

4.1 **MAIN 3-4 SUBWATERSHED DESIGNATED USES**

The State of Michigan and Federal water quality programs establish designated uses for all surface waters. The MDEQ has determined that ten uses are impaired throughout most of the watershed and eight uses are impaired in the Main 3-4 Subwatershed. The use impairments are ranked in order of importance to restoring the river, as determined by the MDEQ and the RRAC in 1994. They are as follows:

- Rank 1 - Restrictions on swimming and other water-related activities
- Rank 2 - Loss of fish and wildlife habitat
- Rank 3 - Degradation of fish populations
 - Degradation of benthos
 - Degradation of Wildlife Populations (impairment unknown; further study needed)
- Rank 4 - Eutrophication or growth of undesirable algae
 - Degradation of aesthetics
- Rank 5 - Restrictions on fish consumption
- Rank 6 – Bird or Animal Deformities or Reproductive Problems (impairment unknown; further study needed)
- Rank 7 - Restrictions on dredging activities
- Rank 8 - Fish tumors or other deformities
- Rank 9 – Tainting of Fish and Wildlife Flavor (impairment unknown; further study needed)
- Rank 10 - Restrictions to navigation

To create an effective watershed management plan, watershed concerns must be identified and linked to one or more designated uses. Various stakeholders have noted watershed concerns since 1989 when the first Rouge River Remedial Action Plan (RAP) was published. The RAP is considered a living document and updates have been made in 1994 and 1998 as significant progress has been made in some areas. The 1998 RAP report summarizes the watershed concerns and progress that has been made by members of the Main 3-4 Subwatershed Advisory Group. Note that these watershed goals and plans are preliminary in nature and have not yet undergone review by the public.

4.2 **PRIORITIZE POLLUTANTS**

In order to reach goals on a subwatershed basis, it is important to identify the pollutants or threats that are detrimental to designated and desired uses. To restore the subwatershed, we also need a good understanding of the sources and causes of the pollutants or threats. Table 4-1 shows the prioritized pollutants, or threats to river quality, in the Main 3-4 Subwatershed, relates the pollutants or threats to the affected designated or desired uses, and lists their prioritized sources and causes. This prioritization is based on various factors such as the SWAG prioritization, a consideration of the magnitude of the source in the subwatershed, as well as review of past studies that indicate which source may be contributing the most problems in the subwatershed. This prioritization has assisted the SWAG in identifying and prioritizing which pollutant should be addressed first and with which best management practices.

Table 4-1: Prioritized Pollutants or Threats to River Quality, in the Main 3-4 Subwatershed

PRIORITIZED POLLUTANTS OR THREATS TO RIVER QUALITY	DESIGNATED (OR DESIRED USES) AFFECTED	SOURCES (K=KNOWN, S=SUSPECTED)	CAUSES (K=KNOWN, S=SUSPECTED)
1. <i>E. coli</i> bacteria	1. Partial body contact recreation 2. Total body contact recreation	1. Human waste from failing septic systems (k) 2. Illicit connection to the storm sewer (s) 3. Sanitary Sewer overflows (k) 4. Combined sewer overflows(k)	1. Need for septic system maintenance education, inspection, correction (k) 2. Need for illicit connection investigation, correction (s) 3. Need for education about disposing of pet waste (s) 4. Need for education about controlling waterfowl waste (s) 5. Complete SSO control program 6. Complete CSO control program
2. Total suspended solids (sediment)	1. Warmwater fishery 2. Indigenous aquatic life and wildlife 3. (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics)	1. Construction sites (k) 2. Roads/streets/highways (k) 3. Eroding stream banks (s) 4. Agricultural land (s) 5. Livestock in streams (s)	1. Need for aggressive soil erosion and sedimentation controls or enforcement (k) 2. Need for enhanced street sweeping/cleaning program (s) 3. Need for riparian vegetation (k) 4. High wet weather flows (k) 5. Need for agricultural best management practices to reduce soil erosion (s) 6. Livestock access to streams (s)
3. Nutrients	1. Warmwater fishery 2. Indigenous aquatic life and wildlife 3. Partial body contact recreation 4. Total body contact recreation 5. (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics)	1. Residential lawns (k) 2. Failing septic systems (s) 3. Illegal connection to the storm sewer (s) 4. Golf courses (k) 5. Streets (k) 6. Agricultural fertilizers and livestock waste (s) 7. Waterfowl and pet waste (s)	1. Need for education about proper fertilization and soil testing practices for residents, golf courses, agricultural landowners (k) 2. Need for improved street sweeping (s) 3. Need for septic system maintenance education, inspection, correction (s) 4. Need for illicit connection inspection, correction (s) 5. Need for proper manure management of livestock (s) Need for education about waterfowl and pet waste (s)
4. Land Use Change/Loss of natural features (especially the riparian corridor)	1. Warmwater fishery 2. Indigenous aquatic life and wildlife 3. (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics)	1. New development (k) 2. Older, urban development/redevelopment (k)	1. High development pressures (k) 2. Need for master plans and zoning ordinances that reflect conservation planning (k) 3. Need for protective ordinances/enforcement (k) 4. Need for education about innovative options for developers, local officials, judges (k) 5. Lack of public awareness (s) 6. Need for recreation planning (s) 7. Need for restoration in older, urban areas (k)
5. Flow variability	1. Warmwater fishery 2. Indigenous aquatic life and wildlife 3. (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics)	1. Urban storm water (k)	1. Loss of wetlands and other natural features (k) 2. Urban areas with no on-site detention (k) 3. Directly connected impervious surfaces (k) 4. Detention ponds not functioning to highest standard (s)
6. Temperature increase (decreasing dissolved oxygen, decreasing habitat for fish and insects)	1. Warmwater fishery 2. Indigenous aquatic life and wildlife 3. (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics)	1. Impervious surfaces (s) 2. Lack of riparian vegetation (k)	1. Need for incentives and regulations to decrease impacts of impervious surfaces in new developments (k) 2. Need for education and support for disconnecting impervious surfaces in urban areas (k) 3. Need for regulations, incentives, education, and support for preserving or restoring riparian vegetative cover (trees, overhanging vegetation for shade) (k)
7. Toxics/Heavy metals	1. Warmwater fishery 2. Indigenous aquatic life and wildlife 3. (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics)	1. Atmospheric deposition (s) 2. Construction materials (s) 3. Automobile break linings and tires (k) 4. Household Hazardous Waste (s)	5. Need for air quality control (k) 6. Need for education regarding best construction practices (s) 7. Need for "ultra urban" underground storm water treatment devices (s) 8. Need for education and support for business and household hazardous waste disposal (s)

4.3 GOOD NEIGHBORS UNITED INITIATIVE (GNUI)

The 1998 RAP report summarized the efforts of the GNUI water quality task force. GNUI was formed by citizens groups, communities, industries, and local units of governments interested in addressing environmental and economical concerns of the area. Wayne County Department of Environment, EPA Region V, and City of Detroit personnel joined the local governments in these discussions.



Winner of the fifth grade poster contest

The group's mission is to improve the quality of life in the Main 3-4 and southwest Detroit area by focusing resources on selected environmental and economical concerns. A water quality task force was formed and six priority issues were identified. Table 4-2 lists the watershed concerns noted by these stakeholders, and the associated impaired uses that result.

Table 4-2: GNUI Watershed Concerns and Impaired Uses

1998 GNUI WATERSHED CONCERNS	IMPAIRED DESIGNATED USES
Address local storm water management	Navigation Warm water fishery Aquatic life Partial and total body contact
Minimize impacts of upstream sources	Warm water fishery Aquatic life Partial and total body contact
Increase public access to waterways	Navigation Partial and total body contact
Reduce contaminated sediments	Partial and total body contact Warm water fishery Aquatic life
Fish consumption advisories	Warm water fishery
Aesthetics and habitat	Aquatic life Warm water fishery

4.4 PUBLIC OPINION SURVEY RESULTS

The Rouge Program Office conducted a survey of residents of the Rouge River watershed in September of 1999. Four hundred watershed residents were interviewed, 100 in each of the four geographic regions of the watershed. Region 4 – Downriver (City of Detroit, eastern half of Dearborn, cities of Melvindale and River Rouge and portions of Allen Park) corresponds closely to the Main 3-4 subwatershed.

The intent of the survey was to 1) ascertain residents' current attitudes and knowledge about the Rouge River and its watershed 2) evaluate changes in attitudes and knowledge (previous survey done in 1993) and 3) help determine public priorities for future restoration efforts. The results of the responses from Region 4 are discussed in the following paragraphs. The full 1999 public involvement survey can be found in Appendix D.

4.4.1 ISSUES OF CONCERN

The first question respondents were asked was what issue they viewed as the most pressing *current* problem facing their local community. Table 4-3 lists the issues of concern in priority order for the Main 3-4 communities.

Table 4-3: Issues of Concern

ISSUES OF CONCERN FROM PUBLIC SURVEY	PERCENTAGE RESPONSES
Schools	29%
Crime	27%
Health Care	16%
Environment	8%
Unemployment	8%

When respondents were read a list of ways for government to take action to improve upon the environmental concerns in Michigan, the following were ranked very important:

- Cleaning up toxic waste sites (88%)
- Controlling air pollution (80%)
- Improving the quality of area rivers and lakes (76%)
- Preserving fish and wildlife habitat (68%)
- Reducing flooding and erosion (60%)
- Increasing wetland protection (52%)

The environment was not the most important issue to respondents. This survey does however show overall public concern about the environment. The response to the second question demonstrates support for public expenditures for pollution control and people's willingness to change behaviors. When viewed together, there appears to be a consensus regarding the need for water quality improvements and support for public programs to restore the river.

4.4.1.1 The Rouge River: Knowledge and Use

When asked about the Rouge River, 49% of the respondents were not very familiar with the river, but 2/3 of the residents indicated that they have visited a park that has a river or stream running through it.

Walking and picnicking are the top two uses for the river parks. When asked about the ideal uses of the river and adjoining land, suggestions ranged from cleaning it up, maintaining it, reducing pollution and increasing recreational opportunities such as fishing, swimming, boating, and parks.

4.4.1.2 Water Quality and Pollution Sources

Respondents were asked a number of questions about water quality and pollution sources. Their answers are summarized below:

- The majority of residents believe that the water quality is only fair or poor (85%) and the river has stayed the same or slightly improved over the last five years. (70%)
- The majority (82%) of respondents are somewhat to very optimistic about the potential for improving water quality problems.

- Public concern about property flooding, stream bank erosion and other damage due to high flows in the Rouge River is low (4%).
- When asked about pollution sources to the River, the public opinion is equally split among the following:
 - Business and industrial waste flowing into the river
 - Combined sewer overflow (CSO) problems
 - Presence of chemicals, oils, fertilizers and other materials in storm water
- When asked specifically about storm water pollution, 75% consider it a very significant or somewhat significant problem affecting the river.

4.5 LONG TERM GOALS FOR THE MAIN 3-4 SUBWATERSHED

The Main 3-4 SWAG has considered the concerns of the GNUI task force, the results of the public survey and the watershed impairments and has created the following goals, objectives and actions. Long-term goals are defined as goals that are to be met in a time period greater than five years. It was decided to replace short-term goals with the term short-term objectives in the WMP following meetings and discussions with MDEQ. These goals are listed below with the long-term goals identified as 1-6 and the objectives listed under each long-term goal:

1. Improve water quality in the Rouge River and restore impaired uses.

- Reduce pollutant loading in storm water.
- Reduce solids loading to the river.
- Reduce contribution of nutrients.
- Increase dissolved oxygen.

2. Remove sources of pollution that threaten public health

- Finalize plans and schedules for addressing remaining CSOs.
- Develop detailed plans and approved schedules for satisfactorily addressing known SSOs.
- Identify and remove illicit discharges and illicit connections.

3. Educate the public regarding their impact on the River and the River's existing and future potential as a community asset and recreational resource.

- Conduct public education and public participation programs.
- Encourage riparian landowners to manage their waterfront as an asset to enhance property values.
- Encourage use of parklands adjacent to the river.
- Inform residents of the costs and benefits involved in restoring the river.



People boating on concrete channel



Kids riding bikes on concrete channel

4. Improve the water quality of the river to increase recreational opportunities and remove fish consumption advisories.
 - Address concrete channel (as much as possible) to improve habitat for fish and wildlife.
 - Reduce flood and bank erosion damage to riparian properties and destruction of fish and wildlife habitat.
5. Enhance and preserve habitat, especially next to the river, for fish and wildlife compatible with subwatershed land uses.
 - Continue to seek grants to implement projects such as:
 - U of M Dearborn Environmental Interpretive Center and Programs
 - Melvindale park and trail
 - Henry Ford Museum Oxbow restoration
 - Provide more fishing opportunities as water quality and habitat improves
 - Maintain and protect identified meadows and wildlife corridors
 - Establish a vegetative buffer to protect riparian habitat along the River and its tributaries.
 - Protect wetlands and other natural features that serve to store water during storm events.
 - Stabilize banks that are significant sources of sediment loading to the river.
6. Reduce water volumes and velocities in the river during a storm event to minimize bank erosion and flooding.
 - Reduce flood and bank erosion damage.
 - Require on-site detention/retention of storm water and snow melt for new commercial, multi-family residential and industrial developments and redevelopments. (where possible)
 - Encourage innovative site designs for new developments to reduce impermeable surfaces and encourage infiltration of water.



The view of the Lower Rouge from the Main Rouge