

## Chapter 5 EXISTING IMPAIRMENTS, POLLUTION SOURCES, AND OBSTACLES

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There are several potential sources and/or causes for the water quality and fish and wildlife impairments documented in the Upper Subwatershed. Perhaps the most difficult impairments to address are those related to excessive flows following storm events that cause property and habitat damage. A significant portion of the Upper Rouge River is already developed, and options for controlling storm water runoff in the already developed areas that have a large percentage of impervious area are limited and expensive. The remaining rural properties within the Upper Subwatershed are undergoing rapid development, and the type of local land use and storm water runoff controls required for new developments will determine whether or not downstream flooding, bank erosion, and habitat destruction in the Upper Subwatershed will be exacerbated.

### 5.1 Combined Sewer Overflows (CSOs)

A major focus of attention over the last few years has been the control of combined sewer overflows (CSOs) into the Rouge River. Livonia and Redford Township have had CSO discharges into the Upper Rouge River. Livonia completed its sewer separation projects in 1998 to eliminate CSO discharges, and Redford Township's first CSO retention/treatment basin began operation in 1996.

Plans are under way to address the remaining CSO discharge on the downstream portion of the Bell Branch in Redford Township. Once a retention/treatment CSO control facility is in place in the lower Bell Branch, the largest sources of untreated waste that 1993 data identified in the Upper Rouge River will be under control. Substantial improvements in water quality have already occurred as a result of the sewer separation projects completed in Livonia and the first CSO control facility constructed by Redford Township.

However, high levels of bacteria and low dissolved oxygen levels in the Upper Rouge River upstream of both the new CSO facility and the remaining CSO discharges in the lower Bell Branch strongly indicate other sources of untreated sanitary waste. SSOs, illicit connections of waste systems to storm drains, and failing onsite disposal systems (septic tank/tile fields) are the suspected sources.

### 3. COMBINED SEWER OVERFLOWS



*A. Uncontrolled CSO  
Discharge on the Rouge River*



*B. Redford Township CSO  
Retention and treatment basin on Upper Rouge River  
Under construction (1994–1996)*



*C. Redford Township CSO retention and treatment facility  
Upper Rouge River—completed and operational (1999)*

## **5.2 Intermittent Separate Sanitary Sewer Overflows (SSOs)**

During storm events, separate sanitary sewers can overflow when large amounts of rainwater or snowmelt enter the system. Overflows can occur due to the inadequate design capacity of the original sewer system and/or sewer pipe or pump station failures. SSOs can also occur due to excessive inflow/infiltration into the sanitary sewer system. In extreme cases, sanitary sewage backup into basements requires the installation of temporary pumps to discharge excess sanitary wastewater into storm water conveyances. Intermittent and infrequent SSOs are difficult to detect and sometimes even more difficult to control. Major efforts are under way to locate and resolve SSOs throughout the Rouge River watershed, including the construction of new pump stations, larger sewers, and equalization basins. Several suspected SSO sources are under investigation in the Upper Rouge River. Currently, federal SSO proposed regulations are under review. While existing state and federal regulations prohibit discharges due to SSOs, the MDEQ is exercising enforcement discretion and design criteria in its program to correct existing SSOs.

### 5.3 Illicit Discharge of Waste into Storm Sewers

As part of the general storm water permit requirements, all communities and agencies participating in the Upper Rouge River SWAG have submitted a plan to identify and correct illicit waste connections to storm drains under their control (e.g., illegal connections of sanitary waste, floor drains, etc. to separate storm drains). Each agency and community is conducting extensive monitoring and sampling to detect where waste may be illegally or inadvertently discharged into separate storm sewer systems. These investigations may involve visual observations during dry weather to detect suspicious discharges entering the river, dye testing of sanitary sewer lines, and bacteria sampling in the river or in storm water manholes upstream of locations where suspicious discharges have been observed. Once the source of an illicit discharge is located, corrective actions are being taken under local ordinances and building codes.

### 5.4 Failing Onsite Disposal Systems (Septic Tank/Drain Fields)

Preliminary investigations by county health officials in Wayne, Washtenaw, and Oakland counties during the past few years have indicated that older OSDS have a high rate of failure. Failed septic systems can lead to the discharge of untreated sanitary waste directly or indirectly into nearby waterways through storm drainage systems.

Washtenaw and Wayne counties have enacted new ordinances that require the inspection and certification of OSDS when a property is offered for sale. Local ordinances in some communities require owners of failed OSDS to hook up to sanitary sewers if they are available. Where inspection programs indicate that the OSDS is not functioning properly, property owners are required to take corrective action. Several Oakland County communities in the Upper Subwatershed have drafted local ordinances to require inspection of OSDS at the time a property is sold.

### 5.5 Non-Point Source Pollution (Erosion and Runoff)

Federal and state regulations require permits for any construction activity (a) involving the clearing of five or more acres of land or (b) on properties adjacent to watercourses. Under state rules, local agencies are responsible for administering soil erosion and sedimentation control permits for construction activities. New Phase II federal storm water regulations will require local permits for construction sites involving land disturbance of one acre or larger.

## 4. UNCONTROLLED EROSION AT CONSTRUCTION SITE



*Commercial development in Upper Rouge River Subwatershed (1998)*

As part of the efforts to restore the Rouge River, several workshops and seminars have been conducted for both public officials and private contractors to improve the control of erosion during construction. The application of improved soil erosion control techniques/materials, better site monitoring, and enhanced enforcement are elements of the pollution prevention efforts under way by local and state agencies to reduce river sedimentation problems caused by soil erosion.

Runoff from agricultural lands is not significant in the Upper Subwatershed. However, the application of pesticides and/or fertilizer and unconfined animal waste on farm operations and pet waste washed from streets and sidewalks may be a source of pollution in isolated areas. Perhaps more importantly, the Upper Rouge River is at potential risk for contaminated runoff from residential subdivisions, golf courses, or other managed open lands where overuse or misuse of chemicals, including fertilizers, pose a risk to the river. Much of the runoff in the urbanized portion of the Upper Subwatershed finds its way to the river through publicly owned and maintained storm sewers or drains.

### **5.6 Storm Water Discharges**

Storm water can carry a variety of contaminants from streets, roofs, parking lots, roadways, lawns, and other surfaces. Oils, grease, heavy metals, lawn chemicals, road-deicing materials, cleaning agents from car washing, paper, plastic, yard waste, and other discarded materials are carried by storm water into the river. Homeowners, businesses, and public landowners need to be aware of the connection between storm water and the quality of the river. As part of the general storm water permit requirements, all public agencies within the Upper Subwatershed have submitted a public education plan. These plans outline the steps that will be taken to provide information and education for citizens, businesses, and public agencies on reducing the contaminants in storm water.

Excessive storm water runoff can cause flooding, bank erosion, and the destruction of fish and wildlife habitat in the river. As the amount of impermeable surfaces increases in the subwatershed, flood flows will increase in frequency and severity unless effective management practices are required to detain storm water runoff. Onsite detention of storm water and/or enhanced regional storm water detention effectively reduce the impacts of storm water flows by slowing the release of runoff following storm events. Storm water detention facilities also serve to reduce the amount of sediment and other debris entering the river, and, if designed properly, capture 60–90 percent of the nutrients that might otherwise pollute the river. New storm water regulations recently adopted in Washtenaw and Wayne counties provide for enhanced site designs to minimize storm water runoff.

## **5. IMPERVIOUS SURFACES THAT CAN CONTRIBUTE TO STORM WATER RUNOFF**



*A. New commercial development constructed with onsite storm water detention  
Upper Rouge River Subwatershed, Northville Township*



*B. Typical residential subdivision built in the 1950s  
Upper Rouge River Subwatershed, Redford Township*

**6. PROBLEMS IN THE UPPER ROUGE RIVER CAUSED BY EXCESSIVE FLOWS**



*A. Flooding at Western Golf and Country Club  
Bell Branch, Upper Rouge River*



*B. Street flooding in the Rouge River watershed*



*C. Severe bank erosion  
Tarabusi Creek, Upper Rouge River*

## 5.7 Rouge Report Card Indicators – Upper Subwatershed

The RRAC's *Rouge Report Card* summarizes data and objectives for 18 indicators of watershed conditions, ranging from water quality to government stewardship. Exhibit 20 summarizes these eight indicators for the Upper Rouge River Subwatershed.

### EXHIBIT 20

#### Status of Selected Rouge Report Card Indicators in the Upper Rouge River Subwatershed

Indicator	Observation(s)	Rouge River Watershed Trends* RRAC Report Card
Toxic Chemicals & Fish Consumption Advisories	—Fish consumption advisory still in effect —Some toxicity at 8 Mile Rd. and Inkster Rd.	↑
Water Quality/Aquatic Life	—Dissolved oxygen monitoring (1993–98) in Upper Subwatershed indicated several locations do not meet state standards —Some toxicity at 8 Mile Rd. and Inkster Rd.	↔
Riparian Zone	Existing parks provide habitat protection	↓
Wetlands, Woodlands, & Meadows Wildlife	Concern for habitat loss in upper portion of subwatershed —Mink observed in Farmington	↓
Stream Flow & Habitat	Excessive flow variation a problem; may worsen in upper portion of subwatershed as development increases	↓
Fish	Sensitive species in Minnow Pond Drain and Seeley Drain	↔
Benthos	Sensitive species found near Grand River Ave.	↓

SOURCE: Rouge Project Office, 2000.

\*↑ = condition improving; ↓ = condition deteriorating; ↔ = condition unchanged