Michigan Statewide Stormwater Permitting

Statewide Watershed-Based MS4 Stormwater General Permit

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Other Stakeholders:
Alliance of Rouge Communities
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Pollutants of Concern in Watersheds:
Various pollutants of concern in watersheds throughout Michigan

Pollutants Addressed in Permit:
Pollutants associated with municipal separate storm sewer discharges

Permit Type: Municipal separate storm sewer system general permit

Permit Issued: December 5, 2002
Effective Date: April 1, 2003

Permit Information:
www.deq.state.mi.us/documents/deq-wd-stormwater-genpermitfinal.doc

Overview

For approximately 20 years before implementing a watershed-based permitting approach in the Rouge River watershed, the Michigan Department of Environmental Quality (MDEQ) had been seeking ways to bring communities together under either a voluntary or regulatory approach to achieve water quality goals. Using a watershed-based permitting approach in the Rouge River as a test case, MDEQ learned that a watershed-based regulatory program could be achieved if it were offered as an alternative to some other regulatory mechanism. The voluntary, watershed-based permit developed in the Rouge River was reissued as a statewide, watershed-based National Pollutant Discharge Elimination System (NPDES) general permit for stormwater Phase II in 2002 and was renamed the Watershed-based Permit.

The goal of the statewide permit is to provide a watershed-based approach for implementing and coordinating stormwater Phase II compliance efforts. Municipal Separate Storm Sewer Systems (MS4s) regulated under Phase II may choose to participate in the watershed approach under the general Watershed-based Permit, or they may opt to seek coverage under MDEQ's more traditional MS4 stormwater general permit, called the Jurisdictional Permit.

This case study focuses on development of the Rouge River watershed-based stormwater permit and its adaptation for use as a statewide permit. The discussion includes the process for adapting requirements to address watershed-specific needs.

Watershed: Michigan, Statewide and Rouge River

Key Water Quality Concerns: Urban stormwater, low dissolved oxygen, settleable solids, and toxic pollutants

Stakeholder Involvement Techniques:

- Statewide permit developed from watershed-based permit for stormwater for the Rouge River
- Watershed Management Plan, including discharge commitments cooperatively developed by MS4s
- Public encouraged to reduce stormwater pollutant discharges through development and implementation of plan

Case Study Issues of Interest

Type of Point Sources	POTW Discharges	
	Industrial Process/Nonprocess Wastewater Discharges	
	Concentrated Animal Feeding Operations	
	Municipal Separate Storm Sewer System Discharges	✔
	Construction Site Stormwater Discharges	
	Industrial Facility Stormwater Discharges	
	Combined Sewer Overflows	
Highlighted Approach(es)	Statewide Watershed Approach	✔
	Implementation of Water Quality Standards	
	Implementation of Total Maximum Daily Loads or Other Watershed Pollutant Reduction Goals	
	Permit Coordination/Synchronization	✔
	Integrated Municipal Requirements	
	Point Source – Point Source Water Quality Trading	
	Point Source – Nonpoint Source Water Quality Trading	
	Discharger Association	✔
	Coordinated Watershed Monitoring	

Permitting Background

In 1997 MDEQ issued a voluntary, watershed-based NPDES general stormwater permit for communities in the Rouge River watershed. The Rouge River communities supported this watershed-based permitting approach as an alternative to managing stormwater throughout the watershed under an independent Stormwater Authority, which was the approach being considered by a federal district court overseeing clean-up of the Rouge River (*United States, et al. v. City of Detroit, et al.*). The communities agreed voluntarily to participate in the watershed-based permitting approach after the U.S. Environmental Protection Agency (EPA) and the Environmental Council of States (ECOS) endorsed the approach for use under the Phase II MS4 program that was being developed as part of the NPDES program. EPA and MDEQ agreed that the voluntary permit would not need to have new requirements added when reissued under Phase II. Forty-five Rouge River communities applied for the voluntary permit. Five additional communities outside the Rouge River watershed that were not subject to the federal district court's recommendation also requested coverage under the voluntary permit because they recognized that the watershed-based permit was a good mechanism for stimulating watershed-planning efforts. MDEQ reissued the voluntary, watershed-based permit used in the Rouge River in 2002 as a statewide, watershed-based NPDES general permit for stormwater Phase II and renamed it the Watershed-based Permit.

Permit Strategy

The Rouge River basin communities and MDEQ developed the voluntary watershed-based stormwater permit for the Rouge River watershed, and EPA reviewed it. MDEQ conducted multiple workshops in the watershed to educate the communities on the permit and compliance options. MDEQ also worked with existing advisory groups to conduct community outreach. One advisory group had been formed for each of seven subwatersheds in the watershed to address combined sewer overflows (CSOs) and other pollution sources identified in the Rouge Remedial Action Plan, a long-term cleanup plan for the river, first published in 1989. Each advisory group is made up of community members, county agencies, watershed councils, and other interested stakeholders involved with water related issues in that area. A watershed-wide steering committee was formed to address issues under the voluntary permit that cross subwatershed boundaries and coordinate the efforts of the seven subwatershed groups. This steering committee eventually evolved into the Rouge Assembly and, subsequently, the Alliance of Rouge Communities (ARC).

After several years of implementation in the Rouge River watershed, MDEQ adopted the voluntary permit for use as a statewide, watershed-based, Phase II MS4 stormwater permit. MDEQ made limited changes to the Rouge River permit to adapt it for statewide use because the voluntary permittees under the original Rouge River voluntary permit had been promised that no additional requirements would be added to the permit under the Phase II program. Changes to the Rouge River permit primarily consisted of adding language to clarify MDEQ's expectations for how some of the requirements would be implemented. For example, MDEQ added suggestions for implementing adequate post-construction stormwater controls and expanded the descriptions of pollution prevention and good housekeeping. The voluntary permit had been offered only to communities willing to develop public education plans (PEP) and illicit discharge elimination plans (IDEP) up front, with MDEQ approval needed for those plans before the communities could apply for permit coverage. Under Phase II, MDEQ would not have had enough staff to review the more than 600 plans it would receive before authorizing discharges under the Watershed-based Permit, so a schedule for developing and submitting PEPs and IDEPs was also included in the Watershed-based Permit.

The Watershed-based Permit is available to MS4s regulated under the stormwater Phase II regulations. Coverage under the Watershed-based Permit is voluntary; MS4s may choose to be covered under the Jurisdictional Permit. Communities that opt for coverage under the Watershed-based Permit are required to implement stormwater pollution controls throughout the watershed, both inside and outside urbanized areas.

All permit conditions are enforced through the NPDES regulations. A city, village, or township permittee has the option of covering one or more nested systems (usually school districts) under its permit. These permittees usually develop a contractual agreement with the nested system(s). The contract describes which parties are responsible for implementing various activities under the PEP, IDEP, and Storm Water Pollution Prevention Initiative (SWPPI), but the nested system is liable only for implementing these activities to the extent described under the contract. A nested system does not have any liability under the permit. The permittee is ultimately responsible for implementing all the terms of the permit; MDEQ would not take enforcement action against a nested system for permit violations. Where permittees do not choose to develop cooperative agreements under the general permit with their nested systems, the nested systems must apply for separate coverage under a stormwater permit. The same approach is taken with nested systems under the Jurisdictional Permit. Some communities have opted for the Watershed-based Permit, while the nested systems within their boundaries have chosen the Jurisdictional Permit.

Although there is no formal connection between the Watershed-based Permit and non-regulatory programs in Michigan, MDEQ's NPDES staff has benefited from working with agency nonpoint source (NPS) staff in implementing the watershed-based permitting approach. Because NPS pollutant controls and strategies are so similar to the controls and strategies used to manage stormwater pollutants,

MDEQ's NPS staff members often assist with reviews of the Watershed Management Plans (WMPs) submitted under the permit. MDEQ's permits staff benefit from the technical expertise and input received from NPS staff.

Permit Highlights

Under the Watershed-based Permit, MS4s within a watershed cooperate to develop a WMP that includes short-term objectives and long-term goals for the watershed. The cooperating MS4s in a watershed are referred to as the stakeholder communities. The WMP includes commitments from each stakeholder community to carry out the specific activities needed to achieve the objectives and goals in the WMP. Each permitted MS4 is then individually responsible for carrying out those activities in accordance with a SWPPI that it develops pursuant to its NPDES permit requirements and commitments identified in the WMP.

When a community applies for coverage under the permit, MDEQ reviews the application and then issues a certificate of coverage (COC) to the permittee. The COC is used to specify any additional permit requirements specific to that permittee. In granting coverage to permittees in specific watersheds, MDEQ has used the COC to make permit adaptations to accommodate watershed-specific needs. Examples of these adaptations are described below.

- MDEQ provided flexible implementation schedules to allow watersheds that discharge to Lake St. Clair to take advantage of funding opportunities available through the U.S. Army Corps of Engineers (USACE). USACE conducts dredging operations to maintain shipping channels in the lake and is interested in water quality and quantity issues. Because of this interest, USACE offered funding to help communities in these watersheds develop WMPs under the permit; however, USACE was unable to guarantee that the funding would be available in time for the watersheds to meet their permit deadlines. MDEQ allowed some of these communities extra time to develop their plans because they recognized that the communities would be able to develop more effective WMPs using USACE funding than they might otherwise be able to develop if they were required to meet the earlier deadline without the USACE's support.

- MDEQ granted permit coverage to several unregulated communities outside the urbanized area around Flint. These communities requested coverage on a voluntary basis because they recognized that the permit would allow them to take advantage of the opportunity to address illicit discharges and other stormwater controls at a lower cost by coordinating efforts with other communities under the Watershed-based Permit.

- MDEQ revoked an individual site-specific stormwater permit for Grand Rapids, a medium-sized Phase I community, and reissued coverage under the Phase II Watershed-based Permit. Grand Rapids requested Watershed-based Permit coverage so that it could participate in coordinated watershed planning efforts with the Phase II communities in the watershed. MDEQ used the COC for the Watershed-based Permit to include EPA's mandatory reporting requirements for Phase I communities into Grand Rapids' Phase II permit. Even though the Phase II Watershed-based Permit requires Grand Rapids to do more than would be required under the Phase I permit alone, the community realized a cost savings by participating in the watershed approach.

The Watershed-based Permit requires coordination among all permittees within a watershed to develop a WMP, but each community separately applies for coverage under the general permit. MDEQ reviews WMPs to ensure that they will support development of approvable SWPPIs, but it does not approve the WMPs themselves. Each permittee is responsible for carrying out its WMP commitments under its SWPPI. MDEQ reviews and approves each permittee's SWPPI. A permittee's SWPPI constitutes an enforceable provision of the permit.

Within each watershed, a leader (a person, group, or agency) is appointed to coordinate the permitted communities, as required by the permit. This role is often filled by a consultant. Consultants have provided some key benefits to the watershed-based permit approach because they are motivated to promote the Watershed-based Permit (D. Drullinger, personal communication). As a result of consultants encouraging communities' early participation in the watershed-based permit approach, when the reissued permit took effect in 2003, at least 98 percent of the applicants had already submitted applications for coverage. In addition, the consultants provide consistency and group cohesiveness among watershed permittees and act as information multipliers through which the state can reach a larger number of permittees by communicating with a smaller group of consultants.

Stakeholder participation and cooperation among permittees within a watershed are key features of the approach. For example, in the Rouge River watershed, where the approach has been implemented for nearly 10 years, watershed-wide coordination under the watershed approach fostered a culture of cooperation leading to formation of a voluntary, watershed-wide institutional arrangement known as the Rouge River Watershed Local Management Assembly (Rouge Assembly). The Rouge Assembly, a voluntary organization of the communities and counties in the watershed, formed in 2003 to maintain the Rouge River watershed restoration efforts. Authorized by 2004 amendments to Part 312 (Watershed Alliances) of the Michigan Natural Resources and Environmental Protection Act, the Rouge Assembly became

the ARC in January 2006—the first Michigan Watershed Alliance formed under the 2004 amendments.

With the legal status granted to the organization under the new legislation, the ARC has more power to obtain and manage grant funding. The ARC Technical Committee, in addition to design and review of the annual ARC water quality monitoring program, develops materials to guide members in meeting stormwater permit requirements, develops and implements technical training programs, and serves as liaison with MDEQ on stormwater permitting issues including the development of subwatershed management plans. The ARC Public Information and Education Committee develops public information materials and sponsors workshops and other public involvement activities to encourage stewardship of the river, coordinates activities with nonprofit organizations and other public and private organizations interested in building public stewardship of the river, and conducts informational meetings for public officials to explain the role of the ARC and the benefits of governmental cooperation in addressing water management issues.

Permit Components

Effluent Limits

The Watershed-based Permit requires MS4s to submit several types of plans and related documents. These constitute technology-based requirements under the MS4 program. MS4s in watersheds where water quality-based effluent limits are needed must apply for individual permits. The plans, submission deadlines, and responsible entities under the Watershed-based Permit are summarized in the table on the next page.

The IDEP and PEP are similar to requirements of the Jurisdictional Permit. The WMP and associated public participation process and the SWPPI are specific to the Watershed-based Permit and include the remaining minimum measures required under the Phase II regulations.

The WMP addresses the entire watershed. Permittees within the watershed agree on the controls needed, and then each community commits to implementing the controls that are applicable in that community. The permit includes methods for addressing significant components of the WMP that do not have complete agreement of the participants. The permit requires that these components be detailed in an appendix to the WMP. The appendix must describe each WMP component, identify the participants who disagreed with the component, the reasons for the disagreement, and suggested alternatives. In addition, the permit requires that the WMP include revision procedures.

The permit also allows permittees to defer the WMP requirement for a portion of the permittee's jurisdiction (but not for the entire urbanized area). The permit does not specify criteria for determining how portions of an urbanized area can be selected for deferral of the WMP requirement, but a draft guidance document developed by the Wayne County Department of Environment, which oversees watershed management in the Rouge River basin, indicates that:

> The Department may defer development of the watershed management plan if broad participation in development of the plan cannot be expected. For example, a permittee may be situated on 2 watersheds. One watershed may have a large number of permittees under this permit and may have watershed work underway. The other watershed may have no watershed management activity currently underway or likely in the near future. The permittee's participation in a watershed management plan for the second watershed may be deferred until support for watershed activity is apparent.

After the WMP is completed, each permittee in the watershed develops a SWPPI. The SWPPI generally is due 6 months after the WMP. The SWPPI is community-specific and provides details on how and when the community will implement the applicable elements of the WMP. If a permittee had any specific disagreements to significant components of the WMP, that permittee's SWPPI must account for those disagreements. If the WMP requirement has been deferred for a portion of the permittee's urbanized area, the initial SWPPI must be developed without consideration of the WMP for that portion. The permit provides two options for SWPPI development for urbanized areas with deferred WMPs:

- Option 1: The permittee may request to extend the coverage of an existing SWPPI throughout the urbanized areas where a WMP has been deferred. The permittee must perform an assessment to identify differences between the areas with an existing SWPPI and those where a WMP is deferred and include with its request additional actions to address the deficiencies of the SWPPI in the deferred area, if necessary.
- Option 2: The permittee may submit additional information for urbanized areas where the WMP has been deferred to comply with minimum measures like those in the Jurisdictional Permit. These include permit requirements for public involvement and participation, post-construction stormwater management for new development and redevelopment projects, and additional BMPs and measurable goals if requested by MDEQ.

This process of developing the WMP first rather than merging independently-developed SWPPIs into an overall WMP provides consistency across the watershed. The cooperating permittees set the watershed-wide priorities and then develop community-specific plans that are consistent with those agreed-upon priorities. Requiring regular WMP revisions and

Plan	Description	Responsibility and enforceability	Schedule*
Illicit Discharge Elimination Plan (IDEP)	Required program elements: • Program to find and eliminate illicit discharges and connections • Program to minimize infiltration of seepage from sanitary sewers and septic systems • Effectiveness evaluation methods that include stormwater outfall inspections • Map of each stormwater point source and receiving water	• Developed by permittee • Enforceable	• Submit within one year of permit coverage • Begin implementing plan once approved by permitting authority
Public Education Plan (PEP)	A plan to promote, publicize, and facilitate watershed education to encourage the public to reduce stormwater pollutant discharges. The plan must encourage pollution prevention and describe a method for effectiveness evaluation.	• Developed by permittee • Enforceable	• Submit within one year of permit coverage • Implement upon approval of plan by permitting authority
Public Participation Process	A description of the process to facilitate involvement of the watershed jurisdictions and the public in the development of the WMP.	• All permittees in a watershed must submit one coordinated public participation process • Enforceable	• Submit by date specified in certificate of coverage, typically within 6 months of permit coverage
Watershed Management Plan (WMP)	A plan to identify and execute the actions needed to resolve water quality and quantity concerns by fostering cooperation among stakeholder communities. The plan must contain • Watershed ecosystem assessment • Short-term measurable objectives • Long-term goals (must include protection of designated uses and TMDL compliance) • Actions needed to achieve short-term objectives and long-term goals • Assessment of costs and benefits of the actions • Commitments from specific permittees or others to implement actions by specific dates (short-term and long-term) • Methods for evaluating progress. These may include chemical or biological indicators, flow measurements, erosion indices, and public surveys.	• Each permittee participates in development of a watershed-wide plan • MDEQ reviews, but does not approve plans. Not enforceable.	• Submit by date specified in certificate of coverage* • Periodic revisions required
Storm Water Pollution Prevention Initiative (SWPPI)	Must be consistent with WMP, include actions to be implemented during permit term, and identify effectiveness evaluation methods. The SWPPI must include • Actions required of the permittee in the WMP • Pollution prevention good housekeeping activities, including a training and inspection program for staff and contractors • A comprehensive stormwater management program for post-construction controls for areas of new development and significant redevelopment • Methods of assessing progress	• Developed by permittee • Enforceable	• Submit by date specified in certificate of coverage* • Implement upon approval of SWPPI by permitting authority • Periodic revisions required

* The WMP requirement may be deferred until a later time for a portion of a permittee's jurisdiction. The permit includes options for deferring or developing SWPPIs for portions of an urbanized area for which the WMP requirement has been deferred.

including a means for documenting significant disagreements streamlines the watershed-wide process; permittees are willing to spend less time trying to achieve complete consensus on the WMP priorities because they know that they will have opportunities to revise the plan.

Monitoring and Reporting Requirements

The general permit does not include monitoring requirements that apply to all permittees. Each permittee is responsible for conducting the monitoring and assessment activities identified in its SWPPI. Monitoring activities focus on assessing the control strategies identified in the SWPPI and may include water quality monitoring in addition to other types of effectiveness evaluation monitoring. Any coordination of monitoring efforts among watershed permittees would be addressed in the WMP, with individual permittees' responsibilities identified in their SWPPIs.

All permittees are required to submit Annual Progress Reports to MDEQ on the implementation status of the permit and the progress of pollution prevention. Progress reports must include all the decisions, actions, and results associated with the activities performed according to the permit requirements (as identified in the PEP, IDEP, and SWPPI) during the year. Specifically, the annual report must include the following:

- Actions to eliminate illicit discharges and evaluate the effectiveness of the IDEP in addition to any changes made to the IDEP during the reporting year
- A summary of the status of the program to minimize seepage from sanitary sewers and septic systems into the stormwater system
- Schedules for eliminating known illicit connections
- Documentation of activities conducted in accordance with the PEP and an evaluation of the effectiveness of the public education effort as well as any changes made to the PEP during the reporting year
- Identification of newly discovered stormwater point sources including the location of the discharge, receiving water, and an updated system map
- Compliance status of SWPPI actions and implementation schedules including WMP commitments, pollution prevention/good housekeeping provisions, and post-construction BMPs
- Status of any requirements for urbanized areas with a deferred WMP, if applicable, watershed planning decisions for such areas, and an updated watershed characterization for deferred areas, if necessary.
- An evaluation of the effectiveness of the SWPPI actions as well as any changes made to the SWPPI during the reporting year
- Any other actions taken to reduce pollutant discharge
- An updated list of nested jurisdictions that should be covered separately under a stormwater general permit (i.e., nested jurisdictions that do not have coverage under the permit of the community submitting the annual report)
- Special reporting requirements for large and medium MS4s covered by the permit (as described above), pursuant to the requirements at Title 40 of the *Code of Federal Regulations* [CFR] 122.42(c)(2)–(7)

Permit Effectiveness

Implementation Status

Eighty percent of the Phase II permittees in Michigan have opted for coverage under the Watershed-based Permit over the Jurisdictional Permit. Approximately two-thirds of those that have opted for the Jurisdictional Permit (about 40 permittees) are in an area where two different watershed plans were already under development when the permit was issued. These communities decided to apply for the Jurisdictional Permit to avoid confusing the watershed planning processes that were already underway.

Most of the remaining jurisdictional permittees are small systems, such as school districts and rural townships, on the outer fringes of a Phase II urbanized area. For rural townships, participating in the Watershed-based Permit would have required them to address a much larger portion of the MS4 than they are required to address under the Jurisdictional Permit (i.e., for a community on the outer fringe of an urbanized area, a significantly larger portion of the MS4 falls within the watershed boundary than falls within the urbanized area boundary; as described above, under the Watershed-based Permit, all outfalls within the watershed boundary must be addressed). Many school districts have few properties or came into the permitting process late. They opted for the Jurisdictional Permit because it did not require them to catch up to the other stakeholder communities or to spend time in watershed meetings when their jurisdiction represented a very small percentage of the total watershed.

The exclusion of smaller systems has not significantly impacted the larger watershed planning efforts in these watersheds. The permit provides that "Coverage [under the Watershed-based Permit] will be granted only if the Department determines there is a sufficient number of participating watershed partners to ensure implementation of an effective WMP." Otherwise, the applicant(s) would be required to seek coverage under the Jurisdictional Permit. Early in the

permit development process, MDEQ struggled to establish criteria for determining whether a watershed had a *sufficient number* of participating communities to grant coverage for a watershed. As the Watershed-based Permit has been implemented in the field, problems such as these have not arisen. In every watershed that had a significant urbanized area, nearly all the urbanized communities applied for coverage under the Watershed-based Permit.

Measures of Success and Environmental Benefits

Measures of success under the Watershed-based Permit are watershed- and permit-specific. Permittees define their measures of success in the context of the goals and performance measures they submit in their plans. MDEQ expects evaluation measures identified in plans to demonstrate a water quality benefit or a change in social behavior, or be a direct measure of pollutant reduction. Most of the watersheds covered under the permit submitted WMPs and SWPPIs during the fall of 2005 and spring of 2006. Therefore, it is too early to report on progress for many of the permittees.

The Rouge River watershed has the longest history of implementation and the best examples of permit success and effectiveness can be seen there. The Rouge River permittees are measuring the effectiveness of the Watershed-based Permit to reduce pollution and improve water quality or ecosystem health in a number of ways, based on individual permittees' activities and effectiveness measures. A December 2003 evaluation of permit implementation in the Rouge River watershed details the status of a number of these effectiveness measures (Cave 2003). Selected examples are listed below.

- Communities and agencies have committed to implementing more than 1,100 activities in existing and new programs.
- Two of the three counties in the watershed adopted programs for onsite sewage disposal system inspections. In 2002 the two counties performed more than 1,000 inspections, resulting in the identification and correction of more than 200 failed systems.
- All major pollutant sources in the watershed were covered under NPDES permits before the federal deadline.
- Strong illicit discharge elimination programs are in place. In 2001 Oakland County inspected more than 3,800 stormwater outfalls, and Washtenaw County inspected 118 septic systems.
- Partnerships and community involvement are being strengthened through volunteer monitoring programs, storm drain stenciling projects, community cleanup events, riparian planting projects, and participation in workshops focused on river improvements.

The Rouge River evaluation also lists a number of environmental benefits attributed to implementation of the watershed approach in the Rouge River watershed (Cave 2003). For example,

- Communities commit to activities like stream bank stabilization and habitat restoration, which are not typically included in traditional stormwater permits.
- Dramatic improvements in dissolved oxygen (DO) concentrations in the downstream, channelized portions of the river have been achieved. DO concentrations in these areas now meet state water quality standards over 95 percent of the time—up from about 30 percent of the time in the mid-1990s.
- CSO loads have been cut 90 to 100 percent.
- An MDEQ survey conducted in 2000 showed that the health of biological communities was generally acceptable throughout the watershed
- Water quality improvements and removal of contaminated sediment resulted in removal of a fish consumption advisory for some species of fish in Newburgh Lake. This was the first time in decades that fish caught in the Rouge River system have been safe for consumption.
- Wildlife and fish, including salmon, mink, green frogs, and northern leopard frogs are being observed in greater numbers throughout the Rouge River system, which is almost entirely urbanized.

Lessons Learned

Because the watershed-based permitting approach was tested in the Rouge River watershed before being adopted statewide, the Rouge watershed offers a range of *lessons learned*. MDEQ officials and permittees have also learned important lessons through the challenges encountered in developing and implementing the statewide Watershed-based Permit.

Lessons Learned in the Rouge River Watershed

According to an evaluation of permit implementation in the Rouge River watershed conducted in 2003 (Cave), the most difficult problem in wet-weather and watershed-protection programs lies in developing and implementing the institutional and financial arrangements needed to sustain the program. The Department of Environment for Wayne County, one of the Rouge River watershed stakeholders, recommends that watershed leaders direct early and continued

efforts toward developing workable institutional and financial arrangements. The Rouge River communities learned that success does not necessarily depend on establishing a discrete entity or institution to oversee progress in the watershed. Rather, effective institutional arrangements, which can take the form of interjurisdictional cooperation or combining existing institutional arrangements, are the critical factor in ensuring the success of a watershed-based program.

The 2003 Rouge River evaluation lists a number of additional lessons learned, including the following:

- It is necessary to build accountability for water quality at a local level through sharing of power with regulatory agencies to garner local political support.
- Watershed-based implementation in a large watershed is most effective when the overall watershed is divided into subwatersheds. Subwatersheds are more manageable in terms of setting priorities for addressing water problems and achieving local support.
- Cumulative watershed impacts must be assessed and quantified before subwatershed solutions are developed to effectively address the overall causes of water quality and ecosystem degradation rather than focusing on the symptoms of the problems.
- Broad-based public education and involvement programs are needed to achieve the local support required to ensure successful watershed projects. Effective public education and involvement programs should integrate the watershed approach with a phased approach to implementing pollution controls and should focus on the overall Clean Water Act goals of attaining fishable and swimmable waterways rather than focusing more narrowly on achieving numeric water quality standards.
- Good data systems are necessary to measure and communicate progress to maintain local support and assist in sharing successes and facing new challenges.
- A good data management and information system must be tailored to the needs of the watershed and must able to process large amounts of data to help communities make informed decisions. Local governments should be involved in system development to ensure data or system compatibility to facilitate watershed-based data analysis and decision-making.

Lessons Learned through Statewide Implementation of the Watershed-based Permit

Communities in Multiple Watersheds

During the permit development process, MDEQ faced a challenge in determining how to allow flexibility for communities that span multiple watersheds. For example, portions of Lansing's urbanized area fall within three different watersheds. The Watershed-based Permit requires Lansing to develop a SWPPI that includes activities under three different WMPs. To accomplish this, the permit requires Lansing to participate in meetings and planning processes for all three watersheds. Participation in multiple watershed planning processes can be time-consuming and expensive for a community. MDEQ learned that it is necessary to allow each community that spans multiple watersheds to identify a primary watershed for which the community will be a strong and active participant in watershed decision making. MDEQ allows these communities to consider the other watersheds as secondary watersheds. The community must still participate in the planning processes for the secondary watersheds, but it is not expected to participate in those watersheds at the same level it participates in the primary watershed.

Another major challenge for MDEQ in implementing the Watershed-based Permit is aligning the timing for submittal of the various plans required under the permit for communities that span multiple watersheds. MDEQ uses the COC to identify permit requirements specific to each permittee, including the submittal and revision dates for the Public Participation Process, WMP, and SWPPI. Coordinating these submittal dates between a community that spans multiple watersheds and the other communities in each of those watersheds can be difficult. The community spanning multiple watersheds might prefer that the submittal dates for each watershed be staggered so that the community is able to focus on each watershed individually. Still, each community must submit a single SWPPI, so the submittal date for the SWPPI might need to be delayed to allow it to line up with all the permittee's watersheds. Other communities in the watershed might perceive the later deadlines for SWPPI submittal as being inequitable if those communities are required to submit their plans earlier.

In addressing timing concerns for different communities, MDEQ learned that creativity and flexibility are needed to coordinate timing across jurisdictional and watershed boundaries. Importantly, MDEQ learned that where certain activities need to be delayed to allow communities to comply with permit requirements, permitting authorities should delay those activities that could be done better if allowed more time. This approach results in better administrative and environmental outcomes than delaying activities solely for the sake of coordinating timing when they could be done just as well earlier.

Equity Concerns

In addition to ensuring equity in coordinating plan submittal deadlines at the state level, MDEQ encountered equity issues when establishing each community's level of contribution to the WMP development process. The portion of the total effort allocated to a specific community can be based on a variety of criteria, such as the community's percentage of land area within the watershed, the community's population, or the number of connections owned by the community. A community's required level of effort for the WMP development process can vary depending on the allocation criteria, and the watershed assembly or consultant working in each watershed sometimes had trouble getting communities to agree on an equitable approach. No single approach worked across the state.

Flexibility versus Clear Direction

Another challenge in developing and implementing the Watershed-based Permit is the need to balance flexibility to implement permit requirements with communities' demands for clear direction. MDEQ is still working on addressing this challenge, but it has found that educating communities early in the process is essential to helping them make their own decisions within the flexibility allowed under the permit.

Integrating Watershed Plans

Integrating the Watershed-based Permit with other watershed processes can also present problems. Other watershed activities in Michigan are typically watershed-based planning activities conducted through grants under section 319 of the Clean Water Act. The plan developed under the watershed-based process that was implemented first often serves as the foundation for the other, with the original plan being modified to meet the requirements of the other program. However, some communities that developed watershed plans under section 319 first found that the Watershed-based Permit requirements are not as comprehensive as the plans developed under section 319. The Watershed-based Permit had a negative effect on an overall watershed approach being employed in some communities as these communities viewed the Watershed-based Permit as the baseline requirement and subsequently abandoned what they perceived as *extraneous* existing activities under the 319 plan. To address this challenge, MDEQ recommends that permitting authorities develop watershed-based permits that are consistent with section 319 planning requirements or that include incentives for watersheds to continue implementing section 319 watershed plan elements that are more comprehensive than the watershed planning requirements in the permit.

Resources

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www.deq.state.mi.us/documents/deq-water-stormwater-WayneRougeEval.pdf

Michigan Department of Environmental Quality. National Pollutant Discharge Elimination System Wastewater Discharge General Permit No. MIG619000. Issued on December 5, 2002.
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