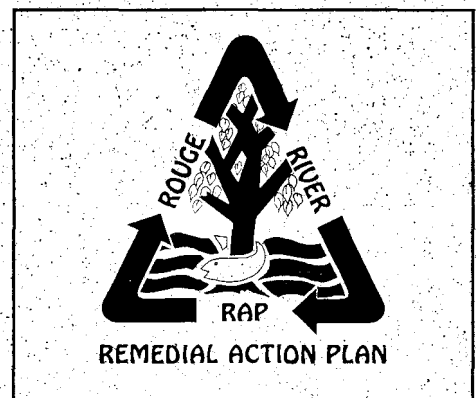


ROUGE RIVER REMEDIAL ACTION PLAN



ANNUAL PROGRESS REPORT 1992

This report is the result of contributions from many communities, agencies, and individuals.

Primary Michigan Department of Natural Resources staff on the project were Cathy Bean and Roy Schrameck.

Primary SEMCOG staff were Alex Bourgeau and Carla Davidson.



ROUGE RIVER
REMEDIAL ACTION PLAN
ANNUAL PROGRESS REPORT

1992

This first annual progress report was produced by the Southeast Michigan Council of Governments through a grant from the U.S. Environmental Protection Agency through the Michigan Department of Natural Resources.

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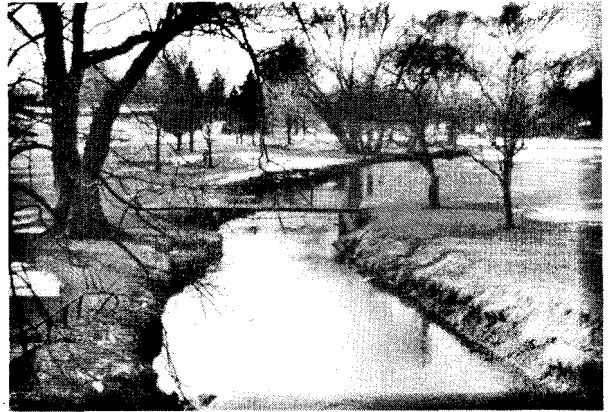
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FACTS ABOUT THE ROUGE RIVER:

The Rouge River flows through Detroit's northern and western suburbs and empties into the Detroit River at Zug Island in Detroit.

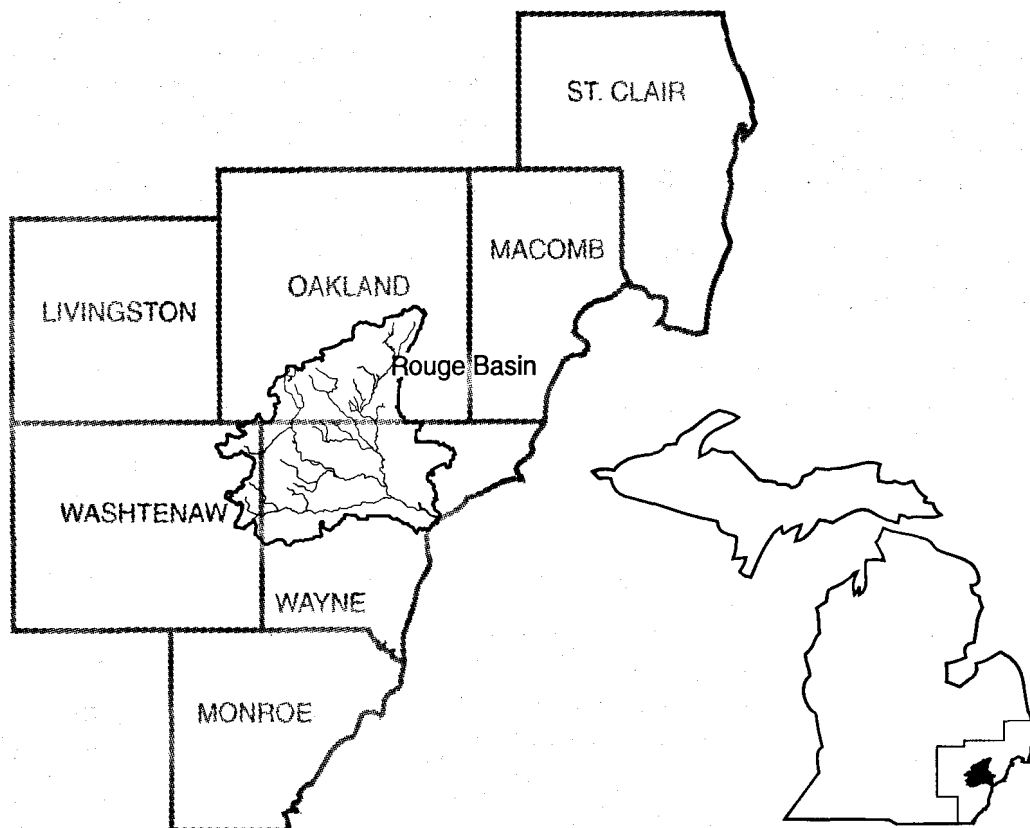
The River:

- is 125 miles in length with four principal branches: the Main, Upper, Middle and Lower
- contains more than 400 lakes and ponds
- has more than 50 miles of parks adjacent to the river
- is home to many fish species including an endangered fish known as the Redside Dace

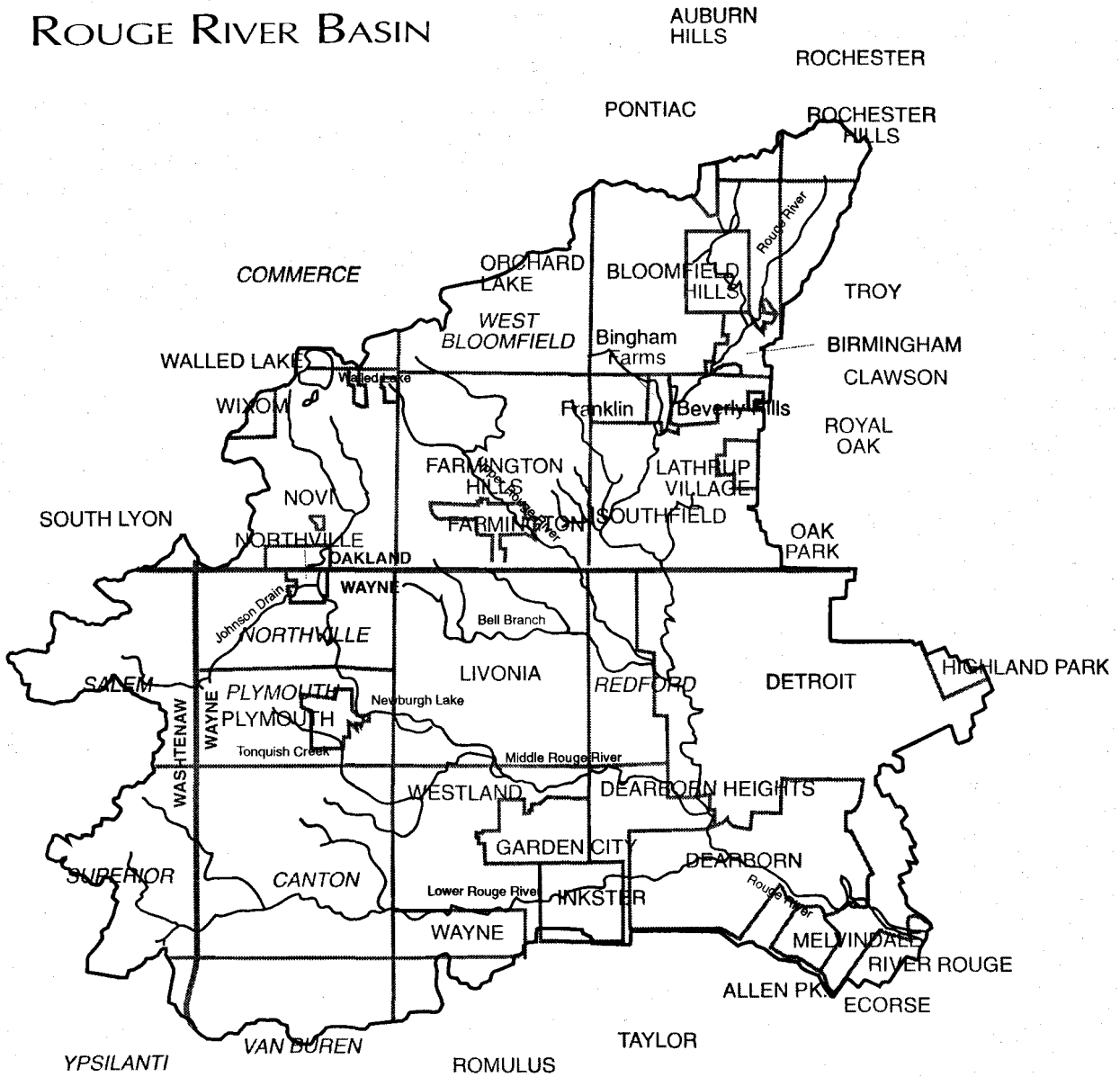


The Basin:

- covers 438 square miles and is inhabited by more than 1.5 million people in three counties
- is 50% developed for residential, commercial, or industrial land use
- is the most urbanized and densely populated watershed in Michigan



ROUGE RIVER BASIN





INTRODUCTION

"The Rouge Remedial Action Plan broke new ground using a multi-stakeholder process to address problems throughout the entire watershed. The organizations and institutions involved in the RAP have been instrumental in getting broad-based support for necessary remedial and preventive actions. The Rouge River RAP continues to be a model for institutional cooperation throughout the Great Lakes Basin."

John Hartig, Wayne State University

INTRODUCTION

The International Joint Commission (IJC), a United States and Canadian binational organization, has identified the Rouge River as one of the 43 worst pollution "hot spots" (known as Areas of Concern or AOCs) in the Great Lakes Basin. According to the United States-Canada Great Lakes Water Quality Agreement, a cleanup plan (Remedial Action Plan or RAP) is to be developed for each of these 43 AOCs.

The Rouge River RAP, the result of 25 years of planning, was completed in 1989 and defines an ambitious 20-year program of actions needed to protect public health and make substantial progress toward full clean up of the river. The RAP provides an effective means of ensuring accountability, tracking progress and resolving conflicts in a comprehensive manner so that the river can be restored. The capital cost for full implementation of the RAP is estimated at over \$900 million. For background information about the RAP, see Appendix A of this document.



Since the RAP document was finalized in 1989, substantial progress has been made towards implementing its recommendations and improving water quality. This document, the first Rouge River RAP Annual Progress Report, describes these implementation activities. Many resources were used to develop this report including the responses received from a recent survey of all communities, agencies and interest groups in the Rouge River basin.



RAP PROGRESS

"The Rouge River is Our river and we are its caretakers. We have all been part of the problem, and now we must all be part of the solution."

Cathy Bean, DNR Rouge RAP Coordinator

RAP PROGRESS



For planning purposes, the RAP divides the watershed into 11 subbasins. The RAP identifies various pollution problems within the basin, recommends remedial actions to alleviate the problems, and identifies those parties responsible for implementation. Since the RAP was finalized, many of these actions have been implemented, resulting in a noticeable improvement to the river. This document has been organized to help the reader understand the some of the specific RAP recommendations that have been addressed and the remedial actions that have implemented.

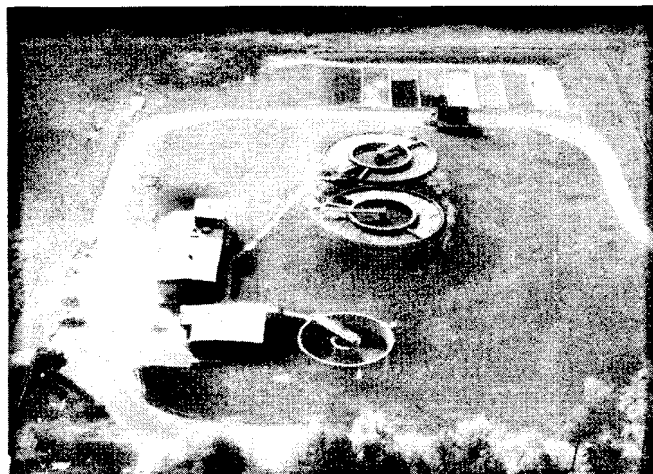
RAP Finding: Continuous discharges of municipal sewage and industrial process wastewater are a significant source of pollutants to the river.

Discharges from municipal wastewater treatment plants and industrial activities are considered point sources of pollution in that they enter the river from a discrete point (e.g. a pipe). In addition, these point sources discharge continuously, a characteristic distinguishing them from other types of point sources which discharge intermittently – such as the combined sewer overflows and sanitary sewer bypasses that will be discussed later in this report.

Actions:

Under federal law it is **illegal** to discharge wastewater to surface waters without a National Pollutant Discharge Elimination System (NPDES) permit. The DNR administers the NPDES permit program in Michigan. Activities under this program include:

- Currently, 32 NPDES permits for continuous discharges are being administered by the DNR in the Rouge River basin, with each requiring specific types of controls and/or treatment for discharges to the river. Nearly half of these facilities discharge noncontact cooling water (noncontaminated water) and/or stormwater runoff exclusively.



D In April 1992, the DNR surveyed each of the municipal, industrial and commercial facilities that discharge treated wastewater directly to the Rouge River. The survey was conducted to determine if any of these facilities had made changes to their operations, beyond those required in their permit, that had resulted in improvement to the quality of the Rouge River.

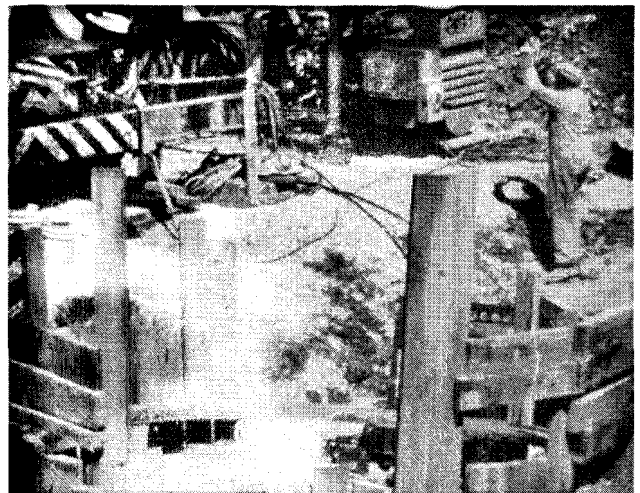
Survey results indicated that two facilities, IPMC and Michigan Bell, have eliminated their discharges to the Rouge River and are now discharging to a sanitary sewer system. Marathon Oil Co. in Detroit has added support material to the river bank to stabilize it and reduce erosion. Hygrade Foods has built containment around their oil storage tanks and moved their drum storage area indoors to prevent spills to the storm sewer. Rouge Steel Company has increased the amount of process water it recycles, thus decreasing the amount of treated wastewater that needs to be discharged. The Walled Lake/Novi Wastewater Treatment Plant has been upgraded recently to allow for more capacity within the plant as well as the addition of a dechlorination system to reduce the amount of chlorine discharged.

A complete list of permitted dischargers to the Rouge River and their status can be found in Appendix B. Please note that the list includes both those permittees identified in the RAP and those added since RAP completion, as well as some that no longer discharge to the river.

Most industries in the Rouge Basin do not discharge to the Rouge River directly. Rather, they discharge into the Detroit Water and Sewerage Department's (DWSD) sewer collection system. These discharges are then carried to DWSD's wastewater treatment plant where they are treated and then discharged to the Detroit River. Because the plant is not designed to treat some of the pollutants coming from these industries, DWSD is required by their NPDES permit to administer an Industrial Pretreatment Program (IPP). The permit requires DWSD to ensure that industries reduce the amount of pollution in their discharges to permitted levels before it enters the system. DWSD is in the process of strengthening their IPP including a program to identify and eliminate sources of PCBs and mercury to the system.

RAP Finding: Inadequate sewer capacity causes raw sanitary sewage to be directly discharged into the river under certain wet weather conditions.

Some areas of the Rouge Basin are served by separate sanitary and storm sewer systems. The RAP identified problems of inadequate capacity in many of the separate sanitary systems in the basin. Although the pipes are separate, stormwater can enter a sanitary system through cracks in the sewer lines and direct connections such as downspouts and footing drains. As a result, certain wet weather conditions can cause the system to become overburdened in



some of these locations. In order to prevent the sewage from backing up into basements and businesses during these conditions, sanitary sewage is directly discharged into the river by some basin communities during wet weather.

Actions:

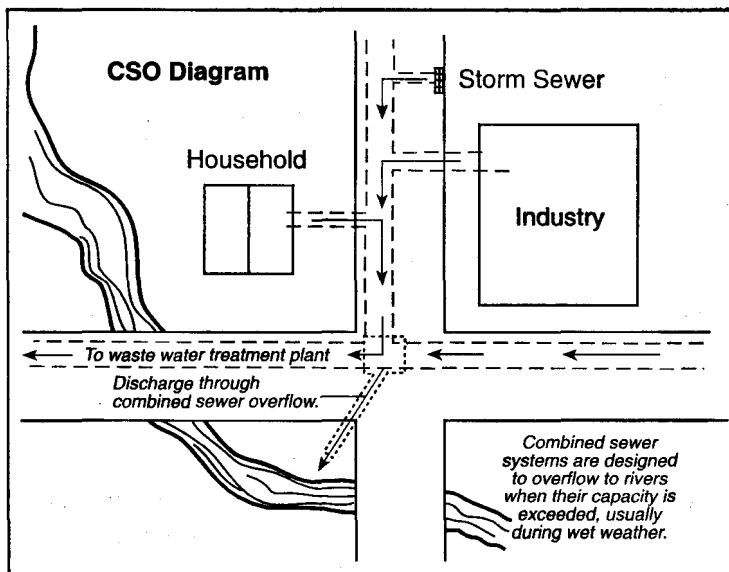
Between 1988 and 1991, funding for over \$500 million in sanitary sewer improvements was appropriated. Among other benefits, the improvements will eliminate direct discharges of sewage to the river during wet weather. Some of these sewer projects include:

- The City of Detroit's \$115 million Pump Station 2A project is 60% finished and is expected to be completed by October 1993. The project involves the construction of a new pump station and improved treatment facilities. This project will allow greater control over flows in the system, thereby eliminating several sanitary sewage overflows in tributary areas (see First Hamilton Relief Outlet project below).
- Oakland County's \$55 million Evergreen/Farmington is a project involving the participation and cooperation of 16 communities and is nearing its completion date of July 1993. This project provides (1) additional sewer capacity for these 16 communities, (2) elimination four raw sewage bypasses, and (3) installation of equipment to identify and correct future excess sewage flow problems.
- Wayne County's \$160 million North Huron Valley/Rouge Valley project has been completed. This project has eliminated sanitary sewer overflows by providing adequate sewer capacity for 14 communities within the basin. The project included construction of new sewer lines, as well as rehabilitation of some older existing sewers.
- Canton, Northville and Plymouth Townships (which make up the Western Townships Utility Authority or WTUA) are spending over \$66 million for a sewer correction project scheduled to be completed by February 1994. The project will eliminate sanitary sewer overflows through the construction of sewer lines, basins and pump stations for the transport of the sewage to the Ypsilanti Communities Utility Authority (YCUA) wastewater treatment plant. Sanitary sewage from these communities is presently being treated by the DWSD facility.
- The \$33 million City of Detroit/Oakland County/Wayne County First Hamilton Relief Outlet is operationally complete. This project provides additional sanitary sewer capacity for the Evergreen-Farmington Sanitary District by rerouting flows from the Southfield sewer to the First Hamilton Sewer. Success of this project is dependent upon the completion of the Pump Station 2A project noted above.

In addition, Dearborn, Dearborn Heights, Detroit, Northville, Novi, Southfield, Ypsilanti, Canton and Superior Townships all report ongoing sewer system maintenance and improvement programs.

RAP Finding: The discharge of raw sewage into the Rouge River from the 168 combined sewer overflows (CSOs) creates serious public health and environmental problems.

In many of Michigan's older urban areas, stormwater, sanitary sewage and industrial wastewater are transported to municipal wastewater treatment plants (WWTPs) through a common sewer system. These combined systems are designed to overflow directly into local rivers when they become overburdened during certain wet weather events to prevent sewage from backing up into homes and businesses. The RAP estimates that 7.8 billion gallons of combined sewage is discharged into the river annually via these CSOs. Just as with the sanitary sewer bypasses noted earlier, these discharges create serious environmental and public health concerns.



Actions:

- By separating sanitary and storm sewer systems, 12 CSOs have been eliminated in Farmington, Farmington Hills and Lathrup Village.
- The ongoing \$500 million in physical sanitary sewer improvement projects noted earlier benefit combined portions of the sewer system as well by providing additional short-term capacity for some wet weather flows.
- Detroit has begun a \$15.5 million project to study and design structures for maximizing its in-system storage capacity during wet weather.
- Just as is the case with continuous discharges, CSOs are illegal without NPDES permits. Draft CSO permits for communities in the Rouge River Basin were issued in 1989. All of the communities, however, contested the permits through administrative and/or judicial processes. DNR and basin communities with CSOs have taken part in a unique, basin-wide approach to resolving the disputes over the permits. Joint negotiations between all permittees and the DNR have resulted in integrated, effective, and innovative permits which were approved by the WRC in August 1992. This approach will adhere to the RAP schedule of protecting public health and making reasonable progress toward reaching water quality standards by the year 2005.
- The Rouge River National Wet Weather Demonstration Project (see Section III - Future Activities) administered by Wayne County will be an integral component of this basin-wide approach to the CSO problem. Among other things, the project work/plan lays out a framework for determining the design and financing of CSO control facilities required to comply with the new CSO permits.

RAP Finding: Improper connection of sanitary sewer lines to stormwater systems is a significant problem in the basin.

In areas served by separate sewers, sanitary sewers can be improperly connected to storm sewers resulting in illegal discharges of municipal and industrial wastes to the river.

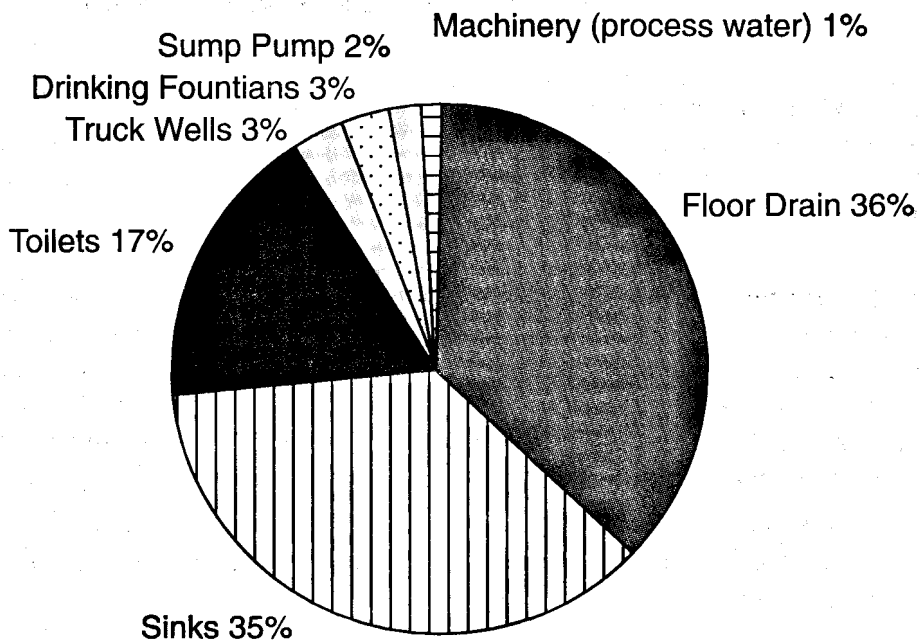
Actions:

Since 1987, Wayne County's Environmental Health Division has worked with county municipalities to administer a highly effective program for identifying and correcting improper sewer connections. Once the illicit connections and other potential violations are identified, Wayne County refers them to local officials for enforcement.

Highlights of this program include:

- Of the 1,123 facilities surveyed, 111 (about 10%) had illicit connections to storm sewers, including discharges from commercial and industrial facilities and all of the sewage from a 55-room hotel.
- Many facilities had more than one violation, resulting in a total of 342 illicit connections being discovered. Table 1 provides a breakdown of these violations.
- It is estimated that more than 110,000 pounds per year of pollutants are being diverted from the Rouge River as a result of this program

**Table 1:
Breakdown of improper connections found by
the Wayne County Health Department between 1987 and 1992.**



Source: Wayne County Environmental Health Division, 1992.

RAP Finding: Nonpoint sources are a major cause of pollution in eight of 11 Rouge River subbasins, and a minor cause in the remaining three.

Nonpoint sources of pollution are those discharged from a widespread area or from a number of smaller sources such as runoff from: urban and agricultural areas, highways and roads, industrial stockpiles, old solid and hazardous waste landfills, and erosion from construction projects. Nonpoint source discharges differ from most point sources in that they are not continuous, and the amounts and types of pollutants are variable. This makes them difficult to assess and control.

Urban and rural runoff occur primarily during wet weather, when water moving over the surface picks up pollutants deposited from the atmosphere or derived from activities related to land use. Some stormwater is collected and routed through combined sewers, storm sewers, or industrial wastewater systems. It may also flow overland directly into river and streams. Table 2 provides a listing of some examples of nonpoint source pollution and the pollutants commonly associated with them.

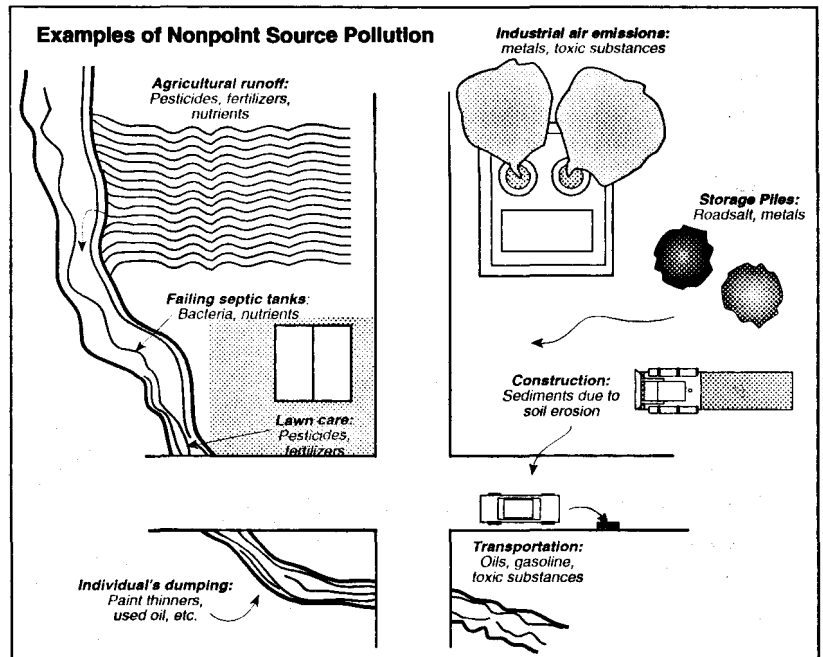


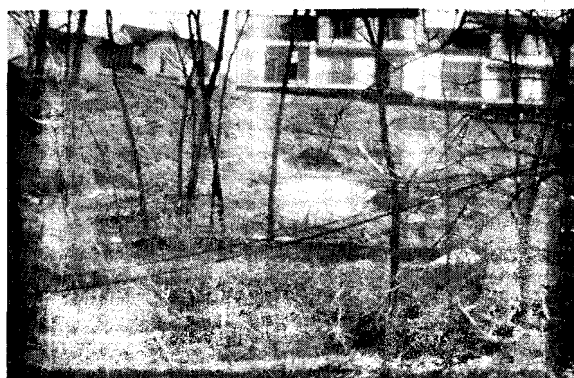
Table 2: Examples of nonpoint sources of pollution Source: DNR 1992

In the past, stormwater management efforts in the Rouge River Basin have generally been directed toward the control of flooding and nuisance conditions with incidental water quality benefits. Recently, stormwater management practices have begun to address water quality issues directly.

Actions:

- Stormwater permits are now required for many industrial facilities which collect stormwater in separate sewer systems. The DNR is charged with administering the stormwater permitting program in Michigan. The first phase of the program requires NPDES stormwater permits for certain types of municipal facilities (e.g. DPW yards) and private industrial activities throughout the basin. As a first step, permittees are required to undertake certain management practices to reduce the pollutants in their stormwater discharges.
- Six industrial facilities which have direct discharges to the Rouge River already control their stormwater discharges as required by their NPDES permits.

➤ A 1989 Southeast Michigan Council of Governments (SEMCOG) survey of basin communities indicated that 30% of the municipalities have a stormwater management plan. While most of these are flood control plans, some address water quality. For example, both the City of Novi and Canton Township indicated that their plans specifically address water quality in their response to the annual progress report survey.



➤ Two of the goals of the Rouge River National Wet Weather Demonstration Project (see Section III - Future Activities) will be to: (1) Determine the causes of nonpoint source pollution in certain areas of the basin and (2) Implement and compare the effectiveness of various methods of controlling this form of pollution.

➤ The United States Department of Agriculture Soil Conservation Service and local Soil Conservation Districts were involved in an \$111,000 project to develop and implement methods for reducing phosphorus pollution entering Lake Erie from the River Raisin and Lower Rouge River. The purpose of the project was to reduce nutrient loading from sediment, fertilizers and animal wastes, as well as reduce erosion and sediment deposition. Pollution control methods focused on both agricultural and urban land use practices and included 15,000 acres of conservation tillage, 500 acres of permanent vegetative cover, four sediment basins, and 100 acres of filter strips. Technical assistance was also provided by the Soil Conservation Service to the participating farmers..

This project, which began on October 1, 1990, exceeded its goal of reducing phosphorus loading to Lake Erie by 11.1 tons by its completion on September 30, 1992. Copies of the final report can be obtained from the Surface Water Quality Division of the DNR.

➤ The DNR responds to many citizen reports of pollution spills and illegal discharges. By law, parties responsible for creating the spill are required to perform any necessary clean up and provide the DNR with a plan to prevent any future spills. For example, there were a total of 113 complaints and pollution spill reports received in the DNR's Southeast Michigan District in 1992 that directly affected the Rouge River and its tributaries. Complaints included spills of oil, fuel, solvents, sewage, and animal wastes. Citizens also reported soil erosion problems. This cooperation between the DNR and citizens is a valuable aid in detecting and eliminating sources of pollution within the basin.

➤ There are over 300 sites within the Rouge River Basin that are on Michigan's Act 307 list of sites of environmental contamination. Three of these sites are categorized as having a direct impact on the river. Many of these sites do not rank high enough on the 307 list to receive funding for cleanup at the present time. Some of these sites have minor, localized contamination that does not affect ground or surface waters. Sites of environmental contamination are still being found within the basin as investigations continue.

- Disposal of such common hazardous materials as used oil and paint into street drains is a common practice. Many people do not realize that many of these drains empty directly into the nearest stream. To address this problem, many basin communities, interest groups and private businesses provide for the collection of household hazardous waste. The proper disposal of items such as paint thinner, pesticides, and used oil assists in controlling this source of pollution to the Rouge River. The Friends of the Rouge have recently purchased stencils that can be used to paint a warning on those storm sewers that may have direct discharges to nearby streams. Please contact the Friends of the Rouge for further information (see Appendix D).






RAP Finding: Variable river flows, log jams and debris contribute to degraded fish habitat, aesthetics and recreational opportunities.

Actions:

- Since 1986, the Friends of the Rouge have organized an annual clean up of the Rouge River, known as the "Rouge Rescue". Over the past seven years, nearly 15,000 volunteers have removed over 19,000 cubic yards of debris, including approximately 500 log jams. In 1992 approximately 30 cleanup sites were located throughout the Rouge River watershed with 20 communities participating. Contact the Friends of the Rouge for more information (see Appendix D).
- The Wayne County Parks and Recreation Department is using more than \$600,000 in state and local funds to begin implementation of their Middle Rouge Parkway Improvement Plan. The plan calls for improvements which take advantage of parkway qualities, improve public access, and enhance and preserve historical and natural resources. Planned actions focus on the Middle Rouge River, centering on Nankin, Wilcox, Newburgh and Phoenix Lakes. The initial implementation activities are occurring at Newburgh Lake.





- The City of Southfield enhanced the river with an innovative \$8,000 project creating a half-mile of fish habitat. The project utilized the efforts of many volunteers and received the 1988 Clean Waters Award from the Michigan Outdoor Writers Association. Southfield promotes fishing in this area by annually planting small-mouth bass and rainbow trout, and then sponsoring a fishing derby. They have also constructed a public access trail along the river to encourage recreational use.

-  In 1992, the University of Michigan-Dearborn sponsored a site during the "Rouge Rescue" that focused on making nest boxes for wood ducks, screech owls, house wrens, bluebirds, and the big brown bat at the university's environmental study area. These boxes have subsequently been mounted along the Rouge River and within its floodplain. More than two dozen people participated in the construction and repair of over 50 nest boxes.
-  The City of Novi conducted a wetland study which began in August 1986. The study was conducted to determine, through field investigation, the accuracy of Novi's official wetlands and watercourse map. It also compiled extensive data on individual wetlands (including a list of species at each site) to aid in carrying out the intent of the wetlands ordinance.
-  Canton Township created a wetland area adjacent to Willow Creek to improve water quality and flood control.
-  Some of the ongoing sewer improvement projects noted earlier include resource improvement components. For example, construction of Wayne County's North Huron Valley/Rouge Valley project included improvements to river flow through debris removal, slope stabilization, tree plantings and sheetpiling to mitigate erosion problems.
-  At least 20 communities conduct regular cleanups of the river, removing logjams and other debris, both as part of the Rouge Rescue and on their own throughout the year. Detroit, for example, removes debris several times each year.

RAP Finding: Public information and education results in a better informed citizenry and public officials who are more likely to support the projects needed to clean up the river.

Actions:

-  Every spring since 1987, the University of Michigan, through the Friends of the Rouge, teaches middle and high school students from 48 Rouge River Basin schools about water quality and steps they can take to help clean up the Rouge River. The students test the water quality of the Rouge River near their school and compare results with students in other areas of the basin. Students are also able to share their knowledge and concerns with students and teachers from 125 countries on six continents through computer conferences, newsletters, and sister-school partnerships. Further information about this project can be obtained through the Friends of the Rouge (see Appendix D).
-  In the spring of 1992, the DNR sponsored a logo contest for local high school students to design a logo to symbolize the Rouge River RAP. The



winning logo, shown on the cover of this report, was designed by Amy Mintz of West Bloomfield High School and is the official symbol of the Rouge River RAP.

- Canton Twp., Van Buren Township, Southfield, Dearborn, Detroit, Novi, and Oakland and Wayne Counties are involved in such activities as fund raising, development of videos, information spots on local cable stations and educational events to help heighten public awareness of the Rouge River.
- The City of Detroit has hosted an annual celebrity basketball game for the past five years to benefit the Friends of the Rouge. Last year's game raised \$9,200. Over 600 people attended the game which was shown on a local cable television channel.
- Through presentations, workshops, informational materials and telephone contacts, the Friends of the Rouge, DNR, SEMCOG, Rouge River Watershed Council and Wayne County provide information to the public about the Rouge River on a regular basis. Also, SEMCOG facilitates the public participation program for the Rouge RAP which includes RAP committees, workshops, and informational slideshows about the Rouge River.

RAP Finding: Additional data collection and monitoring efforts are needed to track trends, pinpoint pollution sources, evaluate toxic impacts, plan remedial projects, and evaluate progress toward meeting water quality goals.

The RAP identified the need for additional data for certain contaminants and their sources (e.g. nonpoint source pollution and CSO discharges). In addition data needs are constantly changing as additional problems are identified and as remedial projects are completed. Also additional data collection and monitoring are often needed to better define the extent of existing problems.

Actions:

- The DNR is studying Johnson Creek ("Drain") to evaluate the creek's ability to support a reintroduction of trout. The DNR planted a total of 4,500 yearling brown trout at five sites in 1992.
- DNR biologists have found a threatened fish species, the Redside Dace, in Seeley Drain, Johnson Creek ("Drain"), and the Upper Rouge River. The discovery of this species heightens DNR concern for protection of these areas from the ever increasing impacts from urbanization.
- A 1990 study by the DNR indicated that toxicity of the Rouge River water column is not widespread or continuous. Rather, toxic impacts of water borne pollutants on aquatic life occur in certain areas of the river and appear to be related to wet weather events.



- The Rouge River Archive at Wayne State University contains the most comprehensive collection of Rouge River historical and RAP-related data and information. The University maintains and updates this archive on an ongoing basis. For more information, contact Wayne State's Civil Engineering Department (see Appendix D).
- As follow-up on an earlier survey, the DNR conducted a sediment survey of the Rouge River basin to determine the degree, location, and possible sources of sediment contaminants such as PCBs and metals. This study revealed that overall levels of PCBs and metals in sediments have decreased in recent years.

Both the coordinated monitoring of bacterial water quality by Wayne, Washtenaw and Oakland Counties and studies of toxic pollutants by the DNR seem to indicate that the most severe impacts from these pollutants occur during and after wet weather events. These studies further substantiate the RAP findings that CSOs and stormwater runoff are some of the most significant sources of pollution for the Rouge River.



FUTURE ACTIVITIES

"The Rouge RAP has become the model that has laid the foundation for assembling the items necessary to restore a watershed to meet the goals of the Clean Water Act. To that end, the federal government, by funding the Wayne County National Wet Weather Demonstration Project, has designated the Rouge River basin as the laboratory to do the nations' research in the area of CSO and stormwater discharges . . . a vital part of restoring surface water quality across the country."

James Murray, Director Wayne County Public Works

FUTURE ACTIVITIES

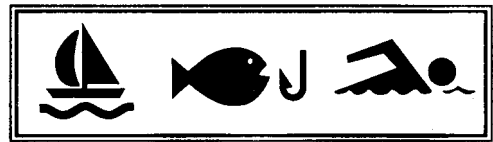


WHAT ACTIVITIES WILL TAKE PLACE IN THE FUTURE TO CONTINUE IMPLEMENTATION OF THE ROUGE RIVER RAP?

Rouge River National Wet Weather Demonstration Project

In addition to activities noted previously in this document, \$47 million in federal funds has been appropriated and work has begun on the Rouge River National Wet Weather Demonstration Project and the Urban Nonpoint Pollution Control Demonstration Project. This funding, along with local matching dollars, will be used to demonstrate and compare the benefits of both CSO reduction technologies and urban runoff control strategies. The overall intent of the program is to determine a method of selecting the most cost-effective controls for wet weather pollution sources while assuring maximum use of the water resource.






THE ROUGE RIVER PROJECT A WORLD CLASS EFFORT



BRINGING OUR RIVER BACK TO LIFE

Full-scale construction of selected CSO retention basins and implementation of nonpoint source reduction strategies will take place as part of an ongoing program.

The project is being managed by Wayne County Division of Public Works and includes the following components:

-  A water and sediment quality-testing program;
-  A computerized geographical information system (GIS) to collect, organize, and analyze data on basin characteristics and to provide a comprehensive data base for future decision making;
-  Development, implementation, and testing of "best management practices" to control point and non-point sources of pollution;
-  Design and construction of CSO treatment facilities;
-  A comprehensive public information program; and,

D Study and development of effective financial and institutional arrangements.

An additional \$82 million in federal funds has been appropriated for this project. It is expected that the primary use of this money will be for construction of wet weather pollution control facilities.

RAP Update

Due to the fact that the Rouge River RAP was completed in 1989, the DNR is currently reviewing the RAP in order to determine the need and extent for updating the document. The RAP is being evaluated for possible concerns it does not presently address, incorporation of new data and information, and consideration of implementation activities that have already occurred.



A PERSPECTIVE ON THE RAP

"The Rouge is a forgotten river to many. Living on a tributary the last seven years has shown me a river of spawning fish, wading birds, and hundreds of other critters who call this river home. It is a river, without a doubt, worth fighting to save."

Joe Derek, naturalist/outdoor educator

A PERSPECTIVE ON THE RAP

What are the benefits of the RAP?

Because the RAP is the only comprehensive source in the basin for water quality data, information, and analysis, it serves as a vital reference for basin communities and individuals. For example, community planners and decision makers use it to analyze and implement projects for which they are responsible and to understand how their activities relate to the rest of the watershed. RAP goals have been adopted by many projects and it has served as a guide in setting priorities.

In addition, the RAP and related activities serve to increase awareness about the Rouge River and act as a stimulus for communities and individuals to do their part in cleaning up and protecting the water resource.



Is implementation of the RAP on schedule?

Generally, implementation of RAP recommendations is on schedule. This is particularly true for the sanitary sewer projects and CSO recommendations where NPDES permits require timelines consistent with the schedules detailed in the RAP. Other activities such as the improper sewer connections project, log and debris removal, the Middle Rouge recreation project, high school water quality monitoring, and maintenance of the Rouge archives are all ongoing remedial actions being implemented. Surveys of the Middle Rouge (for PCB contamination) and Evans Ditch have been completed. Several other recommendations are in the process of being addressed as adequate funding is allocated.



What problems have there been implementing RAP recommendations?

Funding the recommended actions was noted over and over again as the single biggest obstacle to implementation. The cost of implementing the RAP was originally estimated at \$900 million in 1989. The costs have undoubtedly surpassed this amount and, due to cutbacks in federal and state grant and loan programs, much of the financial burden has fallen on local units of government.

An additional obstacle that was noted in the survey responses was the difficulty related to reaching agreement on individual permits within the basin. An example cited was CSO permitting and the differences in the interpretation of both the RAP and its relationship to permits.

How should the RAP be updated?

Several suggestions were identified through the survey:

- Although they are covered indirectly through sanitary sewer, CSO and nonpoint source recommendations, there is a need to address toxic pollutant problems more directly by identifying the problems, their causes and additional remedial and preventive measures necessary to correct them.
- Because of changes in funding for various loan and grant programs, the existing finance strategy needs to be reviewed, and a method of resolving funding problems needs to be developed.
- The RAP needs to be coordinated with the Wayne County National Wet Weather Demonstration Project in order to avoid duplication of effort and to recognize any recommendations implemented by the project, new data and information that is identified, and development of next steps in the clean up of the river.
- While the RAP currently focuses on end-of-the-pipe controls, updates should consider pollution prevention activities as alternatives to end-of-pipe controls and incorporate them when appropriate.
- The resource improvement and habitat portion of the RAP should be strengthened and revised to include projects that have been implemented.

How To Find Out More About the Rouge River RAP

For more information about the RAP and/or to receive a copy of the Rouge River RAP Annual Progress Report contact: Carla Davidson, SEMCOG, 660 Plaza Drive—Suite 1900, Detroit Michigan 48226 (313) 961-4266 or Cathy Bean, DNR Southeast Michigan District Headquarters, Surface Water Quality Division, 38980 Seven Mile Road, Livonia, MI 48152 (313) 953-1441. Also, see Appendix D for a list of contacts for the Rouge RAP.

Thanks go to the following who provided information for this report:

Van Buren Township, Superior Township, Northville Township, Canton Township, City of Dearborn, City of Detroit, City of Southfield, City of Novi, City of Dearborn Heights, Village of Bingham Farms, Wayne County, Oakland County, Friends of the Rouge, Rouge River Watershed Council, the International Joint Commission, U.S. Army Corps of Engineers, Amoco Oil Company, General Motors Corporation (inland Fisher-Guide and Delco Chassis Divisions), Hygrade Foods, IPMC DNC, Marathon Oil Company, Marblehead Lime Company, Michigan Bell, Plymouth Industrial Center, Rouge Steel Company, Waste Management Company of North America, and John Hartig of Wayne State University.



APPENDICES

APPENDIX A



BACKGROUND ON THE ROUGE RIVER RAP

Why is the Rouge River basin considered a pollution "hotspot"?

The Rouge River is polluted by excessive levels of bacteria, heavy metals, organic chemicals, and other substances such as polychlorinated biphenyls (PCBs). This pollution has reduced the quality of the river's water and, thereby, diminished the extent to which the water can be used by humans, aquatic organisms, and wildlife.

What are the sources of pollution?

The pollutants which impair the use of the river originate from a variety of sources. Although the sources of pollution vary throughout the Rouge River basin, they are primarily the result of activities related to urban development. The basin is the most urbanized and densely populated watershed in Michigan. Combined sewer overflows (CSOs) are a major source of pollution. Other sources include separate and combined sewer systems, storm water discharges, nonpoint sources, and municipal and industrial discharges.

Who developed the RAP?

On October 1, 1985, the Michigan Water Resources Commission (WRC) called for the development of the RAP. The Michigan Department of Natural Resources (MDNR) was given overall responsibility for development of the RAP. MDNR contracted with the Southeast Michigan Council of Governments (SEMCOG) to help write the RAP and develop a public participation program.

At the heart of the RAP's public participation program are two oversight committees, the Rouge River Basin Committee and Executive Steering Committee. There were also eight technical committees formed to guide the planning process. As a result of this program, development and implementation of the RAP has truly been a basin-wide effort. The 48 Rouge Basin communities, federal and state agencies, business and industry, interest groups and private citizens have participated throughout the process.

What are the goals of the RAP?

A major conclusion of the RAP was that full restoration of the Rouge River by the year 2005, as called for by the WRC Strategy, could not be achieved. While full restoration remains a long-term goal, the RAP's primary short-term goal is to protect public health. In addition to 27 specific goals, the primary goals of the RAP are:

1. To protect public health by the elimination of discharges of untreated sewage and the control of discharges of toxic substances to the Rouge River.
2. As a long-term goal, to meet designated uses through the eventual achievement of Water Quality Standards to the greatest extent practicable.

How does the RAP propose to clean up the Rouge?

The RAP provides a comprehensive approach for dealing with pollution problems in the basin in a coordinated manner. Not only does the RAP identify problems, but it also recommends pollution abatement strategies for each pollution source (e.g. combined sewer overflows, nonpoint source pollution, etc.). These strategies include identification of specific programs or projects needed, their estimated costs, identification of parties responsible for implementation, and implementation schedules.

The RAP calls for a phased approach to solving the Rouge's problems and can generally be described as follows:

Phase I, 1989 to 1993.

- Construct separate sanitary sewer improvement projects.
- Monitor and optimize the existing combined sewer system.
- Conduct detailed local planning for CSO controls.
- Implement programs to remove improper connections to storm drains and prepare local stormwater management plans.
- Study and implement resource improvements, such as log jam removal and habitat enhancement.
- Control industrial pollutants at the source through NPDES permits for direct discharges and through source controls for discharges to the sewer system.
- Continue regular monitoring and conduct special intensive studies in identified problem areas.
- Implement financing methods at the local, state, and federal levels to pay for improvements.
- Issue discharge permits that specify requirements for CSOs and stormwater discharges.

Phase II, 1994-2005.

- Implement CSO improvements that will eliminate untreated raw sewage discharges. Meet the minimum objective of point-by-point control with settling, skimming, and disinfection for all overflows.
- Complete implementation of improper connections program and other programs that address problems identified in special studies.
- Implement further stormwater controls as needed based on monitoring and the stormwater management plans.

Phase III, after Phase II completion.

- Evaluate results of CSO controls and initiate planning and implementation of further improvements necessary to meet Water Quality Standards.
- Evaluate further needs for stormwater discharge controls and implement where needed to meet Water Quality Standards.

APPENDIX B:

PERMITTED MUNICIPAL AND INDUSTRIAL DISCHARGERS TO THE ROUGE RIVER.

Facility Name	Location	Status
Ameritech Services	Plymouth	Discharge Discontinued
Amoco Oil Co.	Livonia	Under Litigation
Amoco Oil Co.	River Rouge	Discharging
Amoco Oil Co.	Farmington Hills	Discharging
Amoco Oil Co.	Southfield	Under Construction
Amoco Oil Co.	West Bloomfield	Discharging
Browning Ferris Industries	Northville	Discharging
BMC Manufacturing	Plymouth	Discharging
Buckeye Pipeline	Plymouth	Discharging
Buckeye Pipeline	Wayne	Discharging
Detroit Coke Corporation	Detroit	Closed
Detroit Diesel	Detroit	Discharging
Dow Corning Corporation	Plymouth	Discharging
Eaton Corporation	Southfield	City Sewers
PIC Holdings (Evans Assets)	Plymouth	Discharging
Ford-Mich. Truck Plant	Wayne	Discharging
Ford Motor Company	Northville	Closed
Ford-Rouge Mfg. Complex	Dearborn	Discharging
Ford-Wayne Assembly Plant	Wayne	Discharging
GM - Power Train	Romulus	Discharging
GM - Delco Prod. Div.	Livonia	Discharging
GM - Inland Div. - Trim Plant	Livonia	Discharging
Heublein	Allen Park	City Sewers
Hygrade Food Products	Livonia	Discharge Discontinued
IPMC (Port Huron Paper)	Detroit	Discharging
Marathon Oil Company	Detroit	Discharge Discontinued
Marblehead Line Co.	River Rouge	Discharging
McLaren Engines	Livonia	City Sewers
Michcon	River Rouge	Discharge Discontinued
Mobile Oil Corporation	Dearborn Hts.	Discharging
Mobile Oil Corporation	Farmington Hills	Discharging
Norfolk & Western Railroad	Melvindale	Discharging
Oakland Co. Walled Lake/Novi Wastewater Treatment Plant	Novi	Discharging
Polymeric Protective Linings (B.F. Goodrich)	Livonia	Discharge Discontinued
Robert Bosch Corporation	Farmington Hills	Discharging
Rouge Steel Co.	Dearborn	Discharging

Rouge USX Corp.		
Double Eagle	Dearborn	Discharging
Shell Oil Co.	Detroit	Discharging
Solder Craft Inc.	Plymouth	Discharging
South Commerce		
Wastewater Treatment Plant	Walled Lake	Discharging
St. Marys Cement Co.	Detroit	Discharging
Unisys corporation	Plymouth	Discharging
VIP Car Wash	Dearborn Hts.	Discharge Discontinued

Source: DNR, 1992

Key

City Sewers

Discharge has been changed to the city sewers.

Closed

Facility is no longer in operation - no discharge to river.

Discharging

Presently discharging to the river.

Discharge Discontinued

Facility still in operation but permitted discharge discontinued.

Under Construction

Facility has permit but construction of treatment equipment has not been completed.

APPENDIX C

GLOSSARY OF ACRONYMS USED IN THIS REPORT

WWTP	Waste Water Treatment Plant
DWSD	Detroit Water & Sewage Department
DNR	Michigan Department of Natural Resources
SEMCOG	Southeast Michigan Council of Governments
IJC	International Joint Commission
NPDES	National Pollutant Discharge Elimination System
RAP	Remedial Action Plan
AOC	Area of Concern
IPP	Industrial Pretreatment Program
PCB	Polychlorinated biphenyl
CSO	Combined Sewer Overflow
WRC	Michigan Water Resources Commission

APPENDIX D

AGENCIES AND ORGANIZATIONS TO CONTACT FOR MORE INFORMATION

Department of Natural Resources: Cathy Bean, Rouge RAP Coordinator	(313) 953-1441
Friends of the Rouge: Jim Graham, Executive Director	(313) 961-4050
Rouge Program Office: Sue Carroll, Project Administrator	(313) 961-0700
Rouge River Archive: Tom Heidke, Associate Professor	(313) 577-3854
Rouge River Watershed Council: Steve Marshall, Chairperson	(313) 965-2526
SEMCOG: Carla Davidson, Environmental Planner	(313) 961-4266



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