

## 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 and presents a significant challenge. 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 this will entail reporting on completion of projects & studies, implementation of BMPs, development of ordinances and/or public involvement programs. In other cases water quality standards such as dissolved oxygen, bacteria counts, suspended solids, and phosphorus concentrations will be monitored and evaluated. The following general measures are proposed as options and opportunities to evaluate progress toward watershed-wide goals. To evaluate the long-term progress, the Main 3-4 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.

Of equal importance is the recognition that the Main 3-4 will continue to experience the impacts of CSOs, SSOs and contaminated sediments beyond the 5-year timeframe of the short term objectives/actions. For this reason comprehensive chemical monitoring is not proposed in the near term. As the affects of the proposed capital projects are realized ( Phase II CSO control, SSO control and restoration of the paved portions of the river channel ) the improvements in water quality will also be realized.

### 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: Chemical analysis will be collected.

1b. Reduce contribution of nutrients.

Measures: Instream phosphorus concentration must meet standards/guidelines. No nuisance algae blooms.

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:** Rouge Program Office

**Reporting Method:** Annual Report

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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Main 3-4 Communities and Wayne County Annual Reports

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

The short term objectives/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. Total number and locations of segments where *E. coli* exceeds 1,000 colonies/100ml. Percentage or total number of significant sources that have been remediated.

**Responsible Party:** Main 3-4 Communities, Wayne County

**Reporting Method:** Annual reports

2b. Continue to reduce combined sewer overflows.

Measures: Report percent complete relative to corrective action plan. Report total number & estimated volume.

**Responsible Party:** Main 3-4 Communities and Wayne County

**Reporting Method:** 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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

## 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: Number of programs conducted, number of people/schools/organizations participating. Evaluation of effectiveness through surveys. Number of visitors at the U-M/D Environmental Interpretive Center. Provide photographic documentation of events.

**Responsible Party:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Reports, Friends of the Rouge Annual Report

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

Measures: Report 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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

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

Measures: Periodic attendance/activity surveys.

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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

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

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

4a. Address concrete channel to improve habitat for fish & wildlife.

Measures: Completion of feasibility study. Selection of alternative. Percent complete of designs and specifications. Percent complete of construction. GLEAS monitoring of fish and benthic organisms.

**Responsible Party:** Main 3-4 Communities, Wayne County, MDEQ.

**Reporting Method:** Annual Report

4b. 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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

4c. Continue to seek grants to implement projects.

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

**Responsible Party:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

4d. 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

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

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

4f. 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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

## 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.

Measures: Report on methods/procedures investigated and either implementing or dismissed.

5b. Reduce solids loading to River.

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

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

Measures: Streambank inventory completed; sites prioritized; schedule developed to stabilize.

**Responsible Party:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

## 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.

Measures: Number of sites identified and number of detention measures implemented.

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

Measures: See 6a

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.

**Responsible Party:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report

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:** Main 3-4 Communities and Wayne County

**Reporting Method:** Annual Report