

## Chapter 7 Methods To Measure Progress

Measuring the ultimate effectiveness of the Subwatershed Management in meeting the 6 goals that have been established will take years if not decades. The significant challenge is to measure both the process for permit compliance and progress toward water quality standards. Each Storm Water Pollution Prevention Initiative (SWPPI) developed by communities under the Voluntary Permit will include a set of actions with implementation schedules and corresponding methods to measure progress. In some cases these will entail reporting on completion of projects & studies, implementation of BMPs, development of ordinances and/or public involvement programs; In other cases water quality parameters such as dissolved oxygen, bacteria counts, suspended solids, and phosphorus concentrations will be monitored and evaluated. To evaluate the long-term progress, the Lower 2 SWAG, the RPO and the USGS have worked cooperatively to establish a long-term water quality monitoring program at the current USGS gauging stations. This data coupled with the associated flow information will allow the SWAG to evaluate the cumulative affect of the actions taken by each community. The measurement program presented below is intended to be a low-cost means of evaluating incremental progress toward achieving water quality standards on a subwatershed basis. Compliance of each individual permittee will be addressed in their SWPPI.

### 7.1 LONG TERM GOAL 1: IMPROVE WATER QUALITY IN THE RIVER AND RESTORE IMPAIRED USES

The short term objectives/actions (through 2005) identified under this goal with methods to measure progress are as follows:

#### 1a. Reduce pollutant loading in storm water.

Measures: Rather than absorb the expense of widespread chemical monitoring, an alternative based on biological monitoring is proposed. Within nine months of the expiration of the Wayne County General Storm Water Permit fish populations will be sampled at two locations in the Lower 2. Increasing populations of game fish and/or sensitive fish species would be an indication of improving environmental conditions in the river.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

In addition, the aquatic habitat quality will be evaluated at these two locations using the MDEQs GLEAs 51 protocol.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

#### 1b. Reduce contribution of nutrients.

Measures: Data collected by the RPO (as well as national data) indicates that the largest contribution of nutrients occurs as a result of wet weather events. Continuation of the RPO Long-Term Monitoring Network will provide updated information. Wet weather sampling will be pursued under various grant

programs. These data will be compared with earlier data to evaluate progress. These data will also serve as a benchmark for prioritizing additional efforts under future permits as well as the need for future data collection efforts.

Responsible Party: Wayne County & Communities, RPO

Reporting Method: Storm Water Permit Annual Reports

1c. Increase dissolved oxygen in the River.

Measures: As part of the ongoing monitoring efforts, continuous DO data will be collected at the USGS station. This data will be used to determine the frequency that the WQS of 5mg/l is violated.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

1d. Continue discussion on watershed issues within local government.

Measures: Report continued participation in SWAG and other appropriate organizations. Number of meetings, goals reached, etc.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

## 7.2 **LONG TERM GOAL 2: REMOVE SOURCES OF POLLUTION THAT THREATEN PUBLIC HEALTH**

The short term objective/actions (through 2005) identified under this goal with methods to measure progress are as follows:

2a. Identify and remove illicit discharges.

Measures: Report percentage of stream segments that have been surveyed. Percentage or total number of significant sources that have been remediated. Percentage of time *E. coli* measurements from within the Lower 2 Rouge River exceed 1,000 colonies/100/ml.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

2b. Continue to reduce combined sewer overflows.

Measures: Report the percent complete of construction relative to the MDEQ approved corrective action plans. Report the total number & estimated volume of CSOs.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

2c. Develop detailed plans and approved schedules for addressing known SSOs.

Measures: Completion of plan and implementation schedule. Percent complete based on schedule.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

### **7.3 LONG TERM GOAL 3: EDUCATE THE PUBLIC REGARDING THEIR IMPACTS ON THE RIVER AND THE RIVER'S POTENTIAL AS A COMMUNITY ASSET**

The short term objectives/actions (through 2005) identified under this goal with methods to measure progress are as follows:

3a. Conduct public education and public participation programs.

Measures: Report the number of programs conducted, number of people/schools/organizations participating. Evaluation of effectiveness through surveys. Provide photographic documentation of events.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

3b. Encourage riparian landowners to manage their waterfront as an asset to enhance property values and habitat.

Measures: Report the total number of riparian landowners and percent contacted through various means. Provide documentation of educational material provided. Evaluate effectiveness through surveys. Report on grassroots stewardship organizations.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

3c. Encourage use of parklands adjacent to the River.

Work with Wayne County parks as well as local park authorities to mark the publicly-owned riparian lands available for low-impact use. Prepare a plan that is embraced by all stakeholders.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

3d. Inform residents of the costs and benefits involved in restoring the River.

Measures: Provide copies of brochures and educational material that are developed. Report on number of citizens contacted and the variety of methods used (television, print media, mailings, public meetings, fairs, etc.). Evaluate effectiveness of programs through surveys.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

### **7.4 LONG TERM GOAL 4: ENHANCE AND PRESERVE FISH AND WILDLIFE HABITAT, ESPECIALLY ALONG THE RIVER**

The short objectives/actions (through 2005) identified under this goal with methods to measure progress are as follows:

4a. Reduce flood and bank erosion damage to riparian properties and habitat.

Measures: Water velocity and turbidity relative to historic values. Number of stream segments evaluated for erosion problems. Development of a plan, percent implementation of plan.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

4b. Continue to seek grants to implement projects.

Measures: Number of grants applied for, received. Partnerships developed. Volunteer hours. Dollars received.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

4c. Identify areas where public acquisition of lands or the use of conservation easements will benefit recreation and habitat values.

Measures: Number of areas identified and programs/schedules for acquisition.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

4d. Maintain and protect identified meadows and wildlife corridors.

Measures: Number of areas identified and plan for maintaining and protecting.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

4e. Establish a vegetative buffer to protect riparian habitat along the River and its tributaries.

Measures: Complete report and evaluation. Develop implementation plan and report on percent complete. Number of acres acquired or in conservation easements.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

## **7.5 LONG TERM GOAL 5: MINIMIZE THE AMOUNT OF SOIL EROSION AND SEDIMENTATION.**

The short term objectives/actions (through 2005) identified under this goal with methods to measure progress are as follows:

5a. Continue to improve on effective maintenance of catch basins, detention basins and related infrastructure, including the removal and disposal of debris and sediments.

Measure: Summarize the progress of locally initiated maintenance programs.

Responsible Party: Wayne County & Communities

Reporting Method: Storm water Permit Annual Reports

5b. Reduce solids loading to River.

Measure: The long-term water quality monitoring program will include regular monitoring of suspended solids. Reductions in this parameter will document the incremental progress in the variety of storm water management efforts.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

5c. Stabilize banks that are significant sources of sediment to the River.

Report on the length of streambanks that have been stabilized.

Responsible Party: Wayne County & Communities

Reporting Method: Storm Water Permit Annual Reports

## 7.6 **LONG TERM GOAL 6: REDUCE WATER VOLUMES AND VELOCITIES DURING STORM EVENTS**

The short term objectives/actions (through 2005) identified under this goal with methods to measure progress are as follows:

6a. Encourage on-site detention of storm water for those sites not under local requirement.

Provide a list of newly constructed on-site detention facilities and the type of outlet used. Also provide a list of detention ponds in which the outlets have been modified to encourage water quality protection.

6b. Require on-site detention/retention of storm water and snow melt for new commercial, multifamily residential and industrial development and redevelopments (where possible).

This goal was fulfilled by the passage of the Wayne County Storm Water Control Ordinance.

6c. Encourage innovative design for new developments to reduce impermeable surfaces and encourage infiltration of water.

Measures: Keep existing requirements and strengthen where possible. Educate developers about BMPs. Report number of innovative design elements used.

6d. Protect wetlands and other natural features that serve to store water during storm events.

Measures: Educate permit review staff and developers regarding BMPs & wetland protection. Report design modification requests and requirements.

Responsible Party: Communities and Wayne County

Reporting Method: Storm Water Permit Annual Reports



*Ford Field Restoration Project in Dearborn*