

4.1 LOWER 2 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 Lower 2 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 - Degradations of benthos (unknown)
- Rank 4 - Eutrophication or growth of undesirable algae - Degradations of aesthetics
- Rank 5 - Restrictions on fish consumption
- Rank 6 - Bird on animal deformities on reproductive problems. (unknown)
- Rank 7 - Restrictions on dredging activities
- Rank 8 - Fish tumors or other deformities
- 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 Lower 2 Subwatershed Advisory Group.

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 Lower 2 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 Lower 2 Subwatershed

PRIORITIZED POLLUTANTS OR THREATS TO RIVER QUALITY	DESIGNATED (OR DESIRED USES) AFFECTED	SOURCES (K=KNOWN, S=SUSPECTED)	CAUSES (K=KNOWN, S=SUSPECTED)
1. E. coli bacteria	<ol style="list-style-type: none"> Partial body contact recreation Total body contact recreation 	<ol style="list-style-type: none"> Human waste from failing septic systems (k) Illicit connection to the storm sewer (s) Sanitary Sewer overflows (k) Combined sewer overflows(s) 	<ol style="list-style-type: none"> Need for septic system maintenance education, inspection, correction (k) Need for illicit connection investigation, correction (s) Need for education about disposing of pet waste (s) Need for education about controlling waterfowl waste (s) Complete SSO control program Complete CSO control program
2. Total suspended solids (sediment)	<ol style="list-style-type: none"> Warmwater fishery Indigenous aquatic life and wildlife (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics) 	<ol style="list-style-type: none"> Construction sites (k) Roads/streets/highways (k) Eroding stream banks (s) Agricultural land (s) Livestock in streams (s) 	<ol style="list-style-type: none"> Need for aggressive soil erosion and sedimentation controls or enforcement (k) Need for enhanced street sweeping/cleaning program (s) Need for riparian vegetation (k) High wet weather flows (k) Need for agricultural best management practices to reduce soil erosion (s) Livestock access to streams (s)
3. Nutrients	<ol style="list-style-type: none"> Warmwater fishery Indigenous aquatic life and wildlife Partial body contact recreation Total body contact recreation (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics) 	<ol style="list-style-type: none"> Residential lawns (k) Failing septic systems (s) Illegal connection to the storm sewer (s) Golf courses (k) Streets (k) Agricultural fertilizers and livestock waste (s) Waterfowl and pet waste (s) 	<ol style="list-style-type: none"> Need for education about proper fertilization and soil testing practices for residents, golf courses, agricultural landowners (k) Need for improved street sweeping (s) Need for septic system maintenance education, inspection, correction (s) Need for illicit connection inspection, correction (s) 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)	<ol style="list-style-type: none"> Warmwater fishery Indigenous aquatic life and wildlife (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics) 	<ol style="list-style-type: none"> New development (k) Older, urban development/redevelopment (k) 	<ol style="list-style-type: none"> High development pressures (k) Need for master plans and zoning ordinances that reflect conservation planning (k) Need for protective ordinances/enforcement (k) Need for education about innovative options for developers, local officials, judges (k) Lack of public awareness (s) Need for recreation planning (s) Need for restoration in older, urban areas (k)
5. Flow variability	<ol style="list-style-type: none"> Warmwater fishery Indigenous aquatic life and wildlife (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics) 	<ol style="list-style-type: none"> Urban storm water (k) 	<ol style="list-style-type: none"> Loss of wetlands and other natural features (k) Urban areas with no on-site detention (k) Directly connected impervious surfaces (k) Detention ponds not functioning to highest standard (s)
6. Temperature increase (decreasing dissolved oxygen, decreasing habitat for fish and insects)	<ol style="list-style-type: none"> Warmwater fishery Indigenous aquatic life and wildlife (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics) 	<ol style="list-style-type: none"> Impervious surfaces (s) Lack of riparian vegetation (k) 	<ol style="list-style-type: none"> Need for incentives and regulations to decrease impacts of impervious surfaces in new developments (k) Need for education and support for disconnecting impervious surfaces in urban areas (k) Need for regulations, incentives, education, and support for preserving or restoring riparian vegetative cover (trees, overhanging vegetation for shade) (k)
7. Toxics/Heavy metals	<ol style="list-style-type: none"> Warmwater fishery Indigenous aquatic life and wildlife (Developing and enhancing recreational uses in and along the river system; enhancing aesthetics) 	<ol style="list-style-type: none"> Atmospheric deposition (s) Construction materials (s) Automobile break linings and tires (k) Household Hazardous Waste (s) 	<ol style="list-style-type: none"> Need for air quality control (k) Need for education regarding best construction practices (s) Need for "ultra urban" underground storm water treatment devices (s) Need for education and support for business and household hazardous waste disposal (s)

4.3 REMEDIAL ACTION PLAN GOALS

The vision statement of the Lower 2 SWAG, as quoted in the 1998 RAP, is : "A Lower Rouge River and river corridor that is aesthetically pleasant and is clean, healthy and safe so that watershed residents and visitors can enjoy a variety of recreational opportunities including fishing, canoeing and picnicking, and supports a healthy and diverse fish and wildlife community ".

The RAP went on to mention that the Lower 2 had applied for and receive funding from the Rouge Program Office for the following storm water projects:

- **City of Dearborn.** Ford Field retrofit and implementation of illicit discharge and public education plans
- **City of Inkster.** Develop storm water ordinances, implement illicit discharge and public education plans for water quality improvement, implement storm drain stenciling program
- **City of Romulus.** Develop storm water education and catch basin stenciling programs, complete a drainage study of the city
- **City of Wayne.** Implement multi-faceted storm water management project that includes installation of catch basins designed for improve sediment removal, street sweeping and other programs.

A survey was conducted in 1999 in an effort to gage the public's attitude about the Rouge River.

4.3.1 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 3 – Wayne, Inkster, Dearborn Heights, Dearborn, Garden City, Redford Township and Livonia - corresponds closely to the Lower 2 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 (from previous survey performed in 1993), and 3) help determine public priorities for future restoration efforts. The results of the responses from Region 3 are summarized in the following paragraphs and can be used to further identify possible public desired uses for the river. The full 1999 public involvement survey is included in Appendix D.

4.3.1.1 Issues of Concern

The respondents were first asked to identify the issue they view as the most pressing *current* problem facing their local community. The environment was the second priority for respondents. Table 4-2 lists all of the issues of concern in priority order for the Lower 2 communities.

Table 4-2: Issues of Concern

ISSUES OF CONCERN FROM PUBLIC SURVEY	PERCENTAGE RESPONSES
Crime	35%
Environment	22%
Schools	20%
Health Care	7%
Unemployment	10%

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 as 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 response to the second question suggests support for public expenditures for pollution control and people's willingness to change behaviors. When viewed together with the 1st question, there appears to be a consensus regarding the need for water quality improvements and support for public programs to restore the river.

4.3.1.2 The Rouge River: Knowledge and Use

When asked about the Rouge River, 73% of the respondents were somewhat familiar or very familiar with the river and 80% indicated that in the last two years they have visited a nearby park that has a river or stream running through it. It should be noted that the majority of public parks adjacent to the river are found in this region.

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.

4.3.1.3 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 respondents in this subwatershed believe that the water quality has improved or stayed the same over the past five years (84%) but that the quality of the river today is fair or poor (75%).
- Although 76% of respondents in this subwatershed are somewhat or very optimistic about the potential for improving flooding and water quality problems in the Rouge River Watershed, they expressed that sentiment less frequently than other areas of the watershed.
- Overall public concern about property flooding, stream bank erosion and other damage due to high flows in the Rouge River appears to be low. However, the highest rate of concern (12%) was expressed by respondents in this subwatershed where twice the number of respondents as elsewhere view flooding, bank erosion and flow damage as a very significant problem.
- 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% of watershed respondents consider it a very significant or somewhat significant problem affecting the river.

4.3.1.4 City of Wayne Public Survey

In October, 2000 the City of Wayne mailed a survey of Rouge River interests and concerns to 532 residents. Based on the 79 surveys returned, residents ranked the following goals as follows:

1. Remove sources of human waste in the river that threatens public health.
2. Remove paper, trash and debris in the river to improve its appearance.
3. Better control soil erosion and limit sediments entering the river.
4. Improve habitat conditions for fish and wildlife in the river.
5. Better control sources of nutrients reaching the river and the Great Lakes.
6. Minimize excessive flows that cause flooding and bank erosion.
6. Expand public education on how to protect the river.
7. Encourage investments in land along the river for recreation/wildlife protection.

4.4 GOALS FOR THE LOWER 2 SUBWATERSHED

The SWAG members view long-term goals, short-term objectives and actions proposed by communities as a continuous process. The long-term goals are broken into watershed based objectives; that are accomplished by individual community actions. Long-term goals are defined as goals that are to be met in a time period greater than five years. In drafting goals for the subwatershed, the SWAG considered the concerns of the RRAC, the results of the public surveys and the watershed impairments and created the goals for the Lower 2 Subwatershed. These goals are listed below with the long-term goals identified as 1-6, with the short-term 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 contribution of nutrients
 - Increase dissolved oxygen levels in the river
 - Continue discussions on watershed issues within the local government
2. Remove sources of pollution that threaten public health
 - Identify and remove illicit discharges
 - Continue to reduce combined sewer overflows
 - Develop plans and schedules for addressing known SSOs.
3. Educate the public regarding their impact on the River and the River's potential as a community asset.
 - 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
4. Enhance and preserve habitat for fish and wildlife, especially next to the river, compatible with land uses.
 - Reduce flood and bank erosion to riparian properties and destruction of fish and wildlife habitat.
 - Continue to seek grants to implement projects.
 - Identify areas where public acquisition of lands or the use of conservation easements will benefit either public use of the waterfront and/or enhance fish and wildlife values
 - Maintain and protect identified meadows and wildlife corridors.
 - Establish a vegetative buffer to protect riparian habitat along the River and its tributaries.
5. Minimize the amount of soil erosion and sedimentation.
 - Continue and improve on effective maintenance of publicly controlled storm water catch basins, detention basins and related infrastructure, including the removal and proper disposal of accumulated debris and sediments.

- Reduce solids loading to the river.
 - Stabilize banks that are significant sources of sediment loading to the river.
6. Reduce water volumes and velocities during storm events.
- Encourage on-site detention/retention of storm water for those sites not under local requirements.
 - 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 or redevelopments to reduce impermeable surfaces
 - Protect wetlands and other natural features that serve to store water during storm events.