

# Chapter 1 Introduction

The communities that share the lower portions of the Rouge River have experienced the worst aspects of environmental damage as a result of urbanization and industrialization. As a result they have paid the price with lost recreational opportunity. More importantly, they have paid the tremendous financial costs associated with retrofitting their older urban infrastructure into a system that fulfills the goals of the federal Clean Water Act. The costs to date have been substantial but the anticipated costs over the next ten years will be staggering.

The Main 3-4 communities are all committed to complying with the Clean Water Act. Their efforts alone, however, will not restore the uses of the Rouge River. They must rely on their upstream neighbors to also commit to restoring the river. Thus, with the Rouge Remedial Action Plan (RAP) serving as the framework, the communities of the Main 3-4 have prepared this watershed plan as a tool to coordinate and guide the water quality management effort in their communities.



## Melvindale boat launch

formulated through the Storm Water Pollution Prevention Initiative (SWPPI) process.

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. All of this area drains through the Main 3-4. 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 Main 3-4 communities have chosen to **Melvindale** 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. The communities' leaders sought coverage under this permit and have committed to addressing the broad range of sources that negatively impact 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

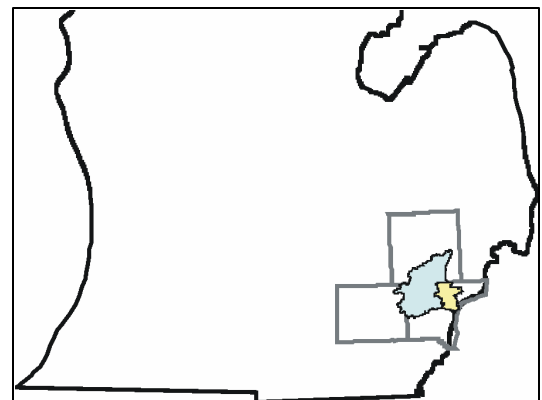


Figure 1-1: Location within Southeast Michigan

The Rouge River was once a vibrant waterway that supported a number of recreational uses and a broad range of fish and wildlife species. When Henry Ford chose to locate his home (The Ford Estate) along the Rouge River, in Dearborn, it was a farming community. At the same time, further down stream, Ford was building what would be the largest manufacturing complex in the world – The Ford Rouge Complex. These and other attributes attracted a large number of people and businesses to the area, which ultimately made the Rouge River Watershed the most, populated and 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 Main 3-4 Subwatershed is located in the eastern, most highly urbanized area of the watershed. The high population density of the watershed has placed the Rouge River under a great deal of stress. The Rouge River is now a documented source of significant pollution to the Great Lakes system.

*These same residents have been asked to pay the tremendous cost of combined sewer overflow (CSO) and sanitary sewer overflow (SSO) control. In return for the tremendous investment they are asking for a river that provides recreational opportunities for their children.*



*Example of massive flooding*

The Main 3-4 has experienced massive floods, tremendous pollutant spills, dozens of combined sewer overflows and a plethora of other environmental sins. Still, the residents of the Main 3-4 want a useable river. They have seen other communities use their riverfronts as a development magnet. They wonder why the Rouge River continues to be abused. These same residents have been asked to pay the tremendous cost of combined sewer overflow (CSO) and sanitary sewer overflow (SSO) control. In return for the tremendous investment they are asking for a river that provides recreational opportunities for their children.

## 1.1 PURPOSE

This Main 3-4 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 3-4 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 wet weather 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



*Concrete channel*

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. Since most of the large industrial and municipal wastewater treatment plant discharges were either in compliance or under corrective action plans, the RAP placed the major emphasis for corrective actions on CSOs and storm water discharges. At the time, the full cost of 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 Remedial Action Plan 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., CSOs) 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.

In the Main 3-4 subwatershed, several significant CSOs have been controlled at tremendous expense to the communities. Under the coordination of the Wayne County Department of Environment, several CSO retention/treatment basins were constructed in the Main 3-4:

- Hubbell Southfield
- Puritan/Fenkell
- 7 Mile
- River Rouge

In addition to providing several million dollars in grants to communities to help separate sewers and/or construct retention basins to address 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 were analyzed 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. Contaminated storm water discharges, sanitary sewer overflows, illicit discharges, failing septic systems, excessive run-off from developed areas, bank erosion, construction activities and a number of other sources and activities were degrading the 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 with respect to the City of Detroit Wastewater Treatment Plant and collection system and the suburban customers of the Detroit Water and Sewage 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. Through this initial involvement, the federal court has continued to play an active role in the restoration of the Rouge River Watershed.

In the early 1990s, under the oversight of the federal court, the MDEQ facilitated a resolution to the state-directed correction of CSOs that resulted in a phased approach in which the responsible local agencies would be allowed to demonstrate various alternatives to capture and treat these CSO discharges, or eliminate them through sewer separation projects.

With early reports from the Rouge Project indicating 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 to solving these problems. In response to the court's concerns, a group of local agencies working within the Rouge Project, and the MDEQ, proposed a unique watershed-based approach 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 subsequently implemented by the MDEQ through adoption of the voluntary watershed-based General Storm Water Permit in 1997.

## 1.6 VOLUNTARY GENERAL STORM WATER PERMIT

This unique regulatory approach requires the formation of subwatershed groups where communities and other public agencies work cooperatively to develop and implement plans to address sources of pollution.

The permit requires the subwatershed communities to work cooperatively to draft a subwatershed plan. This document fulfills that requirement for the Main 3-4 communities. After the plan is adopted and submitted to the MDEQ, each public agency must submit a Storm Water Pollution Prevention Initiative (SWPPI) to the MDEQ 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 apply for a permit to discharge storm water by March of 2003. The U.S. EPA has committed to accepting the Michigan watershed-based general permit for at least the first permitting round under the federal Phase 2 storm water program.

## 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 3-4 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 3-4 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 and 4-1
3. List of known or suspected pollutants	Tables 3-1 and 4-1
4. List of potential causes for each known and suspected pollutant	Tables 3-1 and 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 and 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, 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, 4.4, Table 4-2, 4.4.1, 4.4.1.2 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