Actual participation was 260 systems and 290 personnel. Continuing education credits are awarded for this training. A small number of higher risk systems also received direct onsite security training, including several NCWS.

Earlier this year, 20 utilities in the largest municipalities in the state participated in security tabletop exercises, each with unique scenarios designed to challenge the utilities in the event of an act of terrorism. Participants included representatives from the utility and the DEQ. Police, fire, and other emergency response people were in attendance at most of the exercises. The greatest benefit of these exercises was to bring together water and wastewater personnel and local fire and police department representatives. Another benefit of the exercises was to increase the awareness among water system personnel of the potential for terrorist acts.

The WB has developed a TANS for water and wastewater systems. The WB is continuing to gather and update e-mail addresses. An index of TANS notices that have been issued is

available on the DEQ Internet Web site, <http://www.michigan.gov/deq> and includes changes in threat levels and security information and guidance.

4.8 *Technical Assistance Providers*

The efforts of other organizations to enhance system capacity is an integral aspect of the CDP. An index of technical assistance providers was developed and describes the services of each technical assistance provider agency. The index is a "yellow pages" that is periodically published in the Michigan *Water Works News* of water systems, community leaders, and DEQ staff. Two provider organizations deserve highlighting due to their efforts to enhance capacity:

The Rural Community Assistance Program (RCAP) provides free technical assistance to rural communities of low to moderate median household incomes serving fewer than 10,000 people, with priority to those serving fewer than 3,300, to develop and manage affordable water, wastewater, and solid waste systems. Providers work onsite 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, and help apply for funding for capacity projects. Local officials are taking advantage of 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 and emergency response planning. Since FY 2002, RCAP has leveraged over \$13 million through low-interest loans, grants, and local funds. Projects include maintaining or achieving compliance at the villages of Detour, Cass City, and Honor; the cities of Reading, Sandusky, and Munising; and the townships of Gore and Ida. The RCAP also helped two villages apply for DWRP loans to meet minimum capacity requirements: Brooklyn submitted a project plan for FY 2006 funding to meet distribution and storage capacity requirements and they also plan to enhance their security with intrusion alarms; Elkton applied for FY 2004 funding to rehabilitate wells.

The Rural Utilities Services (RUS) provides loans, grants, and loan guarantees to build, reconstruct, or rehabilitate water, sewer, solid waste, and storm sewer systems in rural communities serving 10,000 or fewer people with priority to low income communities; those with DEQ violations; systems with leverage from other funding sources; systems extending existing systems; and entities working together. The RUS provides technical assistance to applicants regarding environmental issues, engineering, construction, and federal financing. Loans are monitored until they are paid in full. Small communities serving populations under 5,000 took advantage of RUS funding in the past three fiscal years: 10 projects totaling \$19,529,000 in FY 2005, 14 projects totaling \$16,498,000 in FY 2004, and 11 projects totaling \$17,031,000 in FY 2003.

The ratio of grants to loans is weighted more heavily on loans and less on grants. The RUS goal remains to help the most needy low income communities, targeting those at 60 percent of the state median household income of \$27,461, however, with the minimal grant funds, communities will need to pay more. The RUS strives to increase leveraging of funds with other agency funds and private credit. All community assets in an applicant's general and enterprise funds are considered to determine what community funds can be available to the project. To ensure funding goes to communities that protect their source and manage their water system, applicants must have a wellhead protection plan, install water meters, and fund short-lived asset and replacement accounts. Security is receiving continued focus and applicants must complete VAs and ERPs before closing on loans, including systems serving fewer than 3,300 people.

The RUS also administers the Technical Assistance and Training Grant Program that funds Internal Revenue Service tax exempt private nonprofit organizations that have the proven ability, background, experience, legal authority, and capacity to provide technical assistance and/or training on a regional basis. Successful applicants are typically multijurisdictional groups, such as regional planning commissions, the National Rural Water Association, and the RCAP.

4.9 Enforcement

Evaluations and compliance information becomes the basis for enforcement. When systems fail to return to compliance, escalated enforcement, including ACO and DEQ orders, can be initiated.

Before escalated enforcement is used, many systems are encouraged to return to compliance when they are assessed fines for violations. Michigan’s administrative fines policy was updated in 2001 to include timely submittals of monthly operation reports (MOR) and CCR. The increase from 58 fines initiated in FY 2001 to 67 in FY 2002 was due primarily to fines for failure to submit an MOR or a CCR.

| | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 thru 3 rd Qtr |
|--|---------|---------|---------|---------|----------------------------------|
| Number of Fines Initiated | 58 | 67 | 51 | 35 | 16 |
| Number of Initiated Fines for Failure to Deliver a CCR | 0 | 10 | 3 | 10 | n/a |
| Number of Initiated Fines for Failure to Submit an MOR | 0 | 12 | 2 | 2 | 1 |

At this writing, the violations for CCR have not yet been processed for FY 2005 and several are expected for failure to deliver a CCR to customers, possibly due to staff transitions in two of the eight district offices during the months that water systems are drafting their reports and preparing to deliver them to customers.

When a fine is not applicable or does not prevent further violations, the WB moves to Notice of Violations and ACOs. However, as mentioned in the discussion in section 4.2, field staff prefers technical assistance to enforcement, especially when options are particularly expensive or when acceptable alternatives are not readily available. Technical assistance is the preferred method to bring systems back into compliance or prepare systems to meet upcoming requirements. As a result, the drinking water program has needed to refer only eight systems to enforcement for DEQ orders. The cases include construction without a permit, chronic monitoring violations, and failure to take appropriate measures after losing pressure in the distribution system. The systems with the violations are primarily small privately-owned systems and very small municipally-owned systems, none of which are new systems.

Regulations promulgated by the USEPA and adopted in state rules lowered the maximum contaminant level of arsenic, which water systems must meet by 2006. Arsenic is a naturally occurring mineral present in groundwater around the state at some levels that can cause adverse health effects. Meeting this standard has been particularly difficult for small water systems that currently do not treat their water. Some water systems will not comply by the deadline primarily because they do not have the funds to remove the arsenic. Instead of levying fines on systems that are striving to comply, the WB is working with these systems to bring them into compliance as quickly as possible. Systems that are making good faith efforts towards meeting the arsenic standard may enter into an ACO to complete milestones on a mutually agreed schedule. To date, several systems are currently reviewing draft orders and many are expected to enter by the end of the year to avoid penalties.

Public ownership of water systems is preferred over private ownership. However, private ownership is unavoidable in some locations. Privately-owned new community water systems are subject to additional requirements to ensure they are able to provide an adequate supply of drinking water. Proposed systems must enter into an ACO and agree to the requirements, such as a local government's refusal to accept ownership of the system, establishment of an escrow account available to the WB for immediate repair or maintenance of the system, and approval to transfer ownership. The order ensures private owners understand their responsibilities prior to establishing the water system.

4.10 Electronic Reporting

Two new electronic reporting systems are coming online to provide more convenience to water systems and more accurate and complete assessment of capacity.

Michigan has recently implemented an Internet-based reporting system for discharge monitoring reports. The system's success 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 is voluntary, and a water system may choose at any time to no longer participate. To date approximately 15 water systems and drinking water laboratories have volunteered to participate in the system pilot that is expected to begin by the end of FY 2005. Laboratory and operational data will be transferred into tracking systems for analysis and compliance determination. The collection of data will allow the WB to query certain parameters to assess capacity on a system-wide basis. Future plans include providing other required reports online.

During FY 2005, Michigan implemented the Michigan Timely Application and Permitting Service (MiTAPS). This system allows customers to prepare and submit various permit applications online, including permit applications for CWS. The purpose of MiTAPS is to provide quick receipt of applications, allow customers to track application status, and to issue electronic copies of approved permits. The drinking water application came online during December 2005. So far, one CWS has submitted permit applications online. Currently there are no further plans to expand this project for CWS purposes, although various other environmental permit applications are expected.

5.0 Summary

Every three years the WB must report to the Governor on the effectiveness of the CDP. This program is effective as evidenced by the high rates of compliance with drinking water standards and with monitoring and reporting requirements. An even more critical measure of the effectiveness of Michigan's CDP is the absence of any major waterborne disease outbreaks like those that have occurred in neighboring states and provinces.

Public water systems use a multibarrier approach to provide safe water. This approach begins with securing a safe source and continues with constructing quality infrastructure using a sound basis of design. This multibarrier approach is maintained by qualified personnel properly operating the system and routinely monitoring to confirm that the multibarriers are indeed functioning.

Field staff periodically assesses the capacity of water systems through sanitary surveys and serves as a primary resource as the system addresses capacity issues. Programs available to systems include the DWRF, SWPP, operator training, financial assessments, and technical assistance provider services.

New regulations will continue to challenge the water systems. Continuing to strive to maintain TMF capacity will help to meet the challenges of these new regulations. This report is available on the DEQ Web site at <http://www.michigan.gov/deq> and to the public, on request.

Appendix: 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: Supply usually does not provide all the information requested.

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

Onsite 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.