

6. Public Involvement /Public Education **(Draft Ohio EPA MS4 General Permit Sections 4.2.1 and 4.2.2)** **Recommended Model Plan-Draft December 5, 2002**

Background

The NOACA SWTF PIPE Work Group developed the Model Plan contained in this section to assist communities in meeting the public involvement and public education requirements outlined in the USEPA Storm Water Phase II Final Rule and the Ohio EPA Model Permit Requirements. This Model Plan is broken down into the following sections:

Section 1 - Summary of Requirements

Section 2 - Model Plan Recommendations

**Section 3 - Summary Table of Model Plan Recommendations for the
Public Education and Public Involvement Minimum Measure**

Section 1 Summary of Requirements for Public Education and Public Involvement

The NOACA SWTF Public Involvement/Public Education Work Group utilized the the U.S. EPA Fact Sheets 2.3 and 2.4 (<http://www.epa.gov/npdes/pubs/fact2-3.pdf> and <http://www.epa.gov/npdes/pubs/fact2-4.pdf>) and Ohio EPA August 9, 2002 Draft MS4 (Municipal Separate Storm Sewer System) General Permit Section 4.2.4 to identify the Phase II requirements during the development of the recommendations for this model plan.

USEPA Guidelines

USEPA identifies three guidelines for public education and outreach: forming partnerships, using educational materials and strategies and reaching diverse audiences. USEPA identifies a number of suggested practices for public participation and involvement.

Ohio EPA Requirements

Ohio EPA requires the following:

Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts or storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff (4.2.1.1.).

At a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program. (4.2.2.1)

You must document your decision process for a Storm Water PIPE Program. Indicate the following: (4.2.1.2) (4.2.2.2).

- Report how you have involved the public in the development of your NOI and storm water management program
- Identify target pollutants your program is designed to address
- Identify your target audiences (include various ethnic groups, schools, businesses, etc.)

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- Explain how you plan to inform individuals and households (which activities will you use)
- Define who is responsible for overall program management and implementation
- Describe how you will engage community members, and
- Describe how will you evaluate your program.

Activity report sheets can track this information. Copies of these recording sheets can be kept for municipal records and used in the preparation of annual reports. Example forms have been included in Appendix B.

Section 2 - Model Plan Recommendations

The NOACA Model Plan recommends that the Phase II Regulated communities commit to addressing PIPE storm water requirements on a watershed basis. The Storm Water Phase II Minimum Control Measures for Public Involvement and Public Education (PIPE) Measures can be met in a unified approach by following the Model Plan step by step. The Model Plan recommends that PIPE activities be implemented on a multi-community or watershed basis, whereby a watershed-based provider can plan, coordinate and implement the model plan for the community as a watershed or multi-community approach. In the event that the Model Plan recommended approach is not followed, each community will be individually responsible for providing public education and public involvement activities.

Ohio EPA Requirement:

Before March 10, 2003, demonstrate involvement of the public in the development of your NOI and storm water management program (SWMP).

Model Plan Recommendation:

1) Present your community's NOI and the SWMP to your legislative body (council) at a public meeting prior to the March 10, 2003 deadline.

Ohio EPA Requirement:

Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts or storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff (4.2.1.1.).

Model Plan Recommendation:

1) It is recommended that by March 10, 2003, the Mayor or his/her designee assume responsibility to act as the community's PIPE liaison.

2) It is recommended that communities enter into an agreement with adjacent communities to undertake the planning, coordination and implementation of the community's Phase II PIPE program. See **Table 6-1 Model Elements of the Watershed Based PIPE Agreement** below. Where they exist, watershed communities should consider employment of a watershed-based PIPE Service Provider to carry out this effort. It is recommended that communities make this decision by June 30, 2003.

3) It is recommended that by September 30, 2003, that communities, working through the watershed or multi-community based agreement or through a PIPE service provider, complete a PIPE plan that:

- Reviews pollutants to be targeted based upon Ohio EPA’s 303 (d) list, existing TMDL reports and other stream assessments within the watershed of concern;
- Identifies target audiences (ethnic groups, schools, businesses, etc.);
- Outlines a plan for reaching out to members of the community and selects the BMPs that are most suitable for pollutants of concern and target audiences for implementation during the period October 1, 2003 through September 30, 2004 (see Tables 6-2 through 6-4 below);
- Describes process for engaging community members in the planning and implementation of selected BMPs
- Refines measurable goals and describes method for program evaluation; and
- Annually, and thereafter, implement, evaluate and revise PIPE plan.

Table 6-1 Model Elements of the Watershed Based PIPE Agreement

PIPE Organizational Structure

The PIPE organizational structure consists of 1) the PIPE Service Provider, a watershed group or a multi-community (Appendix A); 2) the PIPE Multi-community or watershed committee, a group of representatives defined by the PIPE Service Provider; and 3) the Community PIPE liaison., each community’s point person.

1) The PIPE Service Provider Coordinator duties include:

- Establish, convene and facilitate a watershed/multi-community PIPE Committee
- Implement the local PIPE plan with assistance from the PIPE Committee and community PIPE Liaisons
- Administer local public education and outreach events including planning, reporting and annual assessment

A list of possible PIPE Service Providers can be found in Appendix B.

2) The PIPE Watershed/Multi-Community Committee responsibilities are:

- Provide a forum for watershed communities to collectively and more efficiently address storm water issues through the development of Cooperative PIPE plans
- Agree upon and promote a series of Best Management Practices (BMPs) that apply to a specific watershed or multi-community area
- Review and implement Cooperative PIPE plans
- Identify local interests and cooperatively work with “Upstream/Downstream” communities in organizing, scheduling and hosting public education and involvement activities
- Serve as a resource for cooperative watershed/multi-community events
- Coordinate with local PIPE Liaisons in developing an annual schedule of events

3) Each community’s PIPE Liaison duties are:

- Act as community representative on the Watershed/Multi-Community PIPE Committee
- Actively participate in the Watershed/Multi-Community PIPE meetings by providing local community input
- Provide local coordination with other storm water management activities

The selection of PIPE BMPs is the responsibility of community or its designated PIPE committee. The NOACA Storm Water Task Force has developed the following guidance to assist these committees in the selection of BMPs.

4) It is recommended that communities employ the following Phased Education on Storm water Issues Guidelines to select and develop best practices for their PIPE program.

The Model Plan recommends that PIPE programs be initially developed to focus on the watershed issues found in **Table 6-2 General Watershed Issues**. These “general watershed issues” should be used to frame the initial development of local PIPE Storm Water Management Plans. In addition, the PIPE BMPs, selected for implementation in each year, should continue to utilize a stream stewardship approach to address general watershed issues and pollutants of concern. These are detailed in **Table 6-3 Stream Stewardship Best Management Practices** and **Table 6-4 Recommended Means of Dissemination**.

As PIPE programs mature, they should be more directly focused on pollutants of concern germane to the community’s watershed (See **Table 6-5 Storm Water Pollutants of Concern**). Each year’s SWTF PIPE Plan should build and continue upon a foundation of information/activities developed in the prior years.

5) It is recommended that communities annually review, evaluate and update the core components of their PIPE plan. The review should consider how successful the plan was in reaching diverse audiences; evaluate the effectiveness of the BMPs implemented and how they resulted in changes in watershed resident behavior; and identify how the plan can be updated to build upon the successes of the prior year’s work. In addition, the pollutants to be targeted should be reviewed and updated based on any changes in Ohio EPA’s stream assessment tools, e.g. 303(d) list, TMDL reports, etc. A plan update should refine measurable goals and methods for program evaluation.

Section 3 - Summary Table of Model Plan Recommendations for the Public Education and Public Involvement Minimum Measure

The summary table detailing Model Plan Recommendations for the Public Education and Public Involvement Minimum Measure is provided in Appendix C attached.

Table 6-2

General Watershed Issues

Stream Stewardship	A philosophy of personal responsibility and action in identifying and reducing/eliminating pollutants of concern.
Impacts of Land Use	Urban and suburbanizing areas are directly responsible for pollutants being carried to our streams via storm water runoff. The increases in impervious surfaces and disturbance of soil significantly contribute to stream pollution problems.
Construction Sites	The immense disturbance of soil on any given construction site results in a significant discharge of sedimentation to our streams. The adoption and implementation of BMP would significantly reduce the impacts of soil on the local fish/bug communities.
Post-Construction Runoff	Construction practices should also address post-construction runoff. Structural and non-structural BMPs should be implemented to minimize water quality impacts and attempt to maintain pre-development runoff conditions. BMPs could include: detention ponds, porous pavement, grass swells, riparian buffer zones, open space design, ordinances for post-construction runoff.
Improper Lawn Care	The use of pesticides and the over-fertilization of individual homes runs off the land during rain events and accumulates in storm drains that lead to ditches, creeks, streams and rivers.
Failing Sewage Systems	Discharge from these systems contains pathogens, including fecal coliform and E. coli, which are potentially dangerous to public health.
Cross Connections	Storm sewers that have been cross-connected with sanitary sewers also result in pathogens being directly discharged to our streams.
Pet Waste	When pet wastes is not properly disposed of, it can wash into nearby waterbodies or can be carried by runoff into storm drains. As pet waste decays in a waterbody, it uses up oxygen – combined with warm temperature it can be detrimental to the health of fish and other aquatic life. Pet waste contains nutrients, that promote weed and algae growth, and bacteria, viruses, and parasites that can pose risks to human and wildlife health.
Flood Plain Protection	Flood plains along streams provide an important role in management storm events and excess water. These flood plains are intended to act like a sponge, sucking up water and pollutants and slowly releasing them.
Riparian Zones	Streamside vegetation provides tremendous benefits to the quality and health of our streams. The protection and re-establishment of these corridor filters will help to manage pollution problems associated with storm water runoff and soil erosion.
Wetlands	Wetlands A lowland area, such as a marsh or swamp, that is saturated with moisture, especially when regarded as the natural habitat of wildlife.
Other	

Table 6-3
Summary of Stream Stewardship Best Management Practices

As noted above, Regional Storm Water Task Force strongly recommends that the first year of any Public Involvement Public Education (PIPE) Plan address the importance of stream stewardship. These first year BMPs should promote the ethic of Stream Stewardship, that is that individuals, households, businesses and other land holding organizations contribute in some way to storm water pollution and should become responsible for the sensible use of streams that flow through our properties.

Stream Stewards understand:

- ✓ How streams work and evolve
- ✓ Potential threats that can affect the health of a stream
- ✓ Personal action that can reduce or eliminate those threats

Recommended Stream Stewardship BMPs

Community or Watershed Improvement Day

It is suggested that each community participate in an annual Community Improvement Day. Each year a different activity could be held to target specific sources of pollution and various audiences. The types of activities best suited to this type of activity are: stream clean ups, neighborhood clean ups, tree-planting projects, storm drain stenciling, motor oil/antifreeze collection day; hazardous waste collection day; and stream restoration projects. This activity should be planned and announced well in advance to maximize public involvement. Advertise through schools, civic organizations and through other media outlets. Project leaders are needed at each site to collect waiver forms, registration forms and to provide training and oversight.

K-12 Education Program

Communities can partner with watershed/multi-community organizations to provide training and program ideas to local schools. Activities may include: Poster contests, display, environmental camps/programs, drain stenciling, educational videos.

A Poster Contest

A Contest held on a watershed or regional level could have a wonderful impact. Students at many schools would rally around a particular theme. All posters can be displayed at various locations in the city or a regional location. Winning entries could be printed on place mats and distributed to local restaurants.

Water Festival

A water festival can take a variety of forms. Usually the festival features educational, scientific, technical and natural resource professionals who host various “water-related” activities for the participants. A water festival provides an opportunity to bring experts into the community to answer questions and do demonstrations linked to science curriculum. This activity can be targeted to various age groups of students or held as a family event. It is best organized as part of a watershed initiative.

Watershed or Creek-side Signage

An easy way to remind people they are crossing a creek or living in a watershed is to create signage to place at creek crossings. The signs could be as simple as naming the creek, or if working with a watershed group, could indicate the name of the watershed. Some communities may wish to involve the public by asking businesses, organizations and citizens to “adopt” a crossing by paying a fee to include their name on the signage.

Table 6-4
Recommended Means of Dissemination

NOACA has developed the following guidance to assist PIPE planning committees in selecting the most effective means of dissemination for PIPE programs.

Community Newsletter

Include an article, on the subject of storm water and water quality, in at least 50% of the community newsletters on an annual basis. Articles can be written by municipal personnel or downloaded from the web or provided through the watershed group.

Suggestion: Coordinate the articles with the theme of Storm Water Educational Display for maximum impact.

Storm Water Website

A storm water page on the city's website can update all citizens about the city's storm water program and progress. The site can link residents to the sites of other agencies working on storm water-related projects or with educational information. The site can also be used to list public meetings, upcoming events and volunteer opportunities. The website could be advertised in all educational literature distributed by the city to its residents.

Brochures and Fact Sheets:

Brochures and fact sheets can be designed or obtained for a variety of issues confronting the community about water quality and storm water. These materials can be mailed directly to specific target audiences, included in "New Resident" packets, placed in racks in public buildings, like city hall or distributed by volunteers or at community events. Educational literature can correspond to the educational display, newsletter and/or website information for maximum impact. Target audiences should include: all residents, homeowners, riparian landowners, septic system owners, businesses and commercial enterprises, various age and ethnic groups, school children. Suggested topics include: Storm sewers, watershed management, stream stewardship, proper disposal of wastes (including household hazardous wastes, motor oil and pet waste), lawn and garden care and ditch maintenance.

Storm Water Educational display

Create a display for community events, libraries, schools, and community events to educate the public about how to protect water quality. Suggested topics might include:

- Municipal storm sewer system or watersheds
- Lawn & garden care-pesticide management
- Household hazardous wastes-no dumping
- Backyard or Stream Stewardship

Storm Drain Stenciling

Initiate a storm drain stenciling educational program (Dump No Waste). Purchase supplies that can be utilized by community groups. Advertise and coordinate periodic training sessions. Replace cast iron curbs with pre-cast curbs that read: "No Dumping"; Utilize volunteers to distribute educational literature.

Storm Water/Environmental Hotline

Currently a variety of municipal personnel take calls regarding environmental problems. A hotline or designated number that is advertised through the community newsletter, website, local media, special promotional literature would provide an easy way to track calls from residents (and municipal efforts related to the problem). Information collected can help identify future educational outreach needs or remediation efforts.

Community Service Hours

Volunteer activities are required by many high schools. Likewise, scouts often seek opportunities to work on merit badges. Activities like stream clean ups, storm drain stenciling and tree planting are good activities to involve students for community service credits.

Table 6-5 Storm Water Pollutants of Concern

Pollutants of Concern	Description of Problem	Degree of Problem	Urban / Urbanizing Community	Local or Watershed-wide	TMDL, 303e Listed, or Other
Oil, Gas, Grease (from engine lubricants & kitchen waste, etc.)	Oil and grease float on the water's surface and block sunlight needed by underwater fish and plants. Oil and grease can also damage stream habitat and sensitive spawning areas when the cling to sand and gravel particles that settle to the bottom of streambeds.				
Nutrients	Phosphorus and nitrogen are transported into stream when storm water picks up fertilizer and animal waste residues on the ground – when excessive amounts of nutrients end up in water bodies, they accelerate algae growth and cause eutrophication, which disrupts life in ponds and streams.				
Heavy metals	Lead, zinc and mercury found in batteries, fuels, paints, pesticides, cleaners (e.g. algaecides), industrial rubber – when these breakdown, they leave behind pollutants that can be readily transported into streams by storm water and can be toxic to fish and other aquatic life in streams.				
Chemicals	Toxic chemicals in fuels, paints, cleaning products and pesticides (used at work & home) – can harm not only users but also water quality and aquatic life when they are improperly handled. Chemicals, especially organic chemicals, have a wide range of toxic effects on fish and aquatic life, including causing tumors and skin lesions and disrupting reproductive functions.				
Mud and Sediment	Soil is readily carried by storm and flood waters, causing excessive buildup (sedimentation). When storm water flows across construction sites and unplanted it picks up loose dirt, creating mud, which is quickly carried into streams where it causes sedimentation pollution. When too much sediment accumulates on streambeds, it damages fish-spawning areas, alters habitat where bottom-dwelling organisms live and reproduce, and interferes with fish migration. In addition, dirt and sand often pick up oil and grease in their path, which introduces additional chemical contaminants that are toxic to fish and other aquatic organisms.				

H – High, M – Medium, L – Low/Y – Yes, N – No/ L – Local, W – Watershed-wide, B – Both

Table 6-5 Storm Water Pollutants of Concern continued

Pollutants of Concern	Description of Problem	Degree of Problem	Urban / Urbanizing Community	Local or Watershed-wide	TMDL. 303e Listed, or Other
Litter	Debris that overflows from trashcans and litter thrown onto the ground are readily carried by storm water into streams and rivers where they harm fish and aquatic life, hinder sunlight penetration, and interfere with fish movement and migration.				
Abnormal pH	When storm water mixes with chemicals or chemical products that are acidic or alkaline, the pH of the water is changed. When acid rain and other forms of acid precipitation collect in streams and ponds, it also alters the pH. Acidic or alkaline conditions in streams harms fish, especially sensitive juvenile fish and other organisms.				
Pathogens Coliform bacteria E. coli	At high levels, naturally occurring coliform bacteria from human and animal wastes can contaminate water. Proper operation and maintenance of home sewage treatment systems and picking up and disposing of pet feces helps prevent pollution and eutrophication from pathogens in streams.				

H – High, M – Medium, L – Low/Y – Yes, N – No/L – Local, W – Watershed-wide, B – Both