

Executive Summary

Purpose and Process

This Watershed Management Plan (WMP) was developed for the purposes of providing a comprehensive storm water management plan that will improve and protect water quality across the land area known as St. Clair County's Northeastern Watersheds (NEW) (Figures 1.1 and 1.2) and fulfilling Phase II storm water requirements for local public entities. This plan is a comprehensive document that describes the status and conditions of the NEW, sets appropriate goals and objectives, and describes specific actions that will be used to protect, restore, and enhance the unique and valuable natural and fisheries resources in the watersheds.

The NEW Watershed Management Plan (WMP) represents multiple public entities* and specifically describes the following:

- Current health status and conditions of waterways,
- Goals and objectives for storm water and land use management
- Recommended management actions that will meet the WMP's goals and objectives
- Actions that each Phase II entity will be implementing in the next two to five years,
- Actions that each Phase II entity wishes to implement but does not have the resources to implement at this time,
- Actions that will assess the condition of waterways and evaluate the storm water and land use management activities being implemented, and
- Strategies to sustain the planning and implementation process.

*See Table 1.1 for a list of project partners this WMP represents

Currently pollution from diffuse sources or "nonpoint sources" is the most significant pollution problem for our nation's waterways, including sediment, excessive nutrients such as nitrogen and phosphorus, bacteria (pathogens), and heavy metals. In order to address these sources of pollution, in 2003 the EPA mandated all public entities, having jurisdiction over property within "urbanized areas", to obtain a National Pollutant Discharge Elimination System (NPDES) Phase II Storm Water Permit. This permit requires the prevention and mitigation of nonpoint pollution sources and requires development of a storm water management plan that addresses the following six minimum measures:

- 1. Public Education and Outreach**
Educate the public to prevent sources of water pollution.
- 2. Public Involvement and Participation**
Involve the public in storm water management.
- 3. Illicit Discharge/Connection Elimination**
Proactively locate and correct illegal discharges.
- 4. Construction Site Stormwater runoff control**
Prevent sources of storm water pollution on new construction sites.
- 5. Post-Construction Stormwater Management**
Prevent storm water pollution after new construction has occurred through proper land use planning tools and construction techniques.
- 6. Pollution Prevention and Good Housekeeping**
Implement pollution prevention activities on all properties.

In Michigan, a unique option was proposed that would fulfill the EPA requirements and encourage cooperation and sharing of resources among permittees. This option, commonly called the “Watershed Permit”, requires permittees to develop a cooperative Watershed Management Plan (WMP) in lieu of separate storm water management plans. To develop this Plan, governmental entities in the NEW (Table 1.1) formed St. Clair County’s Northeastern Watersheds Advisory Group (NEW WAG).

Ultimately, the goals and objectives of this Watershed Management Plan will be attained through a process of adaptive management. As changes in the watershed occur and programs and the effectiveness of projects/practices are assessed, strategies to attain the watershed goals and objectives are likely to change over time. The overall goal is for watershed planning and implementation to become self-sustaining with increased initiative and participation from stakeholders over time.

CHAPTER 1 – WATERSHED PROFILE

Describes the natural features and land use characteristics of the NEW’s three subwatersheds:

- **Lake Huron Direct Drainage (LHD)**
- **Lower Black River (LBR)**
- **St. Clair River Direct Drainage (SRD)**

The NEW is a subwatershed of the St. Clair River, and drains the northeast corner of St. Clair County and part of Sanilac County. The NEW encompasses approximately 31% of the land in St. Clair County draining 144,000 acres of land into 376 mile of tributaries that ultimately discharge into the St. Clair River. The NEW also encompasses 46.8 miles of shoreline along Lake Huron and the St. Clair River and contains twenty communities spanning St. Clair and Sanilac counties.

Chapter 1 outlines the hydrologic boundaries, provides historical background, discusses soils, topography, hydrology, endangered species, protected and significant natural resource areas, prime farmland, and fisheries as they relate to current water quality conditions in the NEW and each of it’s three subwatersheds.

Chapter 1 also provides a growth trend and land use analysis of all three subwatersheds combined as well as by each individual community. This land use planning component helps highlight the importance of using land use planning tools for the prevention of storm water pollution problems and protection of significant natural resources.

CHAPTER 2 – STATUS OF WATER QUALITY IN THE WATERSHED

Describes the current water quality conditions in the Northeastern Watersheds

Chapter 2 provides a description of the current water quality conditions in the Northeastern Watersheds. This includes historical and recently collected information on point source discharges, sites of environmental contamination and non-point source pollution. The Chapter also gives an up-to-date assessment of current water quality concerns and pollutants that are a priority in the NEW based on existing data, three years of watershed meetings, and two years of public involvement activities. The water quality data, biological assessments, photos, and other data is compiled in a separate Data Resource Directory (CD).

In an effort to identify potential goals, pollutant sources, and water resource concerns, the following were identified:

- Impaired public uses of water resources that must be restored
- “Desired Uses” of water resources that should be protected and enhanced
- Water resource concerns that appear to be problems in the watershed

The following pollutants were identified as having the most significant impact on water quality in the NEW:

- Sediment
- Nutrients
- Pathogens/ Bacteria
- Flashy flow

The sources of these pollutants are primarily related to:

- Agricultural runoff
- Channelization and altered watershed hydrology
- Poorly maintained construction sites and inadequate land use planning
- Failing septic systems
- Road, parking lot, and lawn storm water runoff
- Increased impervious surfaces
- Road/stream crossing erosion
- Unrestricted cattle access

CHAPTER 3 – PRIORITIZED POLLUTANTS, CRITICAL AREAS, AND PRIORITY AREAS

Discusses the Priority Areas that need the most protection and the Critical Areas that are contributing the most significant amount of pollutants

“Priority Areas” are high quality and environmentally-sensitive areas that require protection and preservation. A “Critical Area” is an area that produces the highest level of pollutants in a watershed. These are delineated so that resources are focused on areas where the most results will be produced.

As more water quality data and stakeholder input is collected over time, Critical and Priority Areas will be defined more specifically. Based on current information, areas were identified as Critical or Priority.

Priority Areas to be protected and preserved include:

- Unique natural areas such as: northern forest woodlands, wetlands, hemlock ravines, and glacial beach ridges
- Greenway corridors
- Prime agricultural land

Critical Areas for corrective actions include:

- Erosion (sediment): Tributary headwaters and agricultural areas
- Pathogens and Bacteria: Failing septic systems and sites of unrestricted cattle access
- Nutrients: Unbuffered agricultural and urban landscaped areas
- Flashy flow regime: Increases in urbanization (directly connected impervious surfaces) and agricultural drainage

TMDLs and Critical Areas

There are several river reaches and public beaches in the NEW that have been scheduled for the development of a Total Maximum Daily Load (TMDL). Past monitoring has shown these river reaches and public beaches have had pollutant levels above State water quality standards. MDEQ has scheduled the development of a regulatory corrective action plan (the TMDL) which will mandate necessary corrective actions from the local entities. Actions to correct high pollutant levels in these areas should be implemented as soon as possible so the future development of these TMDLs can be avoided. The scheduled bacteria TMDLs are listed in Chapter 2 (Table 2.2) and are considered Critical Areas for the NEW.

CHAPTER 4 – WATERSHED GOALS AND OBJECTIVES

Describes the goals and objectives of St. Clair County’s Northeastern Watersheds developed by the watershed group representatives and public input

The NEW Watershed Advisory Group (WAG) used the water quality data, reviews of the county and communities’ master plans, engineering standards, and ordinances, as well as input from local officials, organizations, and the general public to develop the goals and objectives in Chapter 4. Eight long-term watershed goals and more specific objectives for each goal have been developed by the WAG. The goals are:

1. Identify and protect high-quality natural features including forested areas, floodplains, riparian buffers, wetlands, and contiguous greenways.
2. Ensure sustainable growth and development.
3. Protect and improve water related recreation.
4. Protect and improve the warm water and cool water fishery and conditions for other indigenous aquatic life and wildlife.
5. Protect public health and the drinking water supply (public and private).
6. Preserve the rural character (farmland and open space) of the area.
7. Increase recreational opportunities (parks and other facilities), including public access to Lake Huron, the Black River, and the St. Clair River.
8. Maintain and/or increase the aesthetics of the water resources.

Each long-term goal will be met by a series of short-term measurable objectives. Each objective will be implemented in some manner within the first five (5) years, with many on-going actions into subsequent permit cycles. Each Phase II permittee in the NEW must submit a series of projects/practices that will meet each goal and objective of the Watershed Management Plan. Ultimately, the goals and objectives of this Watershed Management Plan will be achieved through the process of adaptive management.

CHAPTER 5 – MASTER PLANS AND ZONING ORDINANCE ANALYSIS

Provides an analysis of current community Master Plans and Zoning Ordinances and the County’s storm water design standards and recommendations.

Planning tools and storm water design standards are some of the best ways local communities and the county can minimize the impact development has on water resources. Chapter 5 provides a

review of the Master Plans and Zoning Ordinances of each of the participating communities and provides recommendations for tools that will better protect water resources.

Some of the recommendations for Master Plans are:

- Include the current environmental status and threats to the major water resources in your community
- Include the environmental and water quality status of the rivers and lakes in the community
- Discuss the impact storm water has on natural features, including
 - the impacts of increased water quantity and poor storm water quality on the systems and the community
- Include goals for:
 - reduction in the amount of impervious surfaces
 - increasing storm water infiltration
 - reduction of sediments in runoff

The general recommendations for land use planning include the adoption of local ordinances that address:

- Storm water management and design standards
- Grading and clearing
- Riparian buffers
- Natural features protection
- Wetlands

During the watershed planning process, extensive discussions were held regarding the need for review of storm water discharges for all new developments and consistent storm water design standards between local communities and county departments. Many communities currently do not have to review new developments, such as lot splits, for storm water discharges and this is thought to be contributing to the flashy flow regimes of some local drains and waterways. Because of these discussions, the WMP includes a review of drainage standards for the St. Clair County Drain Office and Road Commission (Chapter 6 – BMP 30, and Appendix I).

A review of the St. Clair County Drain Commissioner’s 2004 Design Standards shows numerous rules for protection of water quality and quantity that could be used by local communities. The following provides recommendations for future improvements to these standards:

- Encourage the use of wet ponds over dry basins
- Require regular maintenance through a standard maintenance agreement and encourage the use of adequately sized sediment forebays for all pond designs
- Encourage a minimum buffer width of 25 feet surrounding storm water management facilities and drains within the set easement
- Encourage the use of native plants for newly constructed or retrofitted ponds
- Include a list of allowable Low Impact Development BMPs and their specifications in an appendix

The review of the St. Clair County Road Commission’s road drainage criteria shows required ditch grade and associated stabilization methods for open ditches and enclosed systems. It has been recommended that the pre-development discharge rate currently used for new road drain discharges be included in future updates to their “Procedures for Plat Street Development”.

CHAPTER 6 – BEST MANAGEMENT PRACTICES

Describes tasks or actions that each community can use to address the goals of the plan

Chapter 6 provides a description of 82 actions or Best Management Practices (BMPs) that a community/agency can choose to implement to help control the quality and quantity of storm water runoff from construction sites, urban areas, agricultural areas, roadways, and recreational areas. These BMPs are primarily used to:

- Minimize or treat pollutants picked up by runoff before it enters surface waters and groundwater,
- Increase pollution prevention practices in municipal operations,
- Minimize impervious surfaces and directly-connected impervious areas,,
- Protect natural features,
- Prevent stream channel erosion, and
- Increase infiltration of storm water runoff

Each permittee identified their level of commitment to implementing these BMPs in the “Action Plan Matrix” outlined in Chapter 7. The permittee-specific commitments will then be elaborated upon and included in a submittal to the MDEQ. The level of commitment for each BMP will be determined based on each permittees unique situations, staffing, and funding resources.

CHAPTER 7 – WATERSHED ACTION PLAN

Describes each county agency, township, municipality, school, and school district’s commitments to this Watershed Management Plans goals and objectives

Each county agency, township, municipality, school and school district needs to address every goal and objective by implementing the combination of practices that are most appropriate to their unique circumstances. The actions, selected from the BMPs in Chapter 6, that each Phase II permittee commits to implementing on a short- and long-term basis as well as those actions they wish to implement but do not have the resources for at this time are described in detail in Chapter 7. The commitments identified will then be elaborated upon by each permittee and included in their Storm Water Pollution Prevention Initiative to be submitted to MDEQ for approval in May, 2007.

The following descriptions are examples of recommended actions that meet the intent of this WMP:

Public Education and Outreach

- Promote and participate in existing watershed-wide programs
- Educate the public about stormwater runoff, lawn care, pet waste management, soil erosion, proper road salt application, and similar subjects

Public Involvement and Participation

- Promote and participate in River Day
- Develop volunteer water quality monitoring
- Coordinate stream clean ups

Illicit Discharge/Connection Elimination

- Eliminate sewage and other non-stormwater discharges from storm drains
- Control overflows from sanitary sewer systems
- Correct failed septic tank, tile field systems

Construction Site Storm Water Runoff Control

- Educate employees and Developers on proper soil erosion and sediment control
- Effectively implement regulatory control programs

Post-Construction Storm Water Management

- Develop design standards, ordinances, and master plans as managerial controls
- Construct or encourage structural stormwater practices (detention basins, constructed wetlands)
- Construct or encourage vegetative stormwater practices (vegetative buffers, grassed swales, rain gardens, no mow zones, prairies)
- Properly maintain road crossings, storm sewers, streets, outfalls, and open drainage systems

Pollution Prevention and Good Housekeeping for Municipal Facilities

- Identify improvements to managing materials and runoff at municipal facilities
- Install new stormwater management practices
- Reduce lawn mowing and fertilizer use and increase use of native plants
- Reduce turf-grass area – create no-mow zones or vegetation zones

Watershed Management Plan Implementation

- Continue group planning effort
- Implement an institutional framework and financial solutions to sustain the planning and implementation
- Develop adequate enforcement capabilities
- Evaluation and measurement of progress in meeting the goals and objectives of the plan

CHAPTER 8 – INFORMATION AND EDUCATION PLAN

Describes the public participation and education activities that were used to involve the public in the development of this plan, and the public education campaign that will be used to implement this WMP

It is important to emphasize the public involvement and education activities that were implemented throughout the development of this watershed plan. A summary of the public education and public involvement activities implemented during plan development is provided in Chapter 8.

A summary of the public involvement activities includes:

- Monthly meetings of the advisory group (NEW WAG), 2003 - 2006
- Four public meetings held in October of 2004 to provide the general public background on the planning process and obtain input on issues and concerns
- Three focus group meetings that focused on prioritized issues of the NEW Watershed Advisory Group:
 - Land Use Planning
 - Determining the Goals and Objectives
 - Coordination of Design Standards for Stormwater Management
- Newsletters, the county's storm water website and presentations given to various boards that were used to inform stakeholders of the planning process.

A major objective of the education program is to promote pollution prevention and inform the public on the actions they can implement to protect water quality. This education campaign is

outlined in Chapter 8. A summary of the public education activities planned that will address priority pollutants includes:

- Various media (newsletter, brochures, articles) will be used to inform and educate specific target audiences on the pollutants and concerns outlined in the plan.
- Watershed events such as River Day will be held annually.
- Workshops and presentations will be held periodically.
- Watershed signage and storm drain markers will be installed.
- The county's website will advertise events, provide an opportunity for the public to review the draft WMP, and disseminate educational materials.
- Ongoing programs by SEMCOG, MSU-Extension, MDEQ, and others will be sponsored and advertised.

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CHAPTER 9 – METHODS OF EVALUATION

Describes the methods the NEW Watershed Advisory Group will use to continue the watershed planning process and measure the effectiveness of their implementation efforts

Chapter 9 describes the necessary components to effectively implement this Watershed Management Plan. Two of the most difficult obstacles that will need to be addressed by the NEW Watershed Advisory Group are:

- Identification of a lead agency to act as the watershed group's advocate and facilitator
- Identification of a funding and implementation structure to insure continuation of the watershed planning process

Chapter 9 also describes the process for evaluating the effectiveness of this watershed planning process. Tracking effectiveness and the implementation progress is important as it:

- Provides a means for communities and agencies to demonstrate compliance with permit requirements
- Demonstrates progress in meeting plan goals and objectives
- Provides information from which the WAG can adjust priorities

Some of the evaluation methods listed in Chapter 9 for the NEW WAG are:

- Annual reports to the MDEQ on actions completed
- A periodic analysis of the amount of impervious surface in the NEW
- Photographs that illustrate completed projects, improved aesthetics, improved water quality and improved habitat
- Surveys of the public and stakeholders to measure changes in their understanding of storm water issues
- Water quality and quantity monitoring throughout the watershed
- Monitoring of the biological communities in the NEW
- Natural features mapping and assessments

SUMMARY

St. Clair County's Northeastern Watersheds and the adjacent St. Clair River are extraordinary assets to St. Clair County residents. The recreational resources and enhancement to the local way of life that these waterways provide are invaluable. The effective implementation of this plan will be critical to the long-term protection, restoration, and enhancement of the tributaries of the NEW and the St. Clair River that are so vital to the local economies.

Historic land use practices, channel modifications, and nonpoint source pollution have had considerable impact on most of the NEW's water resources. These waterways have a great potential for restoration and significant enhancement, while the remaining areas with quality resources are in need of protection. As development continues in the county, effective land use master planning and integrated storm water management will be key factors in determining the condition of the NEW in future decades.

The increased awareness and questions raised about existing land use planning and water resource management practices have been an important success of this watershed planning effort. As the recommended actions are implemented, these questions will be answered and the goals and objectives of this plan will be achieved through the process of adaptive management. Undoubtedly, questions will continue to arise as the solutions evolve. As the WMP is periodically updated, the specific objectives, lessons learned, and implementation actions will be revised to further achieve the watershed goals over time.