

Section C: Managing Water Quality

2008 Ohio Integrated Report

Ohio EPA and other state government departments are directed by the Ohio General Assembly to manage Ohio's water resources. The U.S. Environmental Protection Agency has also delegated to Ohio EPA the responsibility to administer certain federal programs in Ohio.

The functions of various water quality management programs are explained in this section, along with a description of some funding expenditures for water quality activities in Ohio. Some federal government programs are included. Local government programs and decisions (e.g., ordinances, planning, zoning) can have major impacts on water quality but are not described here.

C1. Program Summary – Surface Water

The goal of Ohio EPA's Division of Surface Water (DSW) is to restore and maintain Ohio's water resources. This goal reflects the national water quality objective as contained in the Federal Clean Water Act (CWA), which is "... to restore and maintain the chemical, physical, and biological integrity of the Nation's waters"—often referred to as the "fishable/swimmable goal." Fishable/swimmable waters are resources that support stable, balanced populations of aquatic organisms that are ecologically "healthy" and provide safe water to the people of Ohio for public and industrial water supplies and recreation.

The Division of Surface Water has a full time staff of approximately 240 located in Columbus and the five Ohio EPA district offices. The division also employs approximately 50 interns during the summer to assist with biological and chemical water quality surveys. Funding for the division is comprised of federal monies, environmental protection funds generated through solid waste dumping fees, and annual discharge fees.

A watershed-based approach to assessments and delivery of services has been a program management objective within DSW for nearly two decades. In 1990, DSW initiated an organized, sequential approach to monitoring and assessment (the "Five-Year Basin Approach") to better coordinate the collection of ambient monitoring data so that information and reports would be available in time to support water quality management activities such as the issuance of NPDES permits and periodic revision of the Ohio water quality standards.

To establish the framework, the State was divided into twenty-five different areas that were aggregations of subbasins within major river basins. Each of the twenty-five areas were assigned to one of the five basin years, taking into account the need to appropriately distribute the monitoring workload among Ohio EPA's five district offices. The initial 1990 workload estimates and resource planning indicated that 5 years would be needed to complete the cycle of monitoring. However, the monitoring program has never been fully funded to meet those resource needs, and thus the monitoring cycle takes more than 10 years to complete.

The Five-Year Basin Approach and the core work of the biological and water quality monitoring program have gradually become the Division's assessment component within the Total Maximum Daily Load (TMDL) program. Ohio's TMDL program has been designed to be watershed-focused and to promote integration of other ongoing water program elements on a watershed basis.

Biological and Water Quality Surveys

Ohio EPA routinely conducts biological and water quality surveys, or biosurveys, on a systematic basis throughout the state. A biosurvey is an interdisciplinary monitoring effort coordinated on a reach specific or watershed scale. Such efforts may involve a relatively simple setting focusing on one or two small streams, one or two principal stressors, and a handful of sampling sites or a much more complex effort including entire drainage basins, multiple and overlapping stressors, and tens of sites.

Each year Ohio EPA conducts biosurveys in 20 to 25 Watershed and Large River Assessment Units with an aggregate total of 400 to 450 sampling sites. Biological, chemical, and physical monitoring and assessment techniques are employed in biosurveys in order to meet four major objectives:

- to provide a current and thorough assessment of water quality conditions in watersheds that are scheduled for TMDLs in the near future (1-3 years)
- to determine the extent to which use designations assigned in the Ohio Water Quality Standards (WQS) are either attained or not attained
- to determine if use designations assigned to a given water body are appropriate and attainable and recommend designations or changes where needed
- to determine if any changes in key ambient biological, chemical, or physical indicators have taken place over time, particularly before and after the implementation of point source pollution controls or best management practices.

The data gathered by a biosurvey is processed, evaluated, and synthesized in a biological and water quality report. The findings and conclusions of each biological and water quality study may factor into regulatory actions taken by Ohio EPA and are incorporated into the Ohio Water Quality Standards (OAC 3745-1), Water Quality Permit Support Documents (WQPSDs), State Water Quality Management Plans, the Ohio Nonpoint Source Assessment, and the aquatic life beneficial use analysis in the Ohio Integrated Water Quality Report (this report, prepared to meet the requirements of sections 305(b) and 303(d) of the Clean Water Act) and TMDLs.

Additional information on DSW's water quality monitoring and assessment program at the following web site: <http://www.epa.state.oh.us/dsw/bioassess/ohstrat.html>.

Biosolids

Sewage sludge is the solid, semisolid or liquid untreated residue generated during the treatment of domestic sewage in a treatment facility. When treated and processed, sewage sludge becomes biosolids—nutrient-rich organic materials that can be safely recycled and applied as fertilizer. Only biosolids that meet the most stringent standards spelled out in the Federal and state rules can be approved for use as a fertilizer. Local governments make the decision whether to recycle the biosolids as a fertilizer, incinerate it or bury it in a landfill.

Ohio EPA received delegation to administer the Biosolids Program (Clean Water Act Section 503 Program) in 2005. In March 2000, House Bill 197 was passed by the Ohio General Assembly to provide the statutory authority for the Director of Ohio EPA to seek delegation of

the program. HB 197 modified the Ohio Revised Code (ORC) to provide the Director of the Ohio EPA the authority to adopt, enforce, modify, and rescind rules necessary to implement the Biosolids Program. HB 197 also modified the ORC to include an annual sewage sludge fee in order to fund the program. Each dry ton of sewage sludge, treated or disposed in the State of Ohio, is assessed a fee of three dollars and fifty cents, with a cap of six hundred thousand dollars per year on all monies collected.

Shortly after the passage of HB197, Ohio EPA began drafting rules that became effective in April 2002 as Ohio's Sewage Sludge Rules: Chapter 3745-40 of the Ohio Administrative Code (OAC). The purpose of Chapter 3745-40 of the OAC is to "establish standards applicable to the disposal, use, storage, or treatment of sewage sludge, which standards are intended to reasonably protect public health and the environment, encourage the beneficial reuse of sewage sludge, and minimize the creation of nuisance odors."

Funded by annual sludge fees, Ohio EPA hired staff to cover sewage sludge management duties in the field and office. These staff perform compliance evaluation inspections at POTWs that land-apply sewage sludge. They review monthly data submitted by POTWs to ensure compliance with pollutant limits, monitoring and reporting requirements, and perform authorization inspections at proposed land application sites. Field reconnaissance inspections are conducted at land application sites to verify compliance with site restrictions and management practices. These staff also review and recommend for approval the Sludge Management Plans and NPDES permits that regulate sludge generators.

Ohio EPA has also funded college interns through the annual sludge fees to track authorized sewage sludge application sites. The interns developed a Geographic Information System to add authorized sludge sites to a digital base map. Each authorized sludge site receives a unique identification number through the Surface Water Information Management System. The GIS project will be useful to manage the numerous land application sites and associated data such as cumulative pollutant loadings or proximity to source water protection areas for public drinking water supplies.

Combined Sewer Overflow Control Program

Combined sewers were built to collect sanitary and industrial wastewater, as well as storm water runoff, and transport this combined wastewater to treatment facilities. During dry weather, they are designed to transport all flow to the treatment plant. When it rains, the volume of storm water and wastewater may exceed the capacity of the combined sewers or of the treatment plant. When this happens, the combined sewers are designed to allow a portion of the combined wastewater to overflow into the nearest ditch, stream, river or lake. This is a combined sewer overflow (CSO). Ohio has about 1,340 known CSOs in 86 remaining communities (July 2007), ranging from small, rural villages to large metropolitan areas.

In 1994, U.S. EPA published the national CSO Control Policy. Working from the national policy, Ohio EPA issued its CSO Control Strategy in 1995. The primary goals of Ohio's Strategy are to control CSOs so that they do not significantly contribute to violations of water quality standards or impairment of designated uses and to minimize the total loading of pollutants discharged during wet weather. Ohio's Strategy addresses several issues that aren't covered by the national Policy; for example, sanitary sewer extensions that occur up pipe of CSOs.

In 2000, Congress passed the Wet Weather Water Quality Act, which did two important things. It codified the 1994 national policy by making it part of the Clean Water Act and it required that all actions taken to implement CSO controls be consistent with the provisions of the national Policy.

Ohio EPA continues to implement CSO controls through provisions included in NPDES permits and using orders and consent agreements when appropriate. The NPDES permits for our CSO communities require them to implement the nine minimum control measures. Requirements to develop and implement Long Term Control Plans (LTCPs) are also included where appropriate. In 2007, U.S. EPA adopted a new definition for the Water Safe for Swimming Measure, which sets goals to address the water quality and human health impacts of CSOs. The new definition sets a goal of incorporating an implementation schedule of approved projects into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones for 75% of the nation's CSO communities. As of July 2007, 64 of Ohio's original 98 CSO communities met this definition. An additional 10 communities are expected to meet the definition by October of 2008, bringing Ohio into compliance with U.S. EPA's goal.

Compliance Program

The Division of Surface Water staff works closely with the regulated community and local health departments to ensure that surface waters of the state are free of pollution. The regulated community with which DSW staff works includes wastewater facilities, both municipal and industrial, and small, unsewered communities experiencing problems with unsanitary conditions.

DSW staff provides technical assistance, conducts inspections of wastewater treatment plants, reviews operation reports, oversees land application of biosolids and manure from large concentrated animal feeding operations, and investigates complaints regarding malfunctioning waste water treatment plants and violations of Ohio's Water Quality Standards. DSW strives to ensure that permitted facilities comply with their National Pollutant Discharge Elimination System (NPDES) permits. DSW also assists small communities with inadequate means of waste water treatment seek alternatives to help abate pollution to waters of the state.

Concentrated Animal Feeding Operations

On December 14, 2000, Governor Taft signed a bill that started the process of transferring authority to regulate concentrated animal feeding facilities to the Ohio Department of Agriculture. The Ohio Department of Agriculture now regulates construction and operation of large concentrated animal feeding facilities under their Permit to Install (PTI) and permit to operate (PTO) program. However, PTI authority for sewage treatment and disposal systems at animal feeding facilities and for animal feeding facilities that discharge to publicly owned treatment works remains with Ohio EPA.

Ohio EPA also retains authority for implementing the National Pollutant Discharge Elimination System (NPDES) permit program for animal feeding operations until the delegation agreement with U.S. EPA is revised by Ohio and approved by U.S. EPA. Any facilities that meet the definition of a concentrated animal feeding operation (CAFO) need to apply to Ohio EPA for an NPDES permit.

U.S. EPA recently revised the federal regulations addressing definitions, the duty to apply for NPDES permits, and the requirements that must be contained in the NPDES permits for

CAFOs. The revised federal regulations for CAFOs became effective on April 14, 2003. A federal court decision on the appeal of those federal regulations will result in changes to the duty to apply and review of nutrient management plans provisions in the federal rules. Those changes are expected to be made by early 2008 at the national level, and Ohio EPA will need to adjust the permits and program accordingly. In the meantime, the NPDES General Permit for CAFOs that contains the 2003 federal requirements will continue to be used and individual NPDES permits for CAFOs will be issued with similar requirements.

The CAFO program at Ohio EPA uses a watershed perspective to prioritize work. Over the last several years, inspections were scheduled based on watersheds to provide the best support possible for TMDL activities. Individual permitting has been prioritized based on watershed issues to some degree, although the general the permit work has temporarily superseded that in order to get a more widespread impact. The status of the watershed is also considered in making decisions about enforcement and compliance activities (e.g., supplemental environmental projects may be preferred over penalties, more technical assistance may be focused on TMDL watersheds).

Credible Data – Volunteer Monitoring Program

The program's authorizing legislation was passed and signed by the Governor in 2003. Ohio EPA adopted rules in 2006 (OAC Chapter 3745-4) for the program's operation. The legislation and the rules are explicit in the desire to not only encourage the collection of water quality data by volunteers, but also to ensure that the data are valid and useful for their intended purpose. In other words, the data should be "credible." The rule package bears the name "Credible Data" because of this important feature, and because the enabling legislation was referred to as the credible data bill. Thus, the words "credible data" appear in the terminology applied to voluntary monitoring programs that choose to participate.

As envisioned by the legislation, any person with an interest in water quality should have a means to collect certain types of data useful for various inquiries about the quality of the water resource. Ohio EPA's role is to foster and broadly oversee the collection, analysis and use of data collected by such "volunteer" individuals and organizations. To promote scientific validity, Ohio EPA has established specific requirements to participate in the program and to collect data using approved study plans.

The law and the administrative regulations are the basis for establishing three broad categories or levels of data that will be deemed "credible" for distinctly different purposes. The overall premise is that there must be an increasing level of scientific rigor behind the sampling and analytical work as we progress from Level 1 to Level 2 to Level 3.

Level 1 was designed with educators in mind and may be appropriate for Soil & Water Conservation Districts, Park Districts, Health Departments, or anyone with an interest in Ohio water quality. The purpose of Level 1 is primarily to promote public awareness and education about surface waters of the state.

Level 2 was designed with watershed groups in mind. Level 2 data can be used to evaluate the effectiveness of pollution controls, to conduct initial screening of water quality conditions, and to promote public awareness and education about surface waters of the state. Level 2 groups are often in the position to perform the valuable function of monitoring long-term surface water

quality trends in a watershed (where Ohio EPA may not have the resources to frequently revisit a particular area).

Level 3 provides the highest level of scientific rigor and methods are equivalent to those used by Ohio EPA personnel. The law limits the Director's use of data collected under the credible data program for certain regulatory applications (for example, setting water quality standards and evaluating attainment of those standards) to verified Level 3 data. In other words, data submitted under this program as Level 1 and Level 2 data cannot be used for those regulatory purposes.

As of September 2007 the Agency has approved 102 Qualified Data Collectors and seven study plans. Efforts are underway to train additional participants and to create a web-based portal for data entry and data access.

Enforcement Program

Quarterly Non-Compliance Reports are prepared by all delegated states and contain instances of non-compliance, State or Federal enforcement responses to the instance of non-compliance, other actions being taken to address the violations, and current compliance status for major dischargers. In cases in which Ohio EPA is unable to resolve continuing water quality violations, DSW may recommend that enforcement action be taken. An enforcement action could be Director's Final Findings and Orders completed within the Ohio EPA or a Judicial Consent Order completed through the Attorney General's Office. The enforcement and compliance staff work with Ohio EPA attorneys, as well as the Attorney General's Office to resolve these cases. Where possible, an added emphasis and priority is given to actions in sensitive watersheds. All final enforcement actions are posted on the DSW web page.

General Permits

Ohio EPA is working to eliminate the backlog of pending applications and expired minor discharger permits. The issuance of general permits is one important tool in this effort. A general permit is a single permit issued that can cover specific industries, types of discharges, or geographic areas. A general permit can require the use of best management practices or include effluent limitations and associated monitoring. In either case the requirements are deemed protective of water quality. Permits may cover all regions of the State, or only specific areas. For example, some permits are not available for certain streams that have very strict water quality conditions. Applicants submit a brief "Notice of Intent" (NOI) and the appropriate fee to be covered by a specific general permit.

U.S. EPA delegated administration of the general permit program to Ohio EPA on August 17, 1992. Ohio EPA currently has eight general permits available to dischargers. These permits cover the following areas:

- discharge of non-contact cooling water
- discharge of wastewater for petroleum related corrective actions
- coal strip mining
- small municipal separate storm sewer systems (2 permits)
- industrial storm water
- construction storm water (two permits, one specific to the Big Darby watershed)
- small sanitary wastewater dischargers

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- drinking water treatment plants
 - temporary discharges
 - petroleum bulk storage facilities
 - home sewage treatment discharges

Lake Erie Programs

The Ohio EPA Division of Surface Water participates in many Lake Erie and Great Lakes related issues and efforts. The two main programs, however, are: the development and implementation of Remedial Action Plans (RAPs) for the Maumee, Black, Cuyahoga and Ashtabula river areas of concern; and the development and implementation of a lakewide management plan (LaMP) for Lake Erie. Both of these efforts are focused on reducing the loadings of pollutants and restoring all beneficial uses to these waterbodies. Both programs are described in the Great Lakes Water Quality Agreement between Canada and the United States, and are mandated under the Great Lakes Critical Programs Act amendment to the Clean Water Act.

Remedial Action Plans

The Ohio Areas of Concern (AOCs) are the most environmentally degraded areas along Ohio's Lake Erie coast. The restoration of these areas requires an ecosystem approach and considerable public involvement. It has taken years to assess them and implement the actions needed to restore them. This has been done with the assistance of many partners from the state, federal and local governments as well as citizens, industries, businesses, special interest groups and researchers. The advantage of partnerships is the expanded availability of technical expertise and funding opportunities, as well as increased accountability and the potential for long-term stewardship.

The Great Lakes Water Quality Agreement lays out 14 beneficial use impairments (BUIs) that must be remediated in order to restore the AOCs. In many ways these BUIs reflect the same goals as represented in the Ohio water quality standards (WQS) for attainment of beneficial uses. The BUIs include: 1) restrictions on fish and wildlife consumption; 2) tainting of fish and wildlife flavor; 3) degradation of fish and wildlife populations; 4) fish tumors or other deformities; 5) bird or animal deformities or reproductive problems; 6) degradation of benthos; 7) restrictions on dredging; 8) eutrophication or undesirable algae; 9) restrictions on drinking water or taste and odor problems; 10) beach closings; 11) degradation of aesthetics; 12) added costs to agriculture and industry; 13) degradation of phytoplankton and zooplankton populations; and 14) loss of fish and wildlife habitat. Ohio EPA has developed a guidance document that sets targets for each of the BUIs based on existing Ohio WQS and other policies or procedures. The goal of the Great Lakes RAP program is to delist the AOCs by restoring all beneficial uses to these rivers. Delisting is comparable to being in attainment although there are a few differences.

Many activities have occurred in the AOCs over the years and some of these efforts are now coming to fruition. The Ashtabula River from the upper turning basin to the 5th St. Bridge was dredged under the Great Lakes Legacy Act program in 2006 and 2007. Approximately 500,000 cubic yards of sediments contaminated with polychlorinated biphenyls, polyaromatic hydrocarbons, heavy metals and a myriad of organochlorine compounds were removed and pumped upland to a confined disposal facility built specifically to contain the river dredgings. The river from the 5th St. Bridge to the lake will be dredged under U.S. Army Corps of Engineers authorities in 2008. Once the sources of contamination have been removed, additional projects will be implemented to restore and enhance habitat. It is expected that the removal of

contaminated sediments from the river will delist the BUI for dredging and greatly improve the progress toward delisting the BUI for degradation of benthos, fish tumors and fish consumption restrictions. The habitat restoration projects will assist in improving fish and wildlife populations and habitat.

The incidence of fish tumors and deformities in Black River brown bullheads, as well as the DELT percentage for all fish, has decreased significantly, prompting the lifting of a contact advisory and the redesignation of the tumor BUI as being “in recovery.” Dam removal in the Cuyahoga River mainstem has greatly improved the quality of the river. An innovative program is underway to incorporate “green bulkheads” along the edges of the ship channel to improve habitat for fish passage and residence. Habitat restoration inventories are underway in all four Ohio AOCs. They will assist in setting priorities for restoration and having on-the-ground restoration projects ready to go as various funding sources arise.

Lake Erie Lakewide Management Plan (LaMP)

The Lake Erie LaMP was originally intended to focus on reducing loadings of pollutants to the lake. However, the early participants in the LaMP process felt that other issues were as important as, or more important than, toxics. Therefore, the Lake Erie LaMP also looks at nutrient loadings, land use, invasive species, and exploitation of the lake’s resources. The Lake Erie LaMP should be viewed as a framework to define the management intervention needed to bring Lake Erie back to chemical, physical and biological integrity, and to further define agency commitments to those actions.

Over the last 10 years, the Lake Erie ecosystem has undergone changes that have significantly altered the internal dynamics of the lake. These changes have largely been influenced by the influx of zebra and quagga mussels, round gobies and other invasive species. There also appears to be an increase in the amount of dissolved (bioavailable) phosphorus that is being loaded into the lake. Algal blooms of cyanobacteria and *Cladophora* are reappearing at levels comparable to the blooms of the 1960s and 1970s. Ohio EPA has initiated an Ohio Lake Erie Phosphorus Task Force to better track down the phosphorus sources to determine what management actions may be needed to control nutrient input to the lake. The Lake Erie LaMP is also focusing on the input of nutrients at a lakewide, binational level.

Monitoring the water quality of the Great Lakes is a federal responsibility. However, the control of sources into the lake falls under the authority of state agencies. Ohio has complied with the Great Lakes Initiative (GLI) by rewriting all NPDES permits to meet water quality standards revised under the GLI. TMDLs, watershed action plans, storm water management plans and the RAPs are addressing better management of nonpoint sources in the tributaries to Lake Erie.

National Pollutant Discharge Elimination System (NPDES) Permits

To protect Ohio's water resources, Ohio EPA issues National Pollutant Discharge Elimination System (NPDES) permits. These permits authorize the discharge of substances at levels that meet the more stringent of technology or water based effluent limits and establish other conditions related to issues such as combined sewer overflows, pretreatment and sludge disposal. This is an overview of the process for issuing individual NPDES permits. The series of steps for a particular permit may vary somewhat depending on the size, nature, and complexity of the discharge.

The first step in developing an NPDES permit is acquisition of chemical, physical, and biological data from the field and laboratory. In-stream chemical data are collected to determine the effect of the discharge on receiving water and sediment quality. Biological data are collected to determine if the discharge is having an impact on the fish and macroinvertebrate organisms that live in the receiving water. Effluent chemical data are also obtained to establish an accurate portrayal of current discharge conditions. In-stream chemical data and stream physical data, such as cross section measurements and flow, are necessary for conducting water quality modeling.

As part of developing effluent limits and monitoring requirements, the water quality standards that apply to the receiving water are determined, and federal effluent guidelines are consulted for applicability. Permit conditions are developed to protect the designated use and associated chemical criteria of the receiving stream as well as any applicable technology requirements. Permits are also based on the applicable regulatory requirements to address issues such as new or expanded discharges, combined sewer overflows, sludge disposal, and industrial pretreatment programs.

Since the early 1990s, Ohio EPA has moved to issuing permits on a watershed basis. Ohio EPA has built on this watershed approach in recent years by integrating the NPDES renewals with the TMDL process. Permit writers are included on the TMDL teams and work with permittees and the TMDL team on permit language necessary to implement the TMDL. This allows concurrent development of the TMDL and renewal of NPDES permits.

Nonpoint Source Program

The framework for Ohio's nonpoint source (NPS) program is detailed in Ohio's Nonpoint Source Management Program. In September 2005, a revised plan – "Getting to the Point on Nonpoint" – was developed in conjunction with a multitude of nonpoint source management partners convened as a work group under the Ohio Water Resources Council. The revised plan provides an aggressive framework for implementing nonpoint source management program activities through 2010. This plan represents a solid foundation for progress, built upon the many lessons that Ohio has learned during previous years.

Ohio's NPS Management Program relies heavily upon TMDL development and local watershed planning, during which the nature, extent and cause of water quality impairments caused by nonpoint source pollutants are identified. Program strategies are then designed to most effectively address identified NPS causes of impairment to Ohio's surface waters. An important revision to Ohio's Nonpoint Source Management Plan is the incorporation of identified local strategies from TMDL studies and state endorsed local watershed plans. Once such strategies are incorporated into Ohio's NPS Plan, Ohio EPA and other state funding partners mobilize programs and resources designed to result in measurable improvements to water quality throughout Ohio. For example, since 2002 Ohio EPA has awarded nearly \$25 million in Section 319(h) implementation grants to watersheds with completed TMDL studies and/or state endorsed watershed plans. Section 319(h) base funding also provides significant support for staff biologists, modelers and others involved in the TMDL and watershed planning processes.

An important component of Ohio's NPS Management Program involves effectively communicating all of the activities that are underway to address NPS impairments within Ohio's watersheds. Additionally, these educational and outreach efforts are designed to inform Ohioans of the actions they can undertake to contribute to solving NPS impairments.

Success in minimizing the impacts of NPS pollution depends heavily upon local implementation of restoration and NPS pollution prevention projects and programs. Progress in addressing a problem as ubiquitous as nonpoint source pollution requires creativity, collaboration and a commitment to quality and effective project implementation. Ohio's NPS Management Program embraces all of these characteristics and reflects an ongoing determination to implement programs, projects and activities that result in meaningful and measurable improvements to Ohio's rivers, streams, lakes and groundwater supplies.

Pretreatment

The State of Ohio received authorization to administer the Pretreatment Program on July 27, 1983. Ohio has approved 100 local pretreatment programs. Many of these programs, such as Cincinnati's Metropolitan Sewer District and Cleveland's Northeast Ohio Regional Sewer District, are national leaders and are regarded as very strong pretreatment programs.

A goal of Ohio EPA's Pretreatment program is to permit 100% of significant industrial users (SIUs) with control mechanisms to implement applicable pretreatment standards and requirements. The Ohio EPA permit framework is designed to ensure that all SIUs within the state, regardless of the publicly-owned treatment works' (POTW) pretreatment program approval status, are issued permits. Those SIUs in approved pretreatment program POTWs are identified by industrial user surveys. All of the State's 1215 SIUs discharging to POTWs with approved programs, and all 174 (known) SIUs that discharge into pretreatment POTWs without approved pretreatment programs have control mechanisms, for a total of 1474 known SIUs in Ohio.

A highlight of Ohio's program is the strong indirect discharge permit program. The Ohio Indirect Discharge Permit (IDP) program permits, monitors, inspects, and provides enforcement to the SIUs that discharge into pretreatment POTWs without approved pretreatment programs. By this program, Ohio EPA prevents toxic discharges to these smaller POTWs and thereby reduces the potential of severe environmental harm from these facilities.

Section 208 Plans and State Water Quality Management Plan

Ohio EPA oversees the State Water Quality Management (WQM) Plan. The State WQM Plan is a requirement of Section 303 of the Clean Water Act and must include nine (9) discrete elements:

1. Total maximum daily loads (TMDLs)
2. Effluent limits
3. Municipal and industrial waste treatment
4. Nonpoint source management and control
5. Management agencies
6. Implementation measures
7. Dredge and fill program
8. Basin plans
9. Ground water

In layperson terms, the State WQM Plan is an encyclopedia of information used to plot and direct actions that abate pollution and preserve clean water. A wide variety of issues are addressed and are framed within the context of applicable law and regulations. For some

issues and locales, information about local communities may be covered in the plan. Other issues are covered only at a statewide level. Many of the topics or issues overlap with planning requirements of CWA Section 208 (items 3-9 above). The State WQM Plan includes, through references to separate documents, all 208 plans in the State.

Local governments typically conduct planning to meet the sewage disposal needs of the community. Ohio EPA has established guidelines for planning that are useful in the context of Section 208 and the State Water Quality Management Plan. Local governments that follow these guidelines are more likely to have the results of their planning work incorporated into the State 208 plan prepared by Ohio EPA. The Areawide Planning Agencies have established their own operating protocols, committees and processes to involve local governments in shaping their 208 plans.

Section 208 of the federal Clean Water Act requires states to identify regional water planning areas to prepare, maintain and implement water quality management plans. Five Areawide Planning Agencies updated their plans in 2006 and Ohio EPA updated plan content covering 42 additional counties. The Governor certified the plan updates on September 1, 2006 and U.S. EPA approved the plan in November of 2006.

Section 401 Permits

According to the federal Clean Water Act, anyone who wishes to discharge dredged or fill material into the waters of the United States, regardless of whether on private or public property, must obtain a Section 404 permit from the U.S. Army Corps of Engineers (Corps) and a Section 401 Water Quality Certification (WQC) from the state. Ohio EPA has pre-granted Section 401 Water Quality Certifications to 404 permits for certain types of projects that are similar in nature and cause minimal degradation to waters of the state. These permits are called Nationwide Permits and substantially expedite the permitting process.

For projects requiring an individual Section 401 WQC, Ohio EPA has prepared Pre-application Guidelines and Projects and Activities of Concern to assist with the permitting process. For projects involving activity within a wetland, the Ohio Rapid Assessment Method for Wetlands is most often used to assist in determining the appropriate wetland classification per Ohio's water quality standards.

Staff reviewing 401 WQCs have been organized by watersheds in order to better understand the issues and concerns that are unique to any particular watershed. By focusing their application reviews within specific geographical areas, DSW staff are better able to conduct application reviews that consider issues in a broader, watershed context.

Semi-Public Disposal System Inspection Contracts (HB 110)

Annually, Ohio EPA issues hundreds of permits for the installation and operation of small, commercial/industrial wastewater treatment and/or disposal systems. These may be onsite soil dissipation systems or discharging systems under the NPDES permit program for the treatment and disposal of sewage generated within the operation. To date, there are thousands of these small systems operating in Ohio. These "semi-public" systems may include apartment complexes, small businesses, industrial parks, etc. and, by definition, are basically any system that treats sewage from human activities up to a capacity of 25,000 gallons per day. Because of the magnitude and resources available, many of these systems have the potential of going

without regular inspections to determine if they are complying with state rules, laws and regulations and ultimately protecting water quality.

As an aid to support this program, the Ohio General Assembly created Ohio EPA's HB110 program. The program is a contractual partnership between Local Health Districts (LHDs) and Ohio EPA, whereby LHDs conduct, on behalf of the Agency, inspection and enforcement services for commercial sanitary waste treatment/disposal systems discharging between 0-25,000 gallons per day (semi-publics).

Ohio EPA operates the HB110 program to better protect the public health and welfare and to protect the environment. Ohio EPA believes that because of the proximity, the multitude of facilities, and the availability of resources, oversight of operations for sanitary waste disposal at semi-publics may best be accomplished locally by qualified personnel.

To offset costs of local oversight, State law (Revised Code 3709.085) authorizes LHDs to charge fees for inspection services to be paid by semi-publics.

Inspection Program

In accordance with Ohio EPA's HB110 contracts, LHDs regularly inspect sanitary facilities at semi-publics for compliance with Ohio's water pollution control laws and regulations. Investigations of complaints regarding waste disposal by semi-publics are also accomplished locally.

Ohio EPA also consults with LHDs on the approval of plans and issuance of permits-to-install (PTIs) for semi-publics. Installation inspections may be performed locally to ensure compliance with Ohio EPA's PTI conditions.

Enforcement Activities

In coordination with Ohio EPA, LHDs may notify entities of noncompliance with Ohio's water pollution control regulations. LHDs are also instrumental in identifying semi-publics installed without PTIs, of which Ohio EPA may not be aware.

Where noncompliance notification and informal requests fail to correct violations, entities may be referred to Ohio EPA for enforcement or the County Prosecutor may bring an action under local nuisance ordinances. All discharges of pollutants that are unpermitted or in excess of permitted amounts are statutory nuisances under Revised Code 6111.04.

Training Program

Ohio EPA intends to provide periodic training for LHDs. Training programs will focus on sanitary waste disposal for Semi-Public facilities, technical assistance, inspection issues, and enforcement case development.

Summary

The HB110 program is a unique opportunity for Ohio EPA and LHDs to assist one another in achieving the mutual goal of protecting public health and welfare. Through responsible regulation of Semi-Public facilities, the local community will benefit from decreased health risks and the State as a whole will benefit from improvements in water quality. Ohio EPA welcomes the participation of all LHDs.

Storm Water Permit Program

Ohio EPA implements the federal regulations for storm water dischargers. Dischargers currently covered include certain municipalities (Phase I and II of the program) with separate storm sewer systems (MS4s) and those facilities that meet the definition of industrial activity, including construction, in the federal regulations.

Ohio EPA initially issued two storm water general permits: one for construction activity and the other for all remaining categories of industrial activity in 1992. The strategy was to permit the majority of storm water dischargers with these baseline general permits (33 USC § 1342; OAC 3745-38). It is estimated that 32,000 storm water discharges have been granted general permit coverage since that time. The industrial permit has been renewed three times. The construction permit was renewed in 2003 and addresses large and small construction sites and is scheduled for its third renewal in early 2008. The application form is a one-page Notice of Intent (NOI). Ohio EPA responds to NOIs with approval letters for coverage under one of the general permits or, in limited instances, instructions to apply for an individual permit.

After the baseline general permits were issued, Ohio EPA directed its efforts towards further permitting, compliance and enforcement activities, education and technical assistance. Inspections and complaint investigations for compliance and enforcement have been handled at the district level as resources allow. Best management practices (BMPs) and pollution prevention has been the major thrust of education and technical assistance activities.

On the municipal side of permitting, five large and medium municipalities in Ohio submitted applications between November 1991 and November 1993. A work group was formed with the cities to draft acceptable permit language for the municipal permits. Best management practices included in a city-wide storm water management plan is the primary focus of the permits. The cities of Dayton, Toledo and Akron received their original permits in 1997. Exceptions for Cleveland and Cincinnati were also processed. Columbus received its initial permit in 2000. Permits for Columbus, Toledo, and Akron have been renewed once. Dayton's permit has been renewed twice.

Additional categories of discharges, both public and privately owned, were included in Phase II. U.S. EPA issued Phase II regulations in December of 1999. The Phase II storm water regulations required a general permit for small MS4s be issued by December of 2002, and required applications by March of 2003. Ohio EPA issued two general permits for small MS4s during 2002. One is a baseline permit and the second is for MS4s in rapidly developing watersheds. This latter permit accelerates construction and post-construction measures to protect surface waters from the impacts of high density land use development. Federal regulations allowed small MS4s to apply for individual NPDES permits in lieu of general permit coverage. No small MS4 within Ohio chose the individual permit option. The Small MS4 general permit is scheduled for renewal in early 2008.

On the construction side of permitting, Ohio EPA has begun to develop and issue watershed specific construction permits if recommended by a TMDL. On September 12, 2006, Ohio EPA issued a watershed specific construction permit for the Big Darby Creek watershed. This permit contains conditions/requirements that differ from the standard construction permit. Ohio EPA anticipates developing additional watershed specific permits when recommended by TMDLs.

Total Maximum Daily Load Program

The Total Maximum Daily Load (TMDL) program identifies and restores polluted waters. TMDLs can be viewed simply as problem solving: investigate the problem, decide on a solution, implement the solution, and check back to make sure the solution worked. By integrating programs and aligning resources, Ohio is pursuing TMDLs as a powerful tool to develop watershed-specific prescriptions to improve impaired waters.

Ohio uses three key enhancements to the basic federal TMDL requirements to increase the chances that real, measurable improvements in Ohio's water resources will result:

- an initial, in-depth watershed assessment to obtain recent data for analysis of problems and discussion of alternatives
- implementation actions identified as part of the TMDL with follow-through in permitting and incentive programs such as 319 and loan funds
- involving others – citizens, landowners, officials, natural resource professionals – in the process.

In particular, involving others is critical to restoring waters. Working watershed by watershed, we meet with citizens and landowners to explain the findings of our water quality studies and to identify workable solutions to the problems we have found. We include other agencies who can improve water resources either by exercising their authority in new ways or through relationships they have already established with critical decision makers. After solutions are identified and recommendations are made, we follow-through with meetings with consultants, elected officials, and others to ensure that projects continue to completion.

Ohio's TMDL program approach has been endorsed by an external advisory group of Ohio citizens, businesses, and interest groups. The program already incorporates many of the recommendations of the National Research Council 2001 study.

TMDLs are active in about one-half of Ohio's watershed units, as shown in the "Ohio TMDL Program Progress" map in Section K. By the end of 2007, 30 TMDL projects (many including more than one unit) had been approved by U.S. EPA and about 30 others are currently being developed. The approved projects include two federal TMDLs completed by U.S. EPA Region 5 (Wabash River (05120101 101 and 040) and Mahoning River (05030103 050 and 080)). All of these TMDLs are available on Ohio EPA's TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html>.

In October 2001, U.S. EPA was sued by several environmental interest groups over the pace of progress in Ohio's TMDL program (National Wildlife Federation et al. v United States Environmental Protection Agency et al., Case No. C2-01-1052). The State of Ohio and various industry groups intervened in the litigation. A Consent Decree was established in August 2004, containing two requirements: to conduct assessments in 50 assessment units and to establish TMDLs in 50 assessment units by September 30, 2007. In the final court report (November 2006), Ohio EPA listed completed assessments in a total of 141 assessment units and approved TMDLs in 56 assessment units, both surpassing the Consent Decree requirements. By September 30, 2007, Ohio had completed assessments in 165 assessment units and approved TMDLs in 64 assessment units.

Water Quality Standards

Our water quality is constantly threatened by many different sources and types of pollution. Under the Clean Water Act, every state must adopt water quality standards to protect, maintain and improve the quality of the nation's surface waters. These standards represent a level of water quality that will support the goal of "swimmable/fishable" waters. Water quality standards are ambient standards as opposed to discharge-type standards. These ambient standards, through a process of back calculation procedures known as total maximum daily loads or wasteload allocations form the basis of water quality based permit limitations that regulate the discharge of pollutants into surface waters under the National Pollutant Discharge Elimination System (NPDES) permit program. The key components of Ohio's WQS (OAC Chapter 3745-1) are described below.

Beneficial use designations describe existing or potential uses of water bodies. They take into consideration the use and value of water for public water supplies, protection and propagation of aquatic life, recreation in and on the water, agricultural, industrial and other purposes. Ohio EPA assigns beneficial use designations to water bodies in the state. There may be more than one use designation assigned to a water body. Examples of beneficial use designations include: public water supply, primary contact recreation, and aquatic life uses (warmwater habitat, exceptional warmwater habitat, etc.)

Numeric criteria are estimations of concentrations of chemicals and degree of aquatic life toxicity allowable in a water body without adversely impacting its beneficial uses. Although numeric criteria are applied to water bodies, they primarily are used to regulate dischargers through NPDES permits. To ensure protection of those beneficial uses, Ohio EPA determines maximum acceptable concentrations for over 100 chemicals.

Narrative criteria are general water quality criteria that apply to all surface waters. These criteria state that all waters shall be free from sludge, floating debris, oil and scum, color and odor producing materials, substances that are harmful to human, animal or aquatic life, and nutrients in concentrations that may cause algal blooms. Much of Ohio EPA's present strategy regarding water quality based permitting is based upon the narrative free from, "no toxics in toxic amounts." Ohio EPA developed its strategy based on an evaluation of the potential for significant toxic impacts within the receiving waters. Other components of this evaluation are the biological survey program and the biological criteria used to judge aquatic life use attainment.

Biological criteria are based on aquatic community characteristics that are measured both structurally and functionally. These criteria are used to evaluate the attainment of aquatic life uses. The data collected in these assessments are used to characterize aquatic life impairment and to help diagnose the cause of this impairment. The principal biological evaluation tools used by Ohio EPA are the Index of Biotic Integrity (IBI), the Modified Index of Well-Being (MIwb) and the Invertebrate Community Index (ICI). These three indices are based on species richness, trophic composition, diversity, presence of pollution-tolerant individuals or species, abundance of biomass, and the presence of diseased or abnormal organisms. The IBI and the MIwb apply to fish; the ICI applies to macroinvertebrates. Ohio EPA uses the results of sampling reference sites to set minimum criteria index scores for use designations in water quality standards.

Antidegradation policy aims to keep clean waters clean if possible. The policy is adopted in rule (OAC 3745-1-05) and describes the conditions under which water quality may be lowered in surface waters. Existing beneficial uses (see Figure C-1) must be maintained and protected. Further, water quality better than that needed to protect existing beneficial uses must be maintained unless lower quality is deemed necessary to allow important economic or social development (existing beneficial uses must still be protected).

Public participation is mandated and encouraged in all administrative rule makings including the WQS. Any interested individuals are afforded an opportunity to participate in the process of developing water quality standards. Ohio EPA reviews and, as appropriate, revises water quality standards at least once every three years. When water quality standards revisions are proposed, the public is notified of these revisions. A public hearing is held to gather input and comments.

Wetland Bioassessment Program

Numerous grants from U.S. EPA over many years have funded work that is advancing the science of wetland assessment methodologies in Ohio. Published work includes an amphibian index of biotic integrity (AmphIBI) for wetlands, a vegetation index of biotic integrity (VIBI) for wetlands, and a comparison of natural and mitigation (constructed) wetlands. More recently reports on using wetland invertebrates as indicators, a study of Ohio's wetland mitigation banks, a condition assessment of wetlands in the Cuyahoga River watershed and a study on the condition and functions of urban wetlands as well as other reports on wetland topics have become available on the on the Division of Surface Water web page: http://www.epa.state.oh.us/dsw/wetlands/WetlandEcologySection_reports.html.

DSW recently received a grant from the federal government to compare the ecological condition of 25 randomly selected mitigation wetlands from around the state with results from Ohio's natural wetlands. Mitigation wetlands in the study are of different age classes to assure a cross section. This study is almost complete and will be reported on soon. Future studies will include an in-depth analysis of the association between stream and wetland condition and functions in the Big Run Scioto River watershed and incorporating wetland information with data from other surface water resources to develop a Total Maximum Daily Load analysis of a watershed.

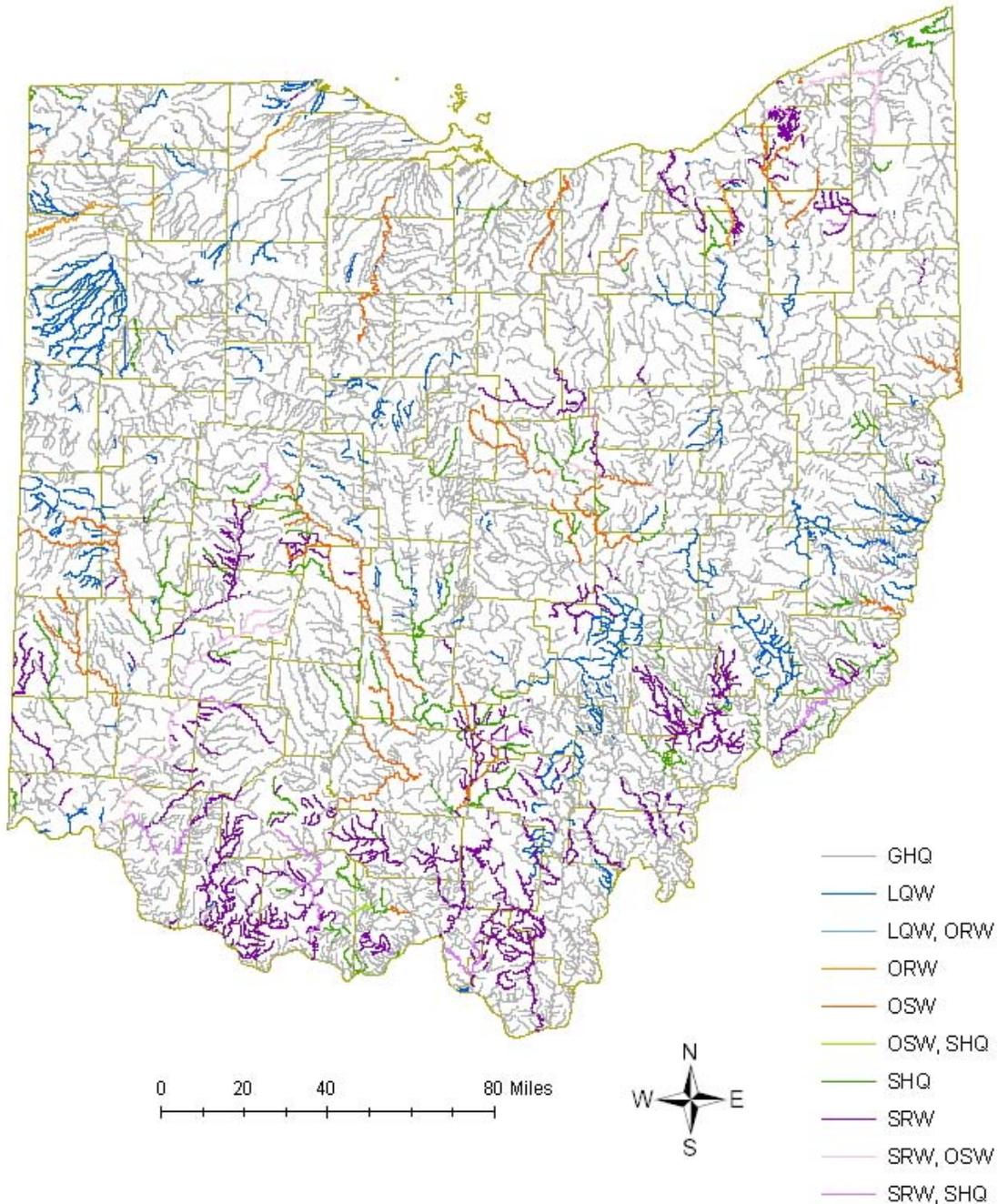


Figure C-1. Antidegradation categories for Ohio streams.

GHQ	General High Quality	ORW	Outstanding National Resource Waters
LQW	Limited Quality Waters	OSW	Outstanding State Waters
SQH	Superior High Quality	SRW	State Resource Waters

Wetland Protection Program

Ohio's WQS (OAC 3745-1-50 to -54) contain definitions, beneficial use designations, narrative criteria and antidegradation provisions specific to wetlands. Many of the provisions for other surface water bodies apply to wetlands, including the narrative "free froms." For

antidegradation review purposes wetlands are placed into the classifications of either Limited Quality Waters (Category 1 wetlands) or General High Quality Waters (Category 2 and 3 wetlands). There are specific provisions for wetland use designation, wetland narrative criteria, numeric criteria for waste water discharges to wetlands, and wetland antidegradation.

All wetlands receive the same beneficial use designation. OAC 3745-1-53 gives all wetlands the "wetland" designated use. The wetland antidegradation rule, OAC 3745-1-54, places wetlands into one of three categories based on the wetland's relative functions and values, sensitivity to disturbance, rarity, and potential to be adequately compensated for by wetland mitigation. The level of protection provided and the corresponding demonstrations necessary to allow impacts, the mitigation ratios and mitigation location all vary with the category of wetland proposed for impacts.

Categories 1, 2, and 3 wetlands demonstrate minimal, moderate and superior wetland functions, respectively. Wetlands assigned to Category 1 may be typified by hydrologic isolation, low species diversity, a predominance of non-native species, no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions. Category 2 wetlands may be typified by wetlands dominated by native species but generally without the presence of or habitat for, rare, threatened or endangered species and wetlands that are degraded but have a reasonable potential for reestablishing lost wetland functions. Wetlands assigned to Category 3 typically have high levels of diversity, a high proportion of native species, high functional values and may contain the presence of or habitat for rare, threatened and endangered species. Wetlands that are scarce, either regional or statewide, form a subcategory of Category 3 wetlands for which, when allowable, only short-term disturbances to water quality can be authorized.

C2. Program Summary – Environmental and Financial Assistance

The Division of Environmental and Financial Assistance (DEFA) provides incentive financing, supports the development of effective projects, and encourages environmentally proactive behaviors through three programs - the Ohio Water Pollution Control Loan Fund, the Water Supply Revolving Loan Account and the Village Capital Improvement Fund. See Section 3.6.4 for a ten-year financial summary of these financing programs. In addition, the division reviews Ohio Power Siting Board applications to identify potential environmental impacts from proposed projects, as well as measures to mitigate these impacts to acceptable levels.

Water Pollution Control Loan Fund

In State Fiscal Year 2007 (SFY 2007), the Water Pollution Control Loan Fund (WPCLF) financed a number of municipal wastewater treatment needs, as well as nonpoint source pollution control needs, as enumerated below. Through this program \$280.2 million in financing were provided. The fund also exceeded the \$3.8 billion mark for total loans awarded since its beginning in October 1989.

The WPCLF financed implementation of 71 municipal wastewater treatment projects costing more than \$258 million. The projects directly addressed sources of impairment for Ohio water resources, saving these communities more than \$66 million in interest costs on loans made. Included in the total were:

-
- \$59.6 million in loans to 30 small, economically challenged communities, saving these communities more than \$26.4 million of interest costs for facilities planning, design, and construction projects. Technical assistance was also provided to these communities.
 - \$19.6 million loan to the City of Lorain for the construction of a relief sewer for the west side of the city.
 - \$41.9 million to Greene County for badly needed improvements to its Sugarcreek plant.
 - \$13.7 million to the City of Dover for improvements to its wastewater treatment plant.

Nonpoint source pollution is addressed through two programs of the WPCLF. The Water Resource Restoration Sponsor Program (WRRSP) financed nine projects for over \$13.4 million to protect and restore stream and wetland aquatic habitats in the Darby Creek, Little Miami, and Cuyahoga River watersheds. Projects financed through the WRRSP included:

- \$2.1 million for the restoration of Pond Brook Wetlands, in Summit County.
- \$9.7 million for restoration and protection of streams and wetlands within the Little Miami River watershed.

The WPCLF linked deposit program provided interest rate reductions for 192 loans totaling \$8.3 million to private agricultural producers and loggers for implementation of best management practices to control nonpoint water source water pollution, and to individuals for septic system improvements. These loans saved the recipients over \$940,000 when compared to the cost of conventional financing.

Water Supply Revolving Loan Account

The Water Supply Revolving Loan Account focuses on drinking water supplies. In SFY 2007, the fund made 29 loans for more than \$59.6 million, saving recipients over \$15.2 million. Of this amount \$28.7 million were for water transmission and distribution lines, \$18.7 million were for treatment facilities, and \$12.1 million were for storage tanks and development of water sources.

Included in the total were small community loans of \$164,000 to the Old Straitsville Water Association for construction of new distribution lines to serve homes that were on private wells contaminated by bacteria and excessive mineral levels, including brine and natural gas. The Village of Lisbon received a \$2.2 million loan to put in a new membrane filtration system, addressing Ohio EPA Findings and Orders relating to inadequate treatment of its drinking water.

Village Capital Improvement Fund

For SFY 2007, interest-free loans totaling \$61,041 were provided through the Village Capital Improvements Fund to three villages. These loans are assisting the planning and design of wastewater treatment and public water supply facilities.

Ohio Power Siting Board

While there has been a dramatic decline in applications to the Ohio Power Siting Board in recent years for construction of new generation facilities as compared to the period immediately after electric deregulation went into effect in Ohio (1999 - 2002), the overall number of board projects has remained fairly high. The majority of these involved new or replacement natural gas or electric transmission lines. Typical issues encountered include stream and wetland crossings; stream, wetland, and woodland protection; threatened/endangered species; and headwater stream protection. In 2007, the board formally considered actions on 14 projects.

C3. Program Summary – Drinking and Ground Waters

Every Ohioan relies on a safe source of drinking water. The Division of Drinking and Ground Waters (DDAGW) Drinking Water Program has jurisdiction over approximately 5,400 public water systems that are required to ensure a safe and adequate supply of drinking water to over 10 million Ohioans.

The Drinking Water Program oversees the design and construction of water treatment facilities through plan approval; conducts a sanitary survey inspection program; administers an operator certification program and a drinking water revolving loan fund; oversees compliance monitoring for bacteriological and chemical contaminants; and implements a Source Water Assessment and Protection Program to protect water sources of drinking water including the development of a public water supply beneficial use assessment methodology to evaluate Ohio's public water supplies that rely on surface water resources.

The DDAGW's Ground Water Program maintains a statewide ground water quality monitoring program and conducts ground water quality investigations; provides technical support to other Ohio EPA programs by providing technical expertise on local hydrogeology and ground water quality; and protects ground water resources through the regulation of waste fluid disposal in its Underground Injection Program for Class I, IV and V wells.

C4. Program Summary – Environmental Services

For Ohio EPA to protect public health and the environment, Agency staff depend on scientific data to make well-informed decisions. Ohio EPA's laboratory, known as the Division of Environmental Services (DES), provides most of this data. DES analyzes environmental samples for more than 300 parameters. They also inspect other laboratories and provide technical assistance to other Ohio EPA divisions as well as other state and local agencies. The lab provides chemical analyses of drinking, surface, and ground water; wastewater effluent, sediment; soil; sludge; manure; air filters and air canisters; and fish tissue. The following are some of the vital services provided by DES in an average 12-month period:

- processed over 9,400 samples and generated over 151,000 inorganic and 132,000 organic scan test results covering a variety of matrices including water, drinking water, soil, sediment, air canister, air filter and fish tissue
- performed 86 bioassay toxicity tests of point source effluents for permit compliance and river assessment work
- analyzed 336 fish tissue samples for the Fish Consumption Advisory program
- conducted laboratory approvals, audits of laboratories and review of documents for Voluntary Action Program lab certification program
- conducted laboratory surveys and review of applications and lab plans for the drinking water laboratory certification program
- responded to over 6,600 requests for technical assistance requests (over half from individuals outside Ohio EPA).

C5. Cooperation among State Agencies and Departments

Ohio Water Resources Council

On July 1, 2001, Governor Taft signed legislation to permanently establish the Ohio Water Resources Council (OWRC) in state law. The OWRC is a forum for policy development, collaboration and coordination for one of Ohio's most important natural resources—water. The OWRC membership is comprised of an Executive Assistant to the Governor and the directors of the following nine state agencies and commissions:

- Ohio EPA
- Ohio Department of Natural Resources
- Ohio Department of Health
- Ohio Department of Transportation
- Ohio Department of Agriculture
- Ohio Department of Development
- Ohio Water Development Authority
- Public Utilities Commission of Ohio
- Ohio Public Works Commission

In 2006, the OWRC adopted a strategic plan that identifies key actions for the protection and management of Ohio's waters through 2010. The Strategic Plan encompasses 10-year visions on seven different topics for managing the water resources of Ohio including water quality and watershed management. Members of the OWRC meet monthly to work on initiatives and projects that will move us forward over the next four years. The OWRC continues to work with a multi-stakeholder group to advise the OWRC. Additional information is available on line at: <http://www.dnr.state.oh.us/owrc/>.

Ohio Lake Erie Commission

The Ohio Lake Erie Commission is comprised of the directors of the Ohio EPA and the Ohio departments of natural resources, transportation, development, health and agriculture. The commission was established to preserve Lake Erie's natural resources, water quality and ecosystem. It also promotes economic development in the region. The commission oversees the Ohio Lake Erie Protection Fund (LEPF). During the last 11 years, the commission has raised nearly \$7 million through the sale of Lake Erie license plates. This money is used to fund LEPF grants that focus on improving the quality of Lake Erie and to furthering the goals laid out in the Lake Erie Protection & Restoration Plan. Additional information is available on line at <http://www.epa.state.oh.us/oleo/>.

C6. Economic Costs and Benefits of Pollution Controls

Several sources that provide funding for water quality improvement projects exist. An Ohio EPA publication titled "State and Federal Funding for Drinking Water and Wastewater Systems" details some of the State of Ohio funding sources. A few of the entities with funding available in Ohio include: Ohio EPA, the Ohio Public Works Commission, the Ohio Water Development Authority, and the Rural Development Administration. Additional funds from the federal

government, as well as the investment in water pollution control measures made by municipal and county governments and the private sector, are the reason for dramatic improvements in water quality in Ohio since the inception of the Clean Water Act in 1972.

A summary of funding sources, amounts and trends is presented here. The summary is not exhaustive. Efforts have been made to include funding sources not traditionally associated strictly with water quality improvement but that nevertheless have the potential to positively impact Ohio's water resources.

It is beyond the means of this report to place a dollar value on the environmental improvements gained to date. However, Ohio EPA has documented the recovery of numerous major river segments including the Cuyahoga River, Licking River, Paint Creek and Scioto River. The latter two are featured success stories on the Division's web page (<http://www.epa.state.oh.us/dsw/bioassess/AquaticLifeGoal.html>).

Clean Ohio Fund

Although not tied directly to measures of water resource improvement, a major Ohio bond fund provides funds for projects that should positively impact water quality in the state. The Clean Ohio Fund, created in November 2000, provides \$400 million over four years for "Brownfield" environmental cleanup projects and "Greenfield" open space and conservation preservation projects. The Fund consists of four competitive funding programs, as described below.

Clean Ohio Program	Purpose	Administered by	Funding/year
Clean Ohio Green Space Conservation Program	funds preservation of open spaces, sensitive ecological areas, and stream corridors	Ohio Public Works Commission	\$37,500,000
Clean Ohio Agricultural Easement Purchase Program	supports the permanent preservation of Ohio's most valuable farmland through the purchase of development rights	Department of Agriculture	\$6,250,000
The Clean Ohio Trails Fund	improve outdoor recreational opportunities by funding trails for outdoor pursuits of all kinds	Ohio Department of Natural Resources	\$6,250,000
The Clean Ohio Revitalization Fund	cleanup of polluted properties so that they can be restored to productive uses	Ohio Department of Development and the Ohio EPA	\$50,000,000

Continuation of the Clean Ohio Fund is supported by the Governor of Ohio (see <http://www.governor.ohio.gov/Default.aspx?tabid=835>) and may be expanded in the future.

Ohio Water Development Authority

The Ohio Water Development Authority (OWDA) offers financial assistance for a number of project types, either alone or in conjunction with a state agency (including Ohio EPA). In addition to solid waste, brownfields, and emergency programs, OWDA oversees the Fresh Water Fund. The Fresh Water Fund is a market rate program that mirrors the below-market financing available through the Water Supply Revolving Loan Account Fund and the Ohio Water Pollution Control Loan Fund (see below). The OWDA 2006 annual report provides an overall

summary of loan expenditures for all State of Ohio water and wastewater programs in 2006 (OWDA, 2007).

Project Type	2006		2005		% of 2005
	Number	Amount (mil \$)	Number	Amount (mil \$)	
Planning					
Water	19	3.8	22	6.3	59
Wastewater	52	43.5	33	12.7	343
Subtotal	71	47.3	55	19.0	249
Construction					
Brownfield	1	5.0			
Solid Waste	1	0.1			
Water	66	134.7	49	128.6	105
Wastewater	96	413.0	97	468.3	88
Subtotal	164	552.8	146	596.9	93
Total	235	600.1	201	616.0	97

Water Supply Revolving Loan Account Fund

The Water Supply Revolving Loan Account Fund provides below-market rate loans to eligible drinking water systems to finance the costs of infrastructure to achieve or maintain compliance with Safe Drinking Water Act requirements. Projects include the development and/or acquisition of potable water sources, construction and expansion of water treatment facilities, and the installation or improvement of water distribution systems. Applications are made to the Ohio EPA Division of Environmental and Financial Assistance.

Water Pollution Control Loan Fund

Municipal wastewater treatment improvements – sewage treatment facilities, interceptor sewers, sewage collection systems and storm sewer separation projects – and non-point pollution control projects are eligible for financing under the Ohio Water Pollution Control Loan Fund (WPCLF). This state revolving fund, jointly administered by the Ohio EPA and OWDA, was established in 1989 to replace the Construction Grants Program. Construction loans from the WPCLF are available at a number of interest rates: a standard rate which is below market rates, a small community interest rate which is below the standard interest rate, and 1 percent and 0 percent interest rate loans for hardship communities. Planning and design loans are available at a short-term interest rate. Applications for WPCLF loans are made to the Ohio EPA Division of Environmental and Financial Assistance. Eligible activities include:

- improvements to wastewater treatment facilities
- improvement or replacement of on-lot wastewater treatment systems
- brownfield/contaminated site remediation
- agricultural runoff control and best management practices
- urban storm water runoff
- septage receiving facilities
- landfill closure
- septic system improvement
- development of best management practices
- forestry best management practices.

Over the past eighteen years, the WPCLF has loaned out over 3.98 billion dollars. Of that, 4.7%, or 188.4 million dollars, was used to address nonpoint source (NPS) issues including agricultural runoff, landfill closures, Brownfields remediation, development of best management practices, and water resource habitat protection and restoration. The other 95.3%, or about 3.7 billion dollars, addressed municipal point source (PS) related problems such as wastewater treatment plant improvements, control of combined sewer overflows, new sewers for unsewered areas, storm water best management practices, and sewer system rehabilitation.

From July 1, 1995, through June 30, 2005, there were 1,939 WPCLF loans made. The majority (1,346 loans or 69%) were for nonpoint source issues. The other 31%, or 593 loans, were for municipal point source related problems. Municipal point source loans were only 31% of the total number of loans but accounted for 94.5% of the money loaned. Thus, point source loans were typically bigger loans for bigger projects.

Total yearly WPCLF loan amounts tended to fluctuate over time (see Figure C-2). However, in the last two years the total amount of loans made has been fairly constant, with 280,932,819 obligated in SFY 2006 and \$280,219,953 in SFY 2007. The lowest year in the last ten years was SFY 1999, in which \$137,901,688 was obligated and the highest year was SFY 2006, in which \$592,432,563 was obligated. Demand for WPCLF financing is expected to remain high in the future as communities implement their long-term control plans for capturing and treating wet weather combined storm water and wastewater. However, to balance the demand for WPCLF loans with the capacity of the Fund to provide sufficient funding for loans into the future, beginning with the 2007 program year, funding will be managed to limit total obligations to amounts that maintain the long-term capacity of the WPCLF to make loans. In the 2007 program year (calendar year 2007), direct loan funding is being limited to \$250 million.

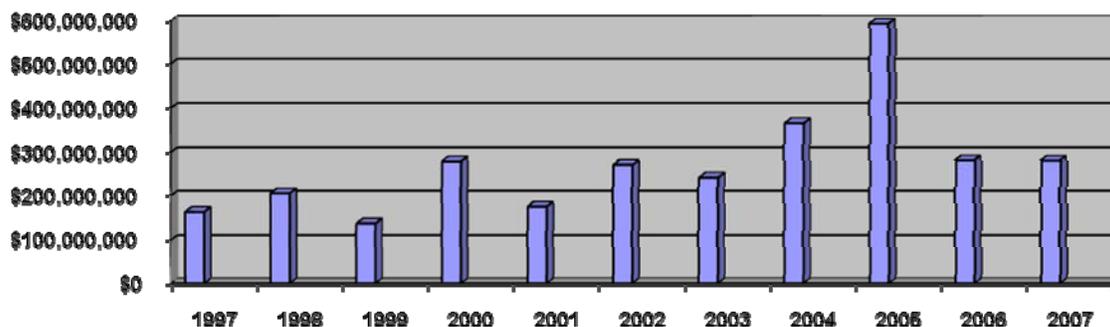


Figure C-2. Water Pollution Control Fund 10-year trend.

Nonpoint source loans between SFY 1997 and SFY 2000 tended to stay relatively constant, around or below \$10 million per year. However, from SFY 2000 onward, funds obligated for nonpoint source projects increased significantly. This was due to both an increase in activity in the agricultural linked deposit program, especially in the Maumee River basin, along with the advent of the Water Resource Restoration Sponsor Program (WRRSP) in SFY 2000.

Although the WPCLF has seen a significant increase in the funds obligated for nonpoint source projects, the main driving force behind the significant increase in WPCLF financing seen in the last several years are the loans made for municipal wastewater treatment projects. These accounted for over 94.5% of the funds obligated in the last 10 years (SFY 1997 - SFY 2007).

The lowest year for funds obligated for municipal wastewater treatment projects was SFY 1999, when \$133,837,236 in loans were provided. The largest year was SFY 2005, when \$566,247,005 was obligated for municipal wastewater treatment projects.

Section 319 Grants Program

Ohio EPA receives federal Section 319(h) funding to implement a statewide nonpoint source program, including offering grants to address nonpoint sources of pollution. Annual funding for local grant awards typically ranges between \$3 and \$3.5 million. The majority of grants are awarded for stream restoration projects such as lowhead dam removal, natural stream channel reconstruction, or other projects designed to restore impaired waters. In recent years, about 40% of the grants have been awarded to local nonprofit organizations such as watershed groups and about 20% to local governments. Projects that are most likely to eliminate impairments and/or restore impaired streams are most likely to be funded. Other eligible activities include agricultural best management practices that results in demonstration projects and/or are not typically funded under Farm Bill programs. Nearly all successful grant applications are from watersheds that have either completed an endorsed local watershed action plan or in watersheds where TMDL studies have been completed.

Federal Farm Bill Funding in Ohio

Among funding sources from the federal government, those connected to the 2002 “Farm Bill” legislation are notable. Administered by the U.S. Department of Agriculture, several programs provide cost share, technical assistance, and economic incentives to implement nonpoint source pollution management practices. For the federal fiscal year ending September 30, 2007, nearly \$60 million were contracted for practices in Ohio.

The Environmental Quality Incentives Program (EQIP) is the most widely used and well funded program coming out of the Farm Bills. EQIP is designed to improve management practices and facilities on working farms to achieve environmental quality goals, of which protecting water resources is a high priority. Several specific practices are eligible for funding through EQIP that cover broad categories such as nutrient and pesticide management and storage, manure management and storage, livestock fencing, conservation tillage, cover cropping, conservation crop rotation, and drainage water management among others. Funding can include cost-share dollars and/or incentive payments. In 2006, \$12.5 million were allocated across Ohio to 1,379 producers.

The Conservation Security Program (CSP) is available to producers that have a history of utilizing best management practices. The intent of this program is to promote continued use and enhance the use of conservation practices on those lands. Incentives are paid on a three-tier system, with the highest tier requiring that BMPs addressing all potential sources of pollution be employed across the entire farm. Ohio watersheds designated for the CSP program include the Auglaize and St. Joseph in 2004, the upper Maumee, Raisin, Huron, Vermilion, Grand, Little Muskingum, and Hocking in 2005, the upper Great Miami and Shenango in 2006, and the Sandusky in 2007. Since 2004, more than \$38.7 million were distributed through more than a thousand CSP contracts in these watersheds.

Set-aside-type programs such as the Conservation Reserve Program (CRP), the Grassland Reserve Program (GRP), and the Wetlands Reserve Program (WRP) are designed to temporarily or permanently take farmed land out of production to improve or protect threatened

natural resources. Land targeted through these programs is environmentally sensitive and/or can have a particularly deleterious impact on natural resources when farmed. Examples include highly erodible land, land near waterways, land that was formerly wetland, and lands that can serve as habitat critical to declining wildlife populations.

The Conservation Reserve Enhancement Program (CREP) is a Federal-State conservation partnership program that targets significant environmental effects related to agriculture. A voluntary program, CREP uses financial incentives to encourage farmers and ranchers to enroll in contracts of 10 to 15 years in duration to remove land from agricultural production. Ohio is one of two states in the nation to have three CREPs:

CREP Project	Area Addressed	Total Funding	Acreage Goal
Lake Erie	Maumee River, Portage River, Sandusky River, Huron River, Vermilion River, Black River, Lake Erie direct drainage	\$201 million	67,000 acres
Upper Big Walnut Creek	upstream of Hoover Reservoir	\$13 million	3,500 acres
Scioto River	Scioto River watershed	\$207 million	70,000 acres

Funding through the Wildlife Habitat Incentives Program (WHIP) can be applied towards both farm and non-farm lands. This program provides cost share dollars only and is intended to enhance habitats for both aquatic and terrestrial wildlife populations.