

1998 Rouge River Remedial Action Plan Progress Report

“With the release of the Clean Water Action Plan earlier this year, the President reaffirmed our nation’s commitment to clean water. While there is an important federal role in this effort, it will not succeed without the support of state and local citizenry, working together to improve the health of the watersheds where they live. It is just this sort of commitment I see playing out in the Rouge River. Through the continued diligence of the people who live in the Rouge River Watershed, not only will we see the goals of the RAP achieved, but these efforts will serve as a model for the rest of the country.”

*David Ullrich, Regional Administrator
EPA Region 5*



Learning about the river

Figure 1: Rouge River Watershed Location in Michigan

Figure 2: Rouge River Watershed

Glossary

The following is a glossary of acronyms and abbreviations for this report to assist the reader in understanding this document:

AOC	Area of concern - IJC designated water body that significantly contributes to the pollution of the Great Lakes.
BMPs	Best Management Practices - Practices used to control pollution caused by storm water runoff.
CSO	Combined Sewer Overflow - concrete structure used to relieve high wastewater flows in combined sewer systems. CSO also signifies the wastewater discharge from CSOs.
CZMA	Coastal Zone Management Act
DOE	Department of Environment (Wayne County)
DWSD	Detroit Water & Sewerage Department
DPW	Department of Public Works
FOTR	Friends of the Rouge
GDRS	Greater Detroit Regional System (sewerage)
HFCC	Henry Ford Community College
HNPA	Holliday Nature Preserve Association
IJC	International Joint Commission - A United States and Canadian binational organization charged with water quality oversight in the boundary waters.
IPP	Industrial Pretreatment Program - state and federal program to monitor, permit, and control commercial and industrial discharges to the sanitary sewer system. This program is implemented by the wastewater control authority and monitored by the MDEQ.
LAMP	Lakewide Management Plan
MDA	Michigan Department of Agriculture
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality EAD - Environmental Assistance Division STD - Storage Tank Division SWQD - Surface Water Quality Division LWMD - Land and Water Management Division ERD - Environmental Response Division WMD - Waste Management Division
MDNR	Michigan Department of Natural Resources
MDOT	Michigan Department of Transportation
MESB	Michigan Environmental Science Board
MGD	Million Gallons per Day - unit of measurement for liquid flows (wastewater)
mg/l	Milligrams per liter – unit of measurement for concentrations of substances in liquids
MSU	Michigan State University
MWEA	Michigan Water Environment Association
NCCW	Noncontact Cooling Water - water used for cooling that does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.
NPDES	National Pollutant Discharge Elimination System - Name of the permit required for discharges to a surface water.
NPS	Nonpoint Source Pollution - A group of pollutants that originate from diverse, uncontrolled, sources and are often carried by storm water.
NRCS	Natural Resources Conservation Service (formerly the Soil Conservation Service).
NREPA	Natural Resources and Environmental Protection Act - Act 451 of 1994
OCDPW	Oakland County Department of Public Works
OCHD	Oakland County Health Department

OMOE	Ontario Ministry of the Environment
OSDS	On-site Sewage Disposal System(s)
PAHs	Polynuclear Aromatic Hydrocarbons - A class of toxic chemicals. Also called PNAs.
PCBs	Polychlorinated Biphenyls - A class of organic chemicals that was a commonly used additive for various types of oils.
PIPP	Pollution Incident Prevention Plan - A plan to prevent pollution of surface waters from facilities that store petroleum-based materials such as gasoline and other hazardous materials.
ppm	Parts per million - Unit of measurement for analytical data meaning one part of a contaminant in one million parts of water. Equivalent to mg/l.
ppb	Parts per billion - Unit of measurement for analytical data meaning one part contaminant in one billion parts of water. Equivalent to ug/l.
PPC	Project Performance Certification - process for ensuring that a project, such as a sewer system upgrade, will fulfill its requirements.
PRP	Potentially Responsible Party - Entity responsible for contamination of land, air, and/or water. This term is used in reference to Part 201 (formerly Act 307) sites.
RAP	Remedial Action Plan - Cleanup plan developed for a Great Lakes Area of Concern.
RCRA	Resource Conservation and Recovery Act
REP	Rouge Education Project - FOTR's school-based, interdisciplinary watershed education and monitoring effort.
RPO	Rouge Program Office
RRAC	Rouge Remedial Action Plan Advisory Council - Multi-stakeholder committee formed to assist with the update and implementation of the Rouge River RAP.
RRBO	Rouge River Bird Observatory
RRNWWD	Rouge River National Wet Weather Demonstration Project or Rouge Project - Multimillion dollar project to determine the effects of wet weather discharges to the Rouge River and demonstrate various control measures. The project is being implemented by the Wayne County Department of Environment under a grant from the federal government.
SEMCOG	Southeast Michigan Council of Governments
SEMHA	Southeast Michigan Health Association
SPAC	Statewide Public Advisory Council - Council made up of one member from each AOC in Michigan formed to share ideas and coordinate activities between various watersheds.
SRF	State Revolving Fund
SWAG	Storm Water Advisory Group
TSCA	Toxic Substance Control Act
TSD	Treatment, Storage and Disposal facilities - Facilities that treat, store, or dispose of hazardous wastes.
U of M	University of Michigan - Ann Arbor Campus
U of M-D	University of Michigan - Dearborn Campus
USACE	United States Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VOCs	A class of chemicals— volatile organic compounds
WACHD	Washtenaw County Health Department
WCDOE	Wayne County Department of Environment
WCDPW	Wayne County Department of Public Works
WCHD	Wayne County Health Department
WSU	Wayne State University
WTUA	Western Townships Utilities Authority
WWCCA	Western Wayne County Conservation Association
WWTP	Wastewater Treatment Plant - Facility that receives and treats wastewater prior to discharge to surface waters.
YCUA	Ypsilanti Community Utilities Authority

Table of Contents

	Page
Glossary	iv
Executive Summary	x
Note to the Reader	xiii
Chapter 1: Storm Water Advisory Groups Reports	1
Chapter 2: Use Impairments	11
Introduction.....	12
Restrictions on Swimming and Other Water-related Activities	14
Loss of Fish and Wildlife Habitat	14
Degradation of Fish Populations.....	17
Degradation of Benthos	19
Degradation of Wildlife Populations	20
Eutrophication or Growth of Undesirable Algae	21
Degradation of Aesthetics	21
Restrictions on Fish Consumption	22
Bird or Animal Deformities or Reproductive Problems	25
Restrictions on Dredging Activities	25
Fish Tumors or Other Deformities	26
Tainting of Fish and Wildlife Flavor.....	26
Restrictions to Navigation.....	27
Chapter 3: Sources of Impairment	29
Introduction.....	31
Separate Sanitary Sewer Overflows.....	31
Combined Sewer Overflows	32
Nonpoint Source Pollution.....	41
Polluted Storm Water Runoff.....	42
Erosion	45
On-Site Sewage Disposal Systems	46
Contaminated Sites	48
Contaminated Site Summaries.....	50
Household Hazardous Waste.....	56
Air Deposition.....	56
Waste Management Division Regulated Facilities	57
Animal Waste	57
Point Source Storm Water Discharge.....	58
Stream Flow	59
Contaminated Sediments	60
Illegal Dumping/Discharges	61
Permitted Municipal and Industrial Point Source Discharges	62
Chapter 4: Financial and Institutional Arrangements	65
Chapter 5: Education/Coordination/Information	71

	Page
Chapter 6: Enhancement of Recreational Use	77
Chapter 7: Selected Reports and References	81

Appendices

A	Individual NPDES Permit for Discharges to the Rouge River Watershed	92
B	Part 201 (of Act 451 of 1994, as amended) Sites of Environmental Contamination in the Rouge River Watershed	95
C	Contact List.....	99
D	Committees and Organizations	100

List of Figures

Number	Title	Page
1	The Rouge River Watershed Location in Michigan	ii
2	The Rouge River Watershed	iii
3	Rouge River Subwatersheds.....	2
4	Potential Target Fish Species vs. Actual Species Present in the Main Rouge River	18
5	Proper Fish Preparation	22
6	Rouge River Watershed Fish Consumption Advisories.....	23
7	Great Lakes Food Chain and Bioaccumulation.....	25
8	Sources of Pollution.....	30
9	Combined Sewer System.....	32
10	CSO Drainage Areas, Update through September 1998.....	34
11	Examples of Nonpoint Source Pollution	41
12	On-site Sewage Disposal System (OSDS)	47
13	Types of Illicit Connections in the Rouge River Watershed from 1995 to 1998.....	61
14	Rouge River Restoration, Projected Costs	69
15	Recreational Areas in the Rouge River Watershed.....	79

List of Tables

Number	Title	Page
1	Completed Projects.....	xiv
2	New, Ongoing, and Incomplete Projects	xviii
3	GNUI Water Task Force Group Draft Goals and Progress Summary	4
4	Summary of Impaired Uses in the Rouge River Watershed	12
5	CSO Control Construction Projects (Status and Costs).....	35

Executive Summary

“We have made great strides in the past ten years toward restoring and renewing the Rouge River to the natural resource we want it to be for our children and grandchildren. All of the projects that are taking place to help restore the river will help fulfill our vision for the future. Think of it. It is possible to envision a day when hardly anyone remembers the bad old days of the Rouge River. It is even possible to envision a day when the Rouge River is considered a recreational resource without question. And it is now possible to envision a day when we won't have to Rescue the Rouge every June. Instead, we can gather at locations all over the watershed and celebrate the Rouge River. This is our vision for the future. This is our vision for tomorrow's child.”

*Edward H. McNamara
Wayne County Executive*



Holliday Nature Preserve

Executive Summary

To help understand the current status of the Rouge River and the efforts to restore beneficial uses, it is important to recognize where we have come from. Like many Great Lakes tributaries, the Rouge River was used by early settlers as a source of drinking water and a means of transportation for the fur trade and supplies.



Beginning in the early 1900s, the Rouge River Watershed was the focal point for development of the automobile industry and the heart of the industrial revolution. This industrialization, along with rapid population growth, led to severe degradation of the river.



By the 1960s, the Rouge River was flowing orange due to the discharge of large quantities of industrial pickle liquor wastes. The orange color was evident when a boat cut a wake through the heavy waste oil floating on the surface. During this time, the Rouge River became infamous as one of the three Great Lakes tributaries to catch on fire.

Restoring the Rouge River began in the 1960s with efforts to control industrial pollution, which was perceived, at least visibly, as having the worst impact on the surface waters. An early 1970s study performed by the Michigan Department of Natural Resources (MDNR) reported that, “approximately 40 miles of the Rouge River were characterized by very poor water quality as evidenced by a macroinvertebrate community dominated by animals tolerant of severely polluted waters. The principal contaminants at that time were raw sewage and inorganic sediment entering the river via combined and/or storm sewers.”

During the 1970s, the State of Michigan worked with the federal government to implement its National Pollutant Discharge Elimination System (NPDES) Program, requiring more extensive abatement programs. By the early 1980s, industries were no longer considered the major source of pollution to the river. Much of the Rouge River, however, did not meet the state’s water quality standards for warmwater streams. Historically, sewers were built to protect human health and safety, not the environment. The first sewers were designed to direct disease-causing sanitary wastes and storm water away from populated areas to the nearest stream or river. Wastewater treatment plants were later built to treat the combined storm water and sewage before it reached the river. When these systems became overwhelmed during storm events, however, they were designed to discharge directly to the river without treatment. These discharges, known as combined sewer overflows (CSOs), have created significant pollution problems for the Rouge River for many years. CSOs are often the cause for the “rotten egg” smell near the Rouge River.

By the early 1980s the citizens of southeast Michigan were demanding that the MDNR do something to clean up the Rouge River. In response, the MDNR developed the Rouge River Basin Strategy that was adopted by the State Water Resources Commission on October 1, 1985. A key element of this strategy called for the development of a Remedial Action Plan (RAP) to restore uses throughout the Rouge River Watershed over a 20-year period. The Rouge River was one of 42 “hot spots” or Areas of Concern in the Great Lakes Basin

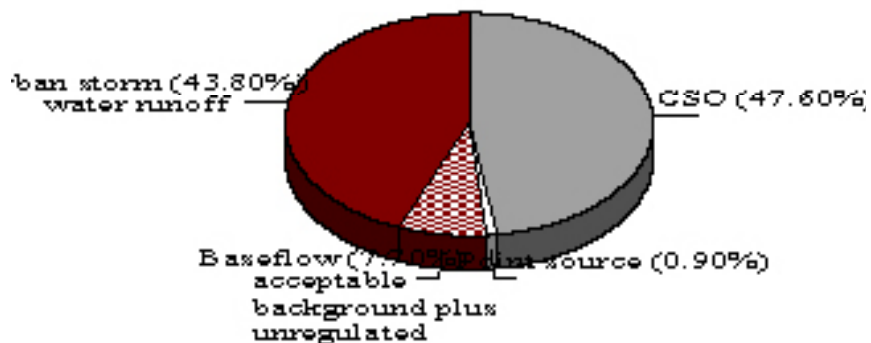


where a RAP was needed to restore uses consistent with the Canada-U.S. Great Lakes Water Quality Agreement. It was well recognized that solving the Rouge River's problems could not be accomplished in a piecemeal fashion and would require a watershed-wide approach. Later in 1985, the Commission initiated a multi-stakeholder process to develop and implement the RAP with the participation of all 48 communities (the Rouge River Basin Committee).

During the mid-1980s, emphasis was placed on sanitary sewer improvements because certain communities were having trouble transporting their sewage to main interceptor sewers. Most of these improvements have been completed and nearly all of the separate sewer overflows eliminated at a cost of over \$543 million.

The initial Rouge River RAP was completed in 1989. The document was updated in 1994 to include new information and projects and to address a broader range of issues. The RAP provided a means to increase accountability for remedial and preventive actions, track progress, and resolve conflicts in a comprehensive manner so that beneficial uses could be restored. The major emphasis during this time was on CSOs. The 1989 RAP estimated that approximately 7.8 billion gallons of combined sewage were discharged

Sources of Oxygen Depleting Materials



Source: Rouge Program Office

to the Rouge River annually. Wayne County recognized the need to obtain federal funding to help local governments deal with the widespread CSO problem. The federal government, in response, appropriated several hundred million dollars in grant funding for Wayne County to implement the Rouge River National Wet Weather Demonstration Project (Rouge Project). The Rouge Project, as it is known, has made it possible to significantly reduce the annual volume of CSOs at a cost of more than \$392 million.

Nearly all of the initial CSO control construction projects proposed in the 1994 RAP have been or are nearing completion. Many retention/treatment basins are now in the evaluation phase to determine their effectiveness during various rain events. In general, it appears that the basins are capturing 85% of previous CSO discharges. As a result of these efforts, odor and bacterial problems have been reduced, allowing for a canoe livery to be opened in 1996 downstream of Newburgh Lake in the Middle Rouge River. This was the first time in over 25 years that partial body contact recreation was encouraged along the Rouge River.

Because of the community-based, watershed approach initiated by the RAP and the substantial progress made to date, the relative importance of different sources of pollution has changed. Because pollution caused by sanitary overflows and CSOs has been significantly reduced, other sources of pollution (e.g., urban storm water runoff, illicit connections, failing septic systems, flow, habitat loss) are becoming a higher priority.

Addressing these issues will require working with stakeholders on a subwatershed scale. When the Rouge River RAP was initiated in 1985, the Rouge River Basin Committee was established to ensure community and stakeholder participation. All 48 communities, as well as other interests, were represented on this Basin Committee. In 1993, the MDNR reorganized the RAP institutional structure into the Rouge River RAP Advisory Council (RRAC) to update the RAP and to track implementation (see Appendix D for RRAC membership). Subcommittees were formed to address specific issues such as nonpoint source pollution, contaminated sites, habitat, public education and on-site sewage disposal systems.

Subwatershed advisory groups have been formed at the subwatershed level to address local issues relating to storm water, flow management, habitat, and other locally identified issues (see Figure 3, Chapter 1 for a map of the subwatersheds). Coinciding with the startup of these local initiatives is a process to revise the Rouge River RAP. As a result of data collected in the past several years and numerous remedial actions taken, we now have a clearer picture of where we need to focus our cleanup efforts. We also need to ensure that knowledge and practical experience gained in the implementation of the Rouge RAP is reflected in the revised plan. Public participation and input will be essential in the RAP revision process. RRAC has developed a strategy for obtaining public participation in the RAP revision process which includes: (a) conducting stakeholder meetings/workshops with the storm water advisory groups; (b) expanding RRAC membership to include more local government representation; (c) and establishing an executive committee to oversee the RAP revision process.

The foundation of the revised RAP will be the watershed management plans being developed by the storm water advisory groups. Success in this next phase of our community-based, watershed approach will in large part be dependent upon successes within the storm water advisory groups.

This Rouge River RAP Progress Report has been prepared to catalogue progress made since 1994, and celebrates our successes in an effort to sustain the momentum required to address the next phase of restoration of the Rouge River. Many issues still are not adequately being addressed. Among these are the pressures of ever-increasing urbanization, which destroys habitat and decreases fish, wildlife, and other aquatic populations. Critical habitats need to be preserved and development done in an environmentally sensitive manner. We must act quickly to address this use impairment before all vital habitats are destroyed.

It has become obvious that storm water and the pollutants that it carries must be our next major focus for restoring the Rouge. Control of this form of pollution is difficult because it is widespread, diverse, and abundant. Forty monitoring locations were established within the Rouge Watershed and results indicate that nitrogen and bacteria are still a problem in much of the river; however, biological conditions have shown improvement.

Stream flow continues to be a significant problem for the Rouge River. Development pressures increase the percent of impervious surfaces, which in turn creates more runoff. This factor has been cited as one of the major causes of decreased fish and aquatic life populations in the Rouge River. Low flows are also a problem associated with urbanization and can create significant problems for fish and other aquatic life.

We have made great strides in the education of watershed residents about their impact and what they can do to make a difference. Without educating residents about the problems and how they fit into the picture, we cannot hope for success in restoring the Rouge River.

This *Rouge River RAP Progress Report* is a continuation of a series of progress reports prepared since 1989. It highlights progress made between 1995 and 1998. A *Rouge River Report Card* will be published later this year and will summarize, in a user-friendly format, the current data on the health of the river. The revised RAP is scheduled for completion by the year 2000 and will include new goals and recommended actions for restoring the river. Please contact Cathy Bean, Rouge River RAP Coordinator, Michigan Department of Environmental Quality (734-953-1441) or Noel Mullet, Wayne County Department of Environment (313-964-8868) for further information on how you can get involved.



Note to the Reader:

This document has been published as a progress report for the implementation of the Rouge River RAP. It includes activities from various watershed stakeholders. Although a great deal of information is contained in this document, it should not be considered one hundred percent comprehensive. The document covers progress made from 1995 to present.

The document is divided into several different sections. First, a quick reference table has been compiled to show progress made on restoration activities in the watershed. Also, a table has been compiled which shows RAP implementation projects presently underway.

The document contains a section on impaired uses, their status in the Rouge Watershed, and any progress made in implementing recommendations. A similar format is used for a section on pollutant sources that cause use impairments. Separate sections dealing with financial and institutional arrangements, education, and recreational uses are also included as areas that facilitate successful clean up of the Rouge River. Several appendices are included in the back of the document, which point the reader to other sources of information on the Rouge River.

Activities that relate to a specific goal or recommendation of either the original RAP or the 1994 Update are indicated in bold print with the specific recommendation number and letter designation at the end of each progress statement as shown below:

Example Progress Statement



A combined sewer overflow control basin has been completed in Inkster (**Recommendation B-1c**).

Priority was designated for each use impairment and each source in the 1994 Update. These priorities have been transferred over to this document and can be found at the beginning of each use impairment or source. The use impairments and sources of impairment have also been put in their prioritized order in the document.

As was stated earlier, this document is not to be considered a stand-alone document. It is to be used in conjunction with the 1994 Rouge River Remedial Action Plan Update and the original 9-volume Rouge River RAP documents.

Table 1
Completed Projects

RAP Reference	Projects/Activities	Agency
Loss of Fish and Wildlife Habitat		
II-1c, II-2j	Michigan Environmental Conference “Practical and Cost Effective Watershed Management”	MWEA, RRAC Habitat Subcommittee
II-1c	Two seminars to enhance/preserve fish and wildlife habitats	RRAC Headwaters Subcommittee
II-4a	Purchase of enhanced wetland maps, distributed to headwater communities.	RRAC Headwaters Subcommittee
II-2o	Streambank Stabilization Project, funded by funded by FOTR, in Eliza Howell Park	FOTR, NRCS, and Detroit
II-2c, II-2q	Pilot Habitat Survey	RRAC Habitat Subcommittee Volunteers
Degradation of Fish Populations		
III-1a	Study of the fisheries potential of the river	U of M Researchers, Rouge Project
III-1f	Johnson Drain stocked with 19,393 brown trout	MDNR-Fisheries
III-1d	Caged fish studies on the main stem of the Rouge to study bioaccumulative contaminants and source	MDEQ-SWQD
III-1a	Fisheries watershed assessment	MDNR , Rouge Project
Degradation of Benthos		
IV-1	Aquatic habitat study of over 80 sites throughout the watershed	Rouge Project
Eutrophication or Growth of Undesirable Algae		
VI-1b	Establishment of an extensive monitoring network to monitor phosphorus and other nutrients	Rouge Project
Degradation of Aesthetics		
VII-1	Baseline water quality sampling efforts included water clarity, color, odor and visible debris. Report on aesthetics.	Rouge Project
VII-1b	As part of the Rouge’s Reconnaissance Survey, all outfalls in over 90 miles of the Rouge were surveyed	Rouge Project
Restrictions on Fish Consumption		
VIII-1a	Extensive sediment sampling in the Middle Rouge	Rouge Project, MDEQ
Restrictions on Dredging Activities		
X-1a	Surficial sediment sampling done in October 1997 and June 1998. Information was put into the main Southeast Michigan FIELDS Sediments Database kept by USACE	MDEQ-SWQD

Table 1
Completed Projects

RAP Reference	Projects/Activities	Agency
Restrictions on Dredging Activities (continued)		
X-2a	Sediments from the Rouge Turning Basin included in MDEQ and USEPA study of sediment disposal treatment	MDEQ and USEPA
Separate Sewer Overflows		
A-1a, B-1a	Detroit Water and Sewerage Department Pump Station 2A and implementation of Detroit Flow Management Plan	DWSD
A-1b	Local sewer improvements in the Evergreen-Farmington area	Local governments
A-1c	Local sewer improvements in North Huron Valley-Rouge Valley Project	Local governments
A-1e, K-1h	Design and distribution of informational downspout brochure	RRAC-NPS
Combined Sewer Overflows		
B-1f	Sampling of influent and effluent of a CSO retention/treatment basin in Saginaw	Rouge Project
B-1a	Long Term CSO Control Program	DWSD
B-1b	Phase I interim controls used to optimize available in-system storage capacity	DWSD
B-1j, B-1h	Detroit revised its ordinance in 1996 to provide updated legal authority necessary for implementation of revised IPP	Detroit
A-1	CSO retention treatment basins and sewer separation projects (see CSO section)	County and local governments
Polluted Storm Water Runoff		
CA-1c, CA-1h	Multiple workshops on the general storm water permit for communities in the Rouge River Watershed	Rouge Project, MDEQ-SWQD
CA-1a	Combined recent data collection through the project with historical data to establish baseline water quality during wet and dry weather. Forty ambient stations and eight CSO stations being monitored	Rouge Project
CA-2b	River Basin Study for the Lower Rouge River	NRCS
Erosion		
CB-1d	Survey of the magnitude and extent of streambank erosion on the river's four major branches and selected tributaries	Rouge Project

Table 1
Completed Projects

RAP Reference	Projects/Activities	Agency
Erosion (continued)		
CB-1	Middle-1 and Lower-1 subwatersheds projects: <ul style="list-style-type: none"> · Conservation plans for over 2,500 acres of farmland · Over 3 acres of grassed filter strips installed to provide a buffer between crop fields and streams · Four voluntary “Farm-A-Syst” Evaluations · Presentations on water quality and soils · Over 440 Washtenaw soil surveys published and distributed 	Washtenaw County, Wayne Conservation Districts and Rouge Project
On-site Sewage Disposal Systems		
CC-1, K-1	Pamphlet on proper maintenance of septic systems	Rouge Project
CC-1a	Survey to detect failing septic systems	Rouge Project
CC-1a	Map of septic systems reported in 1990, distributed to local health departments and Detroit	Rouge Project
CC-1d	Connect residences in the Village of Franklin to the sanitary sewer system	Village of Franklin, Oakland County
CC-1a	Identify the failure rate of septic systems in Farmington Hills and Southfield	SEMHA, Oakland County Health Division, Wayne County, Rouge Project
CC-1a	Second survey of septic systems in selected areas in Southfield and Farmington Hills	RRAC-OSDS and Oakland County
Contaminated Sites		
CD-6, CD-6a	Citizens Guide to Contaminated Sites packet placed in 35 libraries in the watershed	RRAC-Contaminated Sites Subcommittee
CD-5	List of recommendations for conducting public meetings	RRAC-Contaminated Sites Subcommittee
CD-5	Closure of the Warrendale dumpsite	RRAC-Contaminated Sites Subcommittee
Waste Management Division Regulated Facilities		WCDOE, MDEQ, RRAC-Contaminated Sites Subcommittee
CG-3a	Developed <i>Guide for Salvage Yard Owners</i>	
Animal Waste		
CH-1a	Signs posted throughout Wayne County Parks asking visitors not to feed the wildlife in Hines Park	MDEQ-WMD, U of M-D Interns
CH-1	Elimination of Gill Farm waste	Wayne County Parks Division
Point Source Storm Water Discharges		MDEQ and NRCS
D-1	Point source storm water permits issued by MDEQ for 82 industrial facilities in the watershed	MDEQ-SWQD

**Table 1
Completed Projects**

RAP Reference	Projects/Activities	Agency
Sediments		
F-1	MDEQ-SWQD removed 6,900 cubic yards of PCB-contaminated sediment from Evans Products ditch; cleanup from 1/97 - 3/97	MDEQ-SWQD
F-1a	Sediment survey throughout the watershed	Rouge Project and U of M-D
Public Participation and Education		
K-1c, K-1j, K-1h	Education and coordination activities <ul style="list-style-type: none"> · Rouge Riverfest at Eliza Howell Park in conjunction with Rouge Rescue '96 · Rouge Project Homepage developed and on the Internet · Movie theater ad shown · Over 100,000 placemats distributed to restaurants in the watershed · Portable display, "Our Actions Affect the Rouge" set out at over 40 communities event 	Rouge Project FOTR, Brightmoor Concerned Citizens
K-1b	River Water Festival Participants - 1,200 fifth graders	Rouge Project
K-1d	Observer and Eccentric Newspaper developed multi-page insert, "Changing Currents," distributed to over 160,000 homes	FOTR and Rouge Project RRAC Education Subcommittee and Rouge Project Rouge Project
K-1, K-2	Media Tour	U of M-D and Rouge Project
K-1b, K-1d	Frog and Toad Survey in the Middle-1 Subwatershed	Observer & Eccentric Newspapers
K-11	Recreation guide for the watershed	Rouge Project Rouge Project and FOTR
		RRAC Education Subcommittee and the Rouge Project
Recreation		
L-2c	Fish habitat improvement project	
L-2b	Fishing derbies held in various communities	Southfield Southfield, Farmington, Farmington Hills and Wayne County Parks
Municipal Industrial Discharges		
H-1a	New general permits have been issued for five types of discharges	MDEQ-SWQD

Table 2
New, Ongoing, and Incomplete Projects

RAP Reference	Projects/Activities	Cost Estimates	Agency
Loss of Fish and Wildlife Habitat			
II-2b, II-2h	River Watch Program Adopt-a-Stream	Not estimated	FOTR
II-2, II-2j	Purchasing parcels of land for preservation, along with education	Not estimated	Southeast Michigan Land Conservancy
II-2c	Rouge River Bird Observatory Project Manager	Not estimated	Cornell Lab of Ornithology/U of M -D Superior Township and Southeast South-east Michigan Land Conservancy
II-2a, II-2k	Promote conservation easements along Fowler Creek and Lower Rouge	\$20,000	
Degradation of Fish Populations			
III-1a	Prepare a fisheries management plan	Not estimated	MDNR-Fisheries and the Rouge Project
Degradation of Benthos			
IV-1c, II-1, II-2d	Streambank Stabilization Projects		
	• Study to analyze erosion at construction sites	\$60,000	Farmington Hills
	• Upstream Northville Mill Pond Erosion Control Blanket to reduce Construction site erosion	\$36,500	Novi
	• Caddell Drain stream bank stabilization project	\$150,000	Oakland County Drain Commissioner's Office
	• Eliza Howell Park Maintenance Program	\$270,000	Detroit Recreation Department
	• Nankin Mills bank stabilization control measures	\$200,000	Wayne County Parks
	• Northville Mill Pond Study	\$200,000	Northville, Northville Historical Society, Northville Public Schools, and Friends of Mill Pond
	• Rogell Drain Bioengineering Project	95,000	Detroit and NRCS
	• Novi alternative bank stabilization	\$90,000	Novi
	• Restoration and protection of Johnson Creek	\$62,000	Washtenaw County Drain Commissioner's Office

**Table 2
New, Ongoing, and Incomplete Projects**

RAP Reference	Projects/Activities	Cost Estimates	Agency
Degradation of Wildlife Populations			
V-1a	Tracking bird populations	Not estimated	RRBO, Farmington area naturalists, Farmington Hills, and Ford-Sheldon Road Plant
V-1a	Marsh Monitoring Project	Not estimated	RRBO, RRAC Habitat Subcommittee, Canadian Wildlife Services and Long Point Bird Observatory
Eutrophication or Growth of Undesirable Algae			
VI-1c	Rouge Friendly Neighborhood Program - lawn fertilization	Not estimated	Rouge Friendly Neighborhood Program, Rouge Project and SOCRRA
Degradation of Aesthetics			
VII-1a	Removal of significant log jams in Wayne County	Not estimated	Wayne County
VII-1a	FOTR - Rouge Rescue	Not estimated	FOTR
VII-1a	Detroit log jam removal		Detroit
Separate Sewer Overflows			
A-1	Planned projects completed (see Table 1), but new information indicates that some SSOs still exist	Not estimated	MDEQ-SWQD and local governments
Restrictions on Fish Consumption			
VIII-1b	Newburgh Lake-Remediation/Restoration	Not estimated	Rouge Project
Restrictions on Dredging Activities			
X-2a	City of Detroit/Detroit Coke Site Study	\$50,000	MDEQ, USEPA, and Detroit
X-2a	USACE Rouge River Dredging		USACE
			MDNR
Fish Tumors and Other Deformities			
XI-1a	Results of fish assessment and tumors		
Combined Sewer Overflows			
B-1b, B-1c, B-1d	Initial projects to control CSO discharges/additional planning	\$345,000,000	MDNR-SWQD, Local governments and the Rouge Project
B-1j	Full implementation of the Industrial Pretreatment Program	Not estimated	DWSD, MDEQ-SWQD and industrial users
B-1j, B-1h	Expansion of Incident Prevention Emergency Response Plan	Not estimated	DWSD and Wayne County

**Table 2
New, Ongoing, and Incomplete Projects**

RAP Reference	Projects/Activities	Cost Estimates	Agency
Polluted Storm Water Runoff			
CA-1c	Voluntary Storm Water General Permit/prototype storm water management control program	Not estimated	MDEQ-SWQD
CA-1d, CA-1h, CA-2c	Traditional polluted storm water runoff control measures evaluation:		
	· Dearborn Heights comparative catch basin cleaning and street sweeping study	\$100,000	Dearborn Heights and Rouge Project
	· Redford Township Roadway Source Control Project	\$150,000	Redford Township and Rouge Project
	· Livonia and Farmington Hills catch basin maintenance study	\$200,000	Livonia and Farmington Hills and Rouge Project
CA-1	Local storm water management evaluation	Not revised	Counties, MDNR-SWQD and local government
CA-1a	Wet weather water quality survey	Over \$9,000,000	Rouge Project and MDNR-SWQD
CA-1i	Model local storm water ordinance	\$80,000	MDNR-SWQD
CA-1e	Evaluation of wetlands as polluted storm water runoff control	Not revised	Rouge Project
CA-2	Educate stakeholders about controls for storm water runoff. Conduct 4-5 storm water seminars to educate stakeholders	Not estimated	MDNR-SWQD and MDNR-LWMD, local governments, Rouge Project, and RRAC-NPS
CA-2	Soil Erosion Core Groups formed and functioning	Not estimated	MDEQ-SWQD, counties and local agencies
Point Source Storm Water Discharges		Not estimated	MDNR-SWQD
D-1	Ensure that regulated storm water discharges comply with permit requirements for construction sites and industrial facilities		

Table 2
New, Ongoing, and Incomplete Projects

RAP Reference	Projects/Activities	Cost Estimates	Agency
Stream Flow			
E-1b	Creation of wetlands to mitigate high flow storm water discharges in Inkster	Not estimated	Rouge Project, MDNR-SWQD and MDNR-LWMD
E-1b	Installation of outlet control structure at the Caddell Regional Storm Water Detention Facility	\$126,000	Oakland County Drain Commissioner's Office
E-1b	Study to explore funding mechanisms for ongoing maintenance of detention ponds, training of citizens and conditions of existing ponds in Canton Township	\$111,000	Canton Township and Rouge Project
E-1b	Regional detention pond for erosion	\$200,000	Livonia and Rouge Project
On-site Sewage Disposal Systems			
CC-1	Failing on-site system investigations	Not estimated	RRAC-OSDS
CC-1b	Inspection guidelines and uniform construction standards	Not estimated	RRAC-OSDS
Contaminated Sites			
CD-3d	Development of a generic document for investigation and closure of abandoned dump sites	Not estimated	Wayne County Abandoned Dumps Group
Air Deposition			
CF-1a, CF01b	Quantify atmospheric deposition of pollutants of concern	Over \$838,000	Rouge Project, U of M and DWSD
CF-1b, CF-1c	Continue quantifying atmospheric deposition of concern for emissions generated within the watershed	Over \$600,000	Rouge Project, U of M and DWSD
Sediments			
F1-a	Intensive survey of the Middle and Lower Rouge for PCBs - sediment survey	\$481,000 to date	MDNR-SWQD, MDNR-SWQD and Rouge Project

Table 2
New, Ongoing, and Incomplete Projects

RAP Reference	Projects/Activities	Cost Estimates	Agency
Sediments (continued)			
F-1b	Impoundment sediment control and removal demonstration - Newburgh Lake	\$2,010,000	Rouge Project
F-1	Cleanup sites of environmental contamination, Part 201 sites, including river sediments	Not estimated	MDNR-ERD and MDNR-SWQD
Illegal Dumping/Discharges			
G-1b	Elimination of improper connections to storm drains	\$302,400 to date	Wayne County Health Department
G-1a	Elimination of illegal/illicit connections to the river	\$50,000	Rouge Project and Oakland County Health Department
G-1-c	Evaluation of illicit connection program	\$51,000	Rouge Project
Municipal and Industrial Discharges			
H-1a	Reissue NPDES permits on a five year schedule	Not estimated	MDNR-SWQD and MDEQ
Institutions and Financing			
J-1a	Secure state and federal funding support	\$205,100,000 Federal Funds, \$34,550,000 in SRF funds	MDNR, USEPA, local governments and SEMCOG
J-1d	Discussion of financial and institutional arrangements to fund a watershed management system	Not estimated	Rouge Project, MDNR-SWQD, Federal Court and RRAC
Public Participation and Education			
K-1c, K-1j, K-1h	Development of public education materials and activities to promote projects and educate residents	Not estimated	MDNR, RRAC Public Education, FOTR, RRWC, SEMCOG, Rouge Project and local governments
K-1j, K-1h	Implementation of "Rouge Friendly" programs to promote stewardship	Not estimated	MDNR, RRAC Public Education, FOTR, RRWC, SEMCOG, Rouge Project and local governments
K-1	Environmental Education Institute	Not estimated	U of M-D and USEPA Region V

Table 2
New, Ongoing, and Incomplete Projects

RAP Reference	Projects/Activities	Cost Estimates	Agency
Public Participation and Education (continued)			
K-1k, L-1b	Environmental Interpretive Center	\$3.5 Million	U of M-D
K-1g	Presentations about Rouge initiatives and opportunities - speaker's bureau	Not estimated	Rouge Project, FOTR and RRAC Public Education
K-3	Studying the feasibility of integrating municipal GIS and Rouge Project GIS	\$129,000	Redford
K-1h	Brochures to residents about hazardous waste, recycling, composting etc.	Not estimated	Dearborn
K-1h	Promotion of proper lawn care to reduce pollutant runoff	\$69,000	SOCRRA
K-1	24-hour hotline for environmental services	Not estimated	Wayne County Department of Environment
K-1, K-1p	Outreach programming for school groups	Not estimated	Wayne County Parks
K-1e, K-1p	Nature and history exhibits at Nankin Mills scheduled for 1999	Not estimated	Wayne County
K-1b	Rouge Education Project	Not estimated	FOTR and the Rouge Project
K-1	Rouge River Stewards Workshop	\$100,000	FOTR, Rouge Project and HFCC
Recreation			
L-2b	Fishing derbies in Rouge communities		Wayne County Parks, Farmington, Farmington Hills and Southfield
L-1b	Canoe livery during dry weather (discontinued because of Newburgh Lake remediation activity)	Not estimated	Wayne County Parks
L-1	Walking and biking paths near the river in various communities	Not estimated	Northville, Southfield and Wayne County
L-1	Nature centers and natural areas available to visit and enjoy	Not estimated	Troy, Livonia, Dearborn, Farmington Hills, and Bloomfield Township

