

# STORMWATER PHASE II MINIMUM MEASURES EPA/ARC COMPARISON

## 1. PUBLIC EDUCATION AND OUTREACH

### What does EPA Require?

- 1) The operator of a regulated small MS4 needs to: Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local water bodies and the steps that can be taken to reduce storm water pollution; and
- 2) Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

ACTION AREAS	EPA REQUIREMENTS	ARC MEMBER ACTIVITIES
<b>Forming partnerships</b>	Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirements. Operators also are encouraged to seek assistance from nongovernmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.	The ARC and its committees as well as ARC cooperative partners (FOTR, Cranbrook, SOCWA) The PIE Committee includes citizens as members, as do other ARC Committees and Partners for Clean Water
<b>Using educational materials and strategies</b>	<ul style="list-style-type: none"> <li>• Brochures or fact sheets;</li> <li>• Recreational guides;</li> <li>• Alternative information sources such as web sites, bumper stickers, refrigerator magnets, posters for bus and subway stops, and restaurant placemats;</li> <li>• A library of educational materials;</li> <li>• Volunteer citizen educators to staff a public education task force;</li> <li>• Event participation with educational displays at home shows and community festivals;</li> <li>• Educational programs for school-age children;</li> <li>• Storm drain stenciling;</li> <li>• Environmental hotlines;</li> <li>• Economic incentives to citizens and businesses (e.g., rebates to homeowners purchasing mulching lawnmowers or biodegradable lawn products), and</li> <li>• Tributary signage to increase public awareness of local water resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Seven Simple Steps brochures; ARC and communities PSAs and videos; ARC Detention Pond Maintenance Manual; the Value of Trees handout and other fact sheets and brochures.</li> <li>• Recreational Guides: Recreational activities by FOTR such as kayaking on the Main Rouge and canoeing on the Lower Rouge. Maps of green infrastructure sites on the ARC website.</li> <li>• Alternative Information: ARC website, (The Rouge has done magnets, posters and placemats)</li> <li>• Library of Educational materials: ARC website; Rouge Project Website and FOTR website</li> <li>• Volunteer citizen educators: Frog and Toad Survey, Benthic Macroinvertebrate Surveys, Green Infrastructure workshops and Rouge Rescue.</li> <li>• Educational Displays: The communities offer a variety of displays</li> <li>• Educational programs for school age children: UM-D Water Festival, Cranbrook Water Festival, Rouge Education Project, Cranbrook Water on the Go program and Green Schools Program</li> <li>• Storm Drain Stenciling</li> <li>• Environmental Hotline: Offered by some communities, Wayne County Dept. of Environment and Oakland County Water Resources</li> <li>• Economic Incentives: Some have been offered by SOCWA; Rain Barrel sales offer inexpensive rain barrels for purchase by citizens; tree giveaway; Free grow zone design and plants for ARC members, stewardship groups, local schools and universities.</li> <li>• Tributary Signage: All over the Rouge</li> </ul>
<b>Reaching diverse audience</b>	<p>Reaching diverse audience to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children. Examples are:</p> <ul style="list-style-type: none"> <li>• Printing posters and brochures in more than one language</li> <li>• Posting large warning signs (e.g., cautioning against fishing or swimming) near storm sewer outfalls are methods that can be used to reach audiences less likely to read standard materials.</li> <li>• Directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts is also recommended. For example, information could be provided to restaurants on the effects of grease clogging storm drains and to auto garages on the effects of dumping used oil into storm drains.</li> </ul>	Brochures have been developed in Spanish and Arabic by Friends of the Rouge; Signage warning about fishing and swimming; Signage about the value of grow zones and green infrastructure and FOG brochures to restaurants and individuals.

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**2. PUBLIC PARTICIPATION/ INVOLVEMENT**

What does EPA Require?

To satisfy this minimum control measure, the operator of a regulated small MS4 must:

- 1) Comply with applicable State, Tribal, and local public notice requirements, and
- 2) Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Possible implementation approaches, BMPs (i.e., the program actions and activities), and measurable goals are described below.

EPA believes that the public can provide valuable input and assistance to a regulated small MS4's municipal storm water management program and, therefore, suggests that the public be given opportunities to play an active role in both the development and implementation of the program.

EPA identifies the following areas for successful implementation of a public participation and involvement program because an active and involved community is crucial to the success of a storm water management program because it allows for:

- 1) Broader public support since citizens who participate in the development and decision making process are partially responsible for the program and, therefore, may be less likely to raise legal challenges to the program and more likely to take an active role in its implementation;
- 2) Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of citizen volunteers;
- 3) A broader base of expertise and economic benefits since the community can be a valuable, and free, intellectual resource; and
- 4) A conduit to other programs as citizens involved in the storm water program development process provide important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a storm water program on a watershed basis, as encouraged by EPA.

ACTION AREAS	EPA REQUIREMENTS	ARC MEMBER ACTIVITIES
<b>Public meetings/citizen panels</b>	Public meetings/citizen panels allow citizens to discuss various viewpoints and provide input concerning appropriate storm water management policies and BMPs.	The ARC has always encouraged the public to attend ARC meetings and subcommittee meetings. Additionally, the ARC presents a variety of public workshops, as does ARC partners FOTR and SOCWA.
<b>Volunteer water quality monitoring</b>	Volunteer water quality monitoring gives citizens firsthand knowledge of the quality of local water bodies and provides a cost-effective means of collecting water quality data.	Conducted by ARC partner FOTR through Frog and Toad Workshops, volunteer Benthic Macroinvertebrate Sampling and the Rouge Education Project.
<b>Volunteer educators/speakers</b>	Volunteer educators/speakers who can conduct workshops, encourage public participation, and staff special events.	The ARC has used volunteer educators and speakers in its grow zone workshops and other workshops.
<b>Storm drain stenciling</b>	Storm drain stenciling is an important and simple activity that concerned citizens, especially students, can do	ARC members either conduct storm drain stenciling or have converted to more permanent drain markers.
<b>Community clean-ups</b>	Community clean-ups along local waterways, beaches, and around storm drains.	Rouge Rescue; volunteer days sponsored by Wayne County and FOTR.
<b>Citizen watch groups</b>	Citizen watch groups can aid local enforcement authorities in the identification of polluters.	Environmental Hotlines sponsored by Wayne County and Oakland County.
<b>“Adopt A Storm Drain” programs</b>	“Adopt A Storm Drain” programs encourage individuals or groups to keep storm drains free of debris and to monitor what is entering local waterways through storm drains.	“Adopt A Storm Drain” programs have been conducted over the years by a number of different organizations, including FOTR.

**STORMWATER PHASE II MINIMUM MEASURES EPA/ARC COMPARISON**  
**3. ILLICIT DISCHARGE DETECTION AND ELIMINATION**

*What does EPA Require?*

*Recognizing the adverse effects illicit discharges can have on receiving waters, the Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:*

- 1) A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;*
- 2) Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-stormwater discharges into the MS4, and appropriate enforcement procedures and actions;*
- 3) A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4;*
- 4) The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and*
- 5) The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Some program implementation approaches, BMPs and measurable goals.*

ACTION AREAS	EPA REQUIREMENTS	ARC MEMBER ACTIVITIES
<p><b>The Map</b></p>	<p>The storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular water bodies these flows may be affecting. An existing map, such as a topographical map, on which the location of major pipes and outfalls can be clearly presented demonstrates such awareness.</p> <p>EPA recommends collecting all existing information on outfall locations (e.g., review city records, drainage maps, storm drain maps), and then conducting field surveys to verify locations. It probably will be necessary to walk (i.e., wade through small receiving waters or use a boat for larger waters) the streambanks and shorelines for visual observation. More than one trip may be needed to locate all outfalls.</p>	<p>The ARC has gathered outfall locations on a watershed-wide basis as part of the Collaborative Action Plan. In addition, each permittee has submitted outfall location information to the state.</p>
<p><b>Legal Prohibition and Enforcement</b></p>	<p>EPA recognizes that some permittees may have limited authority under State, Tribal or local law to establish and enforce an ordinance or other regulatory mechanism prohibiting illicit discharges. In such a case, the permittee is encouraged to obtain the necessary authority, if possible.</p>	<ul style="list-style-type: none"> <li>• Wayne and Washtenaw county's Time-of-Sale Septic System Ordinances,</li> <li>• Wayne County's illegal dumping ordinance</li> <li>• County Drain Code for discharges to designated county drains</li> <li>• Local Plumbing Codes for discharges to storm sewers</li> </ul>
<p><b>The Plan</b></p>	<p>The plan to detect and address illicit discharges is the central component of this minimum control measure. The plan is dependent upon several factors, including the permittee's available resources, size of staff, and degree and character of its illicit discharges. As guidance only, the four steps of a recommended plan are outlined below:</p> <ul style="list-style-type: none"> <li>• <b>Locate Problem Areas</b> - EPA recommends that priority areas be identified for detailed screening of the system based on the likelihood of illicit connections (e.g., areas with older sanitary sewer lines). Methods that can locate problem areas include: visual screening; water sampling from manholes and outfalls during dry weather; the use of infrared and thermal photography, cross-training field staff to detect illicit discharges, and public complaints.</li> <li>• <b>Find the Source</b> - Once a problem area or discharge is found, additional efforts usually are necessary to determine the source of the problem. Methods that can find the source of the illicit discharge include: dye-testing buildings in problem areas; dye- or smoke-testing buildings at the time of sale; tracing the discharge upstream in the storm sewer; employing a certification program that shows that buildings have been checked for illicit connections; implementing an inspection program of existing septic systems; and using video to inspect</li> </ul>	<ul style="list-style-type: none"> <li>• Collaborative Action Plan: Priority areas were selected based on water quality data on a watershed-wide basis and investigations by Wayne and Oakland counties are ongoing</li> <li>• County Pollution Hot-lines: pollution complaints are investigative and tracked by each county. Municipalities also follow-up on pollution complaints sent directly to them</li> <li>• Outfall screening completed watershed-wide</li> <li>• Problem area investigations/Source identification: completed/ongoing by municipalities and counties</li> <li>• Municipal building dye-testing: completed/ongoing by counties and municipalities</li> <li>• Inspection of sanitary sewers</li> <li>• Inspection of septic systems through time-of-sale ordinances</li> <li>• Web-based Storm Water Reporting System</li> <li>• Perform and analyze annual watershed-wide water quality,</li> </ul>

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- 4) The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
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	<p>the storm sewers.</p> <ul style="list-style-type: none"> <li>• <b>Remove/Correct Illicit Connections</b> - Once the source is identified, the offending discharger should be notified and directed to correct the problem. Education efforts and working with the discharger can be effective in resolving the problem before taking legal action.</li> <li>• <b>Document Actions Taken</b> - As a final step, all actions taken under the plan should be documented. This illustrates that progress is being made to eliminate illicit connections and discharges. Documented actions should be included in annual reports and include information such as: the number of outfalls screened; any complaints received and corrected; the number of discharges and quantities of flow eliminated; and the number of dye or smoke tests conducted.</li> </ul>	<p>geomorphology, and macroinvertebrate data collection efforts.</p> <ul style="list-style-type: none"> <li>• Annual reporting: number of outfalls inspected and sources identified/eliminated, estimate volume of illicit discharges and amount of pollutants eliminated.</li> <li>• Number of pollution complaints received and resolved.</li> <li>• Footage of sanitary sewers inspected.</li> <li>• Number of septic systems inspected, failures and corrections.</li> </ul>
<p><b>Educational Outreach</b></p>	<p>The Center for Watershed Protection and Robert Pitt (2004) researched the most cost-effective and efficient techniques that can be employed to identify and correct inappropriate discharges. Data from Montgomery County, Maryland, was analyzed and it was determined that staff identify and correct about six inappropriate discharges per year as a result of regular screening. By contrast, over 185 inappropriate discharges are corrected each year in Montgomery County as a direct result of citizen complaints and calls to a storm water compliant hotline. Public education and labeling of outfalls and other storm drain infrastructure is an important element of establishing a successful citizen hotline. Outreach to public employees, businesses, property owners, the general public, and elected officials regarding ways to detect and eliminate illicit discharges is an integral part of this minimum measure. Suggested educational outreach efforts include:</p> <ul style="list-style-type: none"> <li>• Developing informative brochures, and guidances for specific audiences (e.g., carpet cleaning businesses) and school curricula;</li> <li>• Designing a program to publicize and facilitate public reporting of illicit discharges;</li> <li>• Coordinating volunteers for locating, and visually inspecting, outfalls or to stencil storm drains; and</li> <li>• Initiating recycling programs for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.</li> </ul>	<ul style="list-style-type: none"> <li>• Wayne/Oakland/Washtenaw county pollution hot-lines and brochures</li> <li>• Rouge Friendly Business Partners Program</li> <li>• Storm drain labeling by volunteers/municipalities</li> <li>• Household hazardous material collection days sponsored by the counties and municipalities</li> <li>• Electronics recycling sponsored by the counties and municipalities</li> <li>• IDEP Training Module: ARC sponsors annual training each year</li> <li>• IDEP Training video</li> <li>• Also see activities listed under the Public Education and Outreach Minimum Control Measure</li> </ul>

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**4. CONSTRUCTION SITE RUNOFF CONTROL**

What does EPA Require?

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The small MS4 operator is required to:

- 1) Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites;
- 2) Have procedures for site plan review of construction plans that consider potential water quality impacts;
- 3) Have procedures for site inspection and enforcement of control measures;
- 4) Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
- 5) Establish procedures for the receipt and consideration of information submitted by the public; and
- 6) Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

ACTION AREAS	EPA REQUIREMENTS	ARC MEMBER ACTIVITIES
<b>Regulatory Mechanism</b>	<ul style="list-style-type: none"> <li>• Development of an ordinance or other regulatory mechanism that allows a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre</li> <li>• NOTE: the small MS4 operator is required to satisfy this minimum control measure only to the maximum extent practicable and allowable under State, Tribal, or local law.</li> </ul>	ARC members are required under Part 91, NREPA to either have an enforceable and active Soil Erosion program in-house, or delegate the responsibilities to the County Enforcing Agency.
<b>Site Plan Review</b>	Requirements for the implementation and maintenance of appropriate BMPs on construction sites to control erosion and sediment and other waste at the site	ARC members are required under Part 91, NREPA to either have an enforceable and active Soil Erosion program in-house, or delegate the responsibilities to the County Enforcing Agency.
<b>Inspections and Penalties</b>	Develop procedures for site inspection and enforcement of control measures to deter infractions of the regulatory mechanism being enforced	ARC members are required under Part 91, NREPA to either have an enforceable and active Soil Erosion program in-house, or delegate the responsibilities to the County Enforcing Agency.
<b>Information Submitted by the Public</b>	<p>Development of procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities.</p> <p>It is important to note that even though all construction sites that disturb more than one acre are covered by national NPDES regulations, the construction site runoff control minimum measure for the small MS4 program is needed to induce more localized site regulation and enforcement efforts, and to enable operators of regulated small MS4s to more effectively control construction site discharges into their MS4s.</p> <p>EPA has developed a Measurable Goals Guidance for Phase II MS4s that is designed to help program managers comply with the requirement to develop measurable goals. Examples include:</p> <ul style="list-style-type: none"> <li>• An MS4 program goal e to educate at least 80 percent of all construction site operators and contractors about proper selection, installation, inspection, and maintenance of BMPs by the end of the permit term,</li> <li>• This goal could be tracked by documenting attendance at local, State, or Federal training programs.</li> </ul>	ARC members are required under Part 91, NREPA to either have an enforceable and active Soil Erosion program in-house, or delegate the responsibilities to the County Enforcing Agency.

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**5. POST CONSTRUCTION RUNOFF CONTROL**

What does EPA Require?  
*The small MS4 operator is required to:*

- 1) *Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs);*
- 2) *Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law;*
- 3) *Ensure adequate long-term operation and maintenance of controls;*
- 4) *Determine the appropriate best management practices and measurable goals for this minimum control measure.*

*EPA identifies several important action areas for successful development and implementation of a post-construction runoff control program: It is important to recognize that many BMPs are climate-specific, and not all BMPs are appropriate in every geographic area. Because the requirements of this measure are closely tied to the requirements of the Construction Site Runoff Control Minimum Measure (#4), EPA recommends that small MS4 operators develop and implement these two measures in tandem. Actions to address this requirement include non-structural and structural BMPs that could be used to satisfy the requirements of the post-construction runoff control minimum measure.*

ACTION AREAS	EPA REQUIREMENTS	ARC MEMBER ACTIVITIES
<b>Non-Structural BMPs</b>	<p>Planning Procedures:</p> <ul style="list-style-type: none"> <li>• Local master plans</li> <li>• Comprehensive plans</li> <li>• Zoning ordinances</li> </ul> <p>Site-Based BMPs:</p> <ul style="list-style-type: none"> <li>• Buffer strips</li> <li>• Riparian zone preservation</li> <li>• Minimization of disturbance</li> <li>• Minimization of imperviousness</li> <li>• Maximization of open space</li> </ul>	<ul style="list-style-type: none"> <li>• Rain Garden program through SOCWA</li> <li>• Partners for Clean Water (SEMCOG) – guidance documents and municipal training modules</li> <li>• Revision of Municipality’s Master Plan (done on a community level, not ARC)</li> <li>• Utilization of Land Cover data for Planning decisions</li> </ul>
<b>Structural BMPs</b>	<p>Stormwater Retention/Detention BMPs:</p> <ul style="list-style-type: none"> <li>• Wet ponds</li> <li>• Dry basins</li> <li>• Multi-chamber catch basins</li> </ul> <p>Infiltration BMPs:</p> <ul style="list-style-type: none"> <li>• Infiltration basins/trenches</li> <li>• Dry wells</li> <li>• Porous pavement</li> </ul> <p>EPA has developed a Measurable Goals Guidance for Phase II MS4s that is designed to help program managers comply with the requirement to develop measurable goals. Examples include:</p> <ul style="list-style-type: none"> <li>• MS4 program goal of reduction of 30 percent of the road surface areas directly connected to storm sewer systems (using traditional curb and gutter infrastructure) in new developments and redevelopment areas over the course of the first permit term.</li> <li>• Using “softer” stormwater conveyance approaches, such as grassy swales, will increase infiltration and decrease the volume and velocity of runoff leaving development sites.</li> <li>• Progress toward the goal could be measured by tracking the linear feet of curb and gutter not installed in development projects that historically would have been used.</li> </ul>	<ul style="list-style-type: none"> <li>• Detention Basin Maintenance Manual available for all ARC members</li> <li>• Grow Zone Grants Program</li> </ul>

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#### 6. POLLUTION PREVENTION/GOOD HOUSEKEEPING

***What does EPA Require?***

*Recognizing the benefits of pollution prevention practices, the rule requires an operator of a regulated small MS4 to:*

- 1) Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system;*
- 2) Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from EPA, their State or Tribe, or relevant organizations, and*
- 3) Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Some program implementation approaches, BMPs (i.e., the program actions/activities), and measurable goals are suggested below.*

ACTION AREAS	EPA REQUIREMENTS	ARC MEMBER ACTIVITIES
<b>Maintenance activities, maintenance schedules, and long-term inspection procedures</b>	Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural controls to reduce floatables and other pollutants discharged from the separate storm sewers	Community BMPs
<b>Controls for reducing or eliminating the discharge of pollutants</b>	Controls for reducing or eliminating the discharge of pollutants from areas such as roads and parking lots, maintenance and storage yards (including salt/sand storage and snow disposal areas), and waste transfer stations. These controls could include programs that promote recycling (to reduce litter), minimize pesticide use, and ensure the proper disposal of animal waste	Community recycling programs; community HHW collection days; pet waste laws and disposal bag stations in parks; Don't Feed the Geese signs.
<b>Procedures for the proper disposal of waste</b>	Procedures for the proper disposal of waste removed from separate storm sewer systems and areas listed in the bullet above, including dredge spoil, accumulated sediments, floatables, and other debris	
<b>Ways to ensure that new flood management projects assess the impacts on water quality</b>	Ways to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporation of additional water quality protection devices or practices. EPA encourages coordination with flood control managers for the purpose of identifying and addressing environmental impacts from such projects.	