

Chapter 1 Introduction

The Oakland County communities within the Rouge River Watershed have spent hundreds of millions of dollars on pollution control yet the river continues to violate water quality standards. As the regulatory authorities continued to push for individual pollution control projects, these communities began to realize that the traditional “command and control” approach to water resource management had failed to achieve full compliance. A different approach was warranted.

This subwatershed plan is a direct result of this revelation. Eighteen communities have chosen to work cooperatively with the regulatory authorities to develop a watershed specific plan for improving the water resource with an ultimate goal of achieving water quality standards. This approach was facilitated by the introduction of the Michigan Voluntary General Storm Water Permit process. Each community in the Main 1-2 Subwatershed has sought coverage under this permit and by doing so have committed to addressing the broad range of sources that negatively impacts the river. Each community has recognized their individual contribution to the problem and has outlined a program to address their contribution. These individual programs will be implemented through the Storm Water Pollution Prevention Initiative (SWPPI) process.

Major portions of the watershed plan have been completed. Specifically, all combined sewer overflows (CSOs) have been controlled. Similarly, the illicit discharge elimination programs have been completed with a small number of illicit discharges yet to be eliminated. Lastly, a major effort is ongoing to identify, reduce and ultimately eliminate SSOs in the subwatershed. These efforts coupled with the proposed onsite sewage disposal systems inspection program will virtually eliminate the discharge of sewage into the river. The challenge now is to provide the other components of a vibrant, accessible river. This must include a reduction of peak flows, sediment load and chemical pollutants, habitat protection/restoration, enhanced recreational activities and a comprehensive public education effort.

The Rouge River Watershed covers 438 square miles of southeast Michigan (metropolitan Detroit) (see Figure 1-1) and is home to more than 1.5 million people in parts of three counties – Wayne, Oakland and Washtenaw. The Rouge River, a tributary to the Detroit River in southeastern Michigan, has been documented as a significant source of pollution to the Great Lakes system

The Rouge River was once a vibrant waterway that supported a number of recreational uses and a broad range of fish and wildlife species. These and other attributes attracted a large number of people and businesses which ultimately made the Rouge River Watershed the most populated and

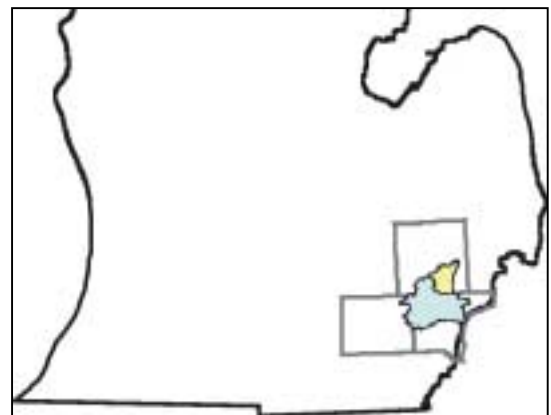


Figure 1-1: Location within Southeast Michigan

industrialized area of the state. Today, over 50% of the land in the Rouge River Watershed is classified as urban and less than 25% is considered undeveloped. The land uses range from undeveloped land and farms in the western edge of the watershed to heavily urbanized sections in the eastern part.

The growth and development of the Rouge River Watershed has come at a price, however. Additionally, the high population density of the watershed has had an impact on both the quantity and quality of the river. The increase in impervious area has increased peak river flows causing extensive streambank erosion and an increased pollutant load to the river. The increase in pollutants to the river from failing septic systems and fertilizer runoff has resulted in premature lake eutrophication. In recent years, the public became concerned with the conditions of the river, noting that pollution-related problems had eliminated most recreational uses and generally degraded the quality of life for watershed residents.

1.1 PURPOSE

This Main 1-2 Rouge River Subwatershed Management Plan lays the groundwork to restore the uses of the Rouge River impaired by flow variability, high bacteria levels and low dissolved oxygen levels. The Main 1-2 Subwatershed is one of the seven Rouge River subwatersheds established under the Michigan Department of Environmental Quality (MDEQ) Voluntary General Storm Water Permit. The subwatersheds were created based on hydrological boundaries rather than political ones. The subwatershed communities work together under the umbrella of a Subwatershed Advisory Group (SWAG), and are required to develop subwatershed management plans that identify and implement actions needed to address water quality issues within the subwatershed. An emphasis of each of the subwatershed management plans is to mitigate the undesirable impacts caused by storm water discharges to the river. In addition, to receive a Certificate of Coverage under the voluntary permit program, the individual communities of the subwatershed were required to create an illicit discharge elimination program and a public education program. Forty-four communities and agencies within the Rouge River Watershed have applied for and obtained a Certificate of Coverage for storm water discharges under the new general permit.

1.2 BACKGROUND

Due to public outcry about the condition of the Rouge River in 1985, the State of Michigan adopted the Rouge River Basin Strategy. A key element in this strategy was the development of a plan to clean up the river – the Rouge River Remedial Action Plan (Rouge River RAP). The original RAP was completed in 1989 consistent with the commitments made by the states, Canadian provinces and two federal governments as part of a Great Lakes Water Quality Agreement. This international agreement signed by the United States and Canada identified 42 Areas of Concern (AOCs) in the Great Lakes Basin that needed attention. The Rouge River was one AOC listed.

1.3 ROUGE RIVER RAP

The original Rouge River RAP, a nine-volume document, defined an ambitious 20-year program of actions needed to protect the public health and to make substantial progress to restore the impaired uses of the river. It focused on controlling the most easily regulated sources of pollution to the river, namely large industrial and municipal wastewater treatment plant discharges. At the time, the full cost of the clean up was estimated at \$900 million. Subsequent updates of the original RAP indicate that the full cost to restore the river is much higher.

In 1993, the state reorganized the committee originally established to prepare the Rouge River RAP and expanded its membership to include a broad range of citizen, government and business stakeholders. The new organization was called the Rouge RAP Advisory Council (RRAC). In 1994, under the guidance of the RRAC, a revised 1994 Rouge River RAP was published. This 136-page-report outlined the considerable progress that had been made in addressing major pollution sources in the river and outlined the additional steps needed to restore uses that were still impaired. The 1994 report documented the contributions of the Rouge River National Wet Weather Demonstration Project (Rouge Project) in accomplishing many of the objectives outlined in the original 1989 Rouge River RAP.

1.4 **THE ROUGE PROJECT**

In 1992, the U.S. Environmental Protection Agency (EPA) provided \$46 million to Wayne County to fund the Rouge Project with a primary goal of establishing a watershed-wide approach to addressing the problems of an urban river. This meant looking beyond the obvious impacts (i.e., Combined Sewer Overflows) to matters of recreational use and habitat restoration. While final design decisions for the major civil structures remained with the local communities, the Rouge Project provided overall coordination to encourage substantial differences among the designs commensurate with the intent of the demonstration project.

As a result of this effort, all Combined Sewer Overflows (CSOs) have been controlled in the Main 1-2 Subwatershed. Under the direction of the Oakland County Drain Commissioner's Office, CSO retention/treatment basins were constructed in the Lincoln Hills Golf Club in Bloomfield Township; the Douglas-Evans Nature Preserve in Beverly Hills, and Linden Park in Birmingham. A great deal of attention was paid to architectural character of these facilities. As a result, these structures are now embraced by the residents who once opposed their construction.

In addition to providing several million dollars in grants to communities to help separate combined sewers and/or construct retention basins to store and treat CSOs, the Rouge Project has funded local community pilot projects that demonstrate how other sources of pollution can be controlled. A part of the Rouge Project has also included extensive monitoring of the water quality and related aquatic habitat of the river to measure progress and pinpoint areas that need further attention.

Within the first few years of monitoring, the Rouge Project documented problems in the river unrelated to CSOs. It became clear as the water quality monitoring results accumulated throughout the watershed that without a comprehensive, watershed approach, the investments made to address CSOs would not restore the designated uses identified in the RAP.



CSO basin at Douglas-Evans Nature Preserve



CSO basin at Lincoln Hills Golf Club



CSO basin at Linden Park

Contaminated storm water discharges, sewer overflows, failing septic systems, excessive run-off from developed areas, stream bank erosion, construction activities and a number of other sources and activities were degrading water quality.

1.5 THE U.S. FEDERAL COURT

Since the 1970s, the United States District Court for the Eastern District of Michigan has been involved in overseeing compliance with the federal Clean Water Act by the City of Detroit and the suburban customers of its Detroit Water and Sewerage Department. The federal court initially became involved through enforcement actions brought by the state and federal regulatory agencies concerning the operation of the Detroit wastewater treatment facility. In the early 1990s, the court facilitated a resolution to the state-ordered correction of CSOs that resulted in a phased approach in which the responsible local agencies would be allowed to demonstrate cost effective alternatives to capture and treat these discharges.

With early reports from the Rouge Project that the control of CSOs alone would not address all the pollution problems in the river, the federal court urged the 48 local public agencies within the Rouge River watershed to adopt a more comprehensive approach. In response to the court's concerns, a group of local agencies working within the Rouge Project proposed a watershed approach to the court that involved development of a new regulatory framework for the management of storm water and certain other pollution sources. The federal court encouraged the communities to pursue this approach, which was later embraced by the MDEQ when it adopted the voluntary watershed-based general storm water permit in 1997. The U.S. EPA subsequently endorsed the state's general storm water permit.

1.6 VOLUNTARY GENERAL STORM WATER PERMIT

The MDEQ adopted an innovative approach to the regulation of storm water discharges from publicly controlled separate storm water conveyances that was modeled after an approach recommended by public agencies within the Rouge River Watershed. This unique regulatory approach requires the formation of subwatershed groups, where communities and other public agencies responsible for storm water work cooperatively to develop and implement plans to address sources of pollution.

The Voluntary General Storm Water Permit requires the subwatershed communities to work cooperatively to draft a subwatershed plan. This document fulfills that requirement. After the plan is adopted and submitted to the MDEQ, each public agency covered by the permit must submit a Storm Water Pollution Prevention Initiative (SWPPI) that commits the public agency to specific actions that it intends to undertake consistent with the cooperatively developed subwatershed management plan. While voluntary for most public agencies now, new federal storm water regulations will require all communities within the Rouge River Watershed to obtain a permit to discharge storm water by March of 2003. The U.S. EPA has indicated that the Michigan watershed-based general permit will meet the new federal requirements.

1.7 CLEAN MICHIGAN INITIATIVE REQUIREMENTS

The Watershed Management Plan does not require formal approval by the MDEQ. However, if communities want to be eligible for Clean Michigan Initiative funds then MDEQ approval is necessary. Table 1-1 presents a comparison of CMI Watershed Management Plan Requirements and the contents of the Main 1-2 Subwatershed Management Plan. In some cases detailed information on community actions will be included in their SWWPI.

Table 1-1: CMI Chart: Comparison of CMI Watershed Management Plan Requirements and Contents of Main 1-2 Watershed Management Plan

CMI REQUIREMENT	WATERSHED MANAGEMENT PLAN REFERENCE
1. Geographic scope, including map with watershed boundaries, plus description of the watershed	Page 1-1, Figure 2-1, Chapter 2
2. List of (a) designated uses not being met, or threatened, plus (b) desired uses	Tables 3-1, 4-1
3. List of known or suspected pollutants	Tables 3-1, 4-1
4. List of potential causes for each known and suspected pollutant	Tables 3-1, 4-1
5. List of WQ improvement or protection goals, based on designated uses	Table 4-1, Chapter 4
6. Identification of critical area(s)	Table 4-1, Section 3.3, Appendices I, J, K
7. List of (a) sources and causes for each pollutant, (b) number and location of sites for each source, and (c) method used to conduct inventory	Sections 3.1, 3.2, 3.3, 3.4, Table 4-1, Appendices I, J and K
8. Prioritized list of designated uses, pollutants, sources, and causes, and methods used to prioritize	Table 4-1, Appendix B
9. List of BMPs for each source, and estimated costs	Chapter 6, Appendix A
10. List of tasks needed to implement the BMPs, and estimated costs	Chapter 6, Appendix A, Appendix C
11. Summary of local projects, programs and ordinances, including tasks, responsible parties, milestones, and a timeline for improving or adding to them	Chapter 5, Table 5-1, Table 5-2
12. Summary of information/education and public participation process	Section 4.3, Section 6.2.7, Chapter 5
13. Process to evaluate effectiveness of implementing plan and achieving its goals	Chapter 7, Chapter 8
14. Tasks to institutionalize watershed protection	Table 5-1, Chapter 7, Chapter 8