

Chapter 10 – Evaluation Process

A process for evaluating the effectiveness of the USR WMP over time is important because it provides a means to reassess the actions and projects that are implemented to achieve the water quality and natural resource protection and improvement goals. In addition, as the landscape continues to change over time and changes to water quality can be further assessed, the opportunity to redefine goals and priorities can be made. Monitoring also has a host of other benefits for watershed management by:

- Enabling water quality managers to further identify existing or emerging water quality issues and concerns.
- Facilitating responses to emergencies such as spills and floods and helps water quality managers target specific pollution prevention or remediation programs to address these problems.
- Determining whether program goals, such as compliance with pollution regulations or implementation of effective pollution control actions, are being met.

10.1 Watershed Plan Evaluation Team

In order to facilitate the task of evaluating the effectiveness of watershed plan implementation over time, a framework for a series of working groups will help to provide a useful feedback loop for whether or not the goals and objectives of the watershed plan are being attained. The working groups would ideally be made up of the following groups of stakeholders:

- Managers, planners, coordinators and their staff members
- Boards and steering committees
- Volunteers (citizens and watershed stewards)
- Environmental Interest Groups
- Funding Groups

Figure 10.1 provides an example schematic of a two-tier advisory committee structure that may be utilized to provide oversight on the implementation of the USR WMP. A multi-tiered advisory structure is better suited for larger watershed planning projects, such as in the USR, as opposed to a single-tiered structure which is better suited for smaller, short-term projects (Heathcote, 1998).

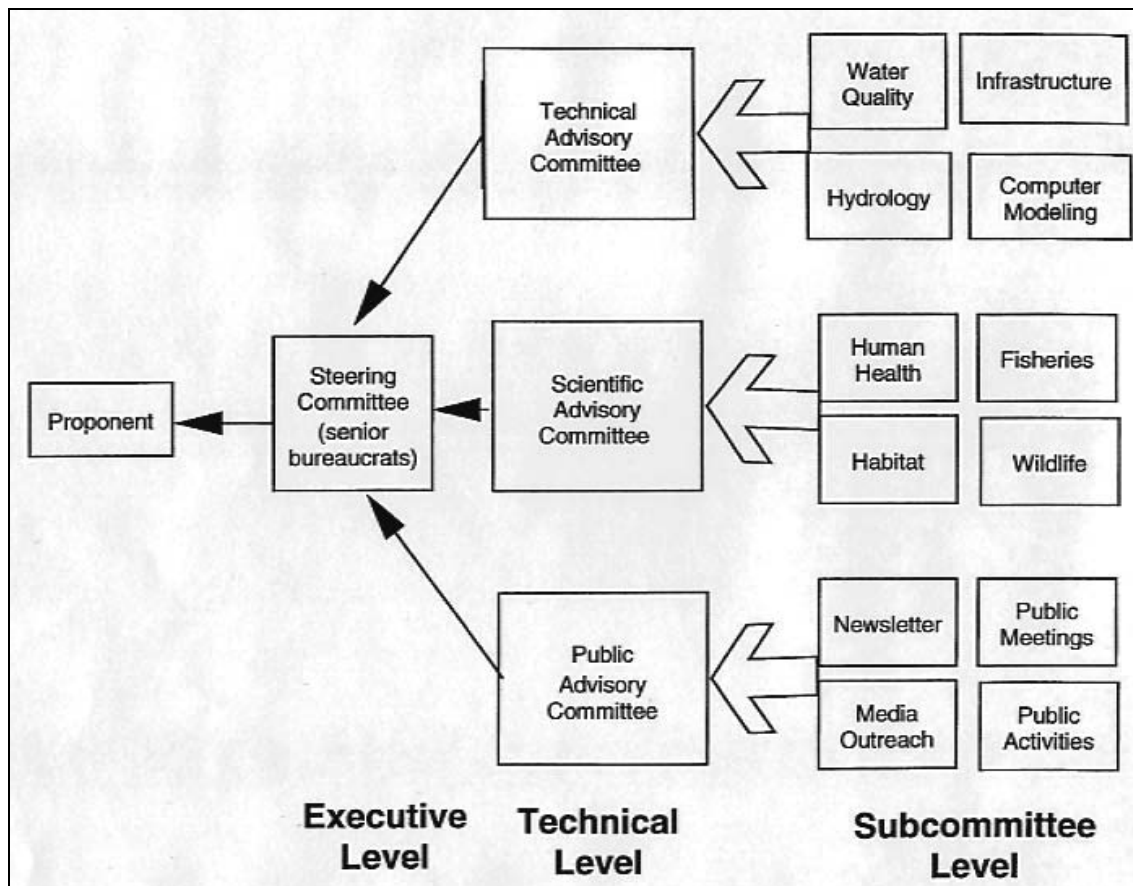


Figure 10.1 A Typical Two-Tier Advisory Committee Structure (Heathcote, 1998)

This schematic outlines an advisory committee approach that could be used by the USR WAG to review, implement, and update the watershed plan over time. The “proponent” in this schematic would be the LCDC office (lead agency) which would ultimately coordinate all actions recommended by the smaller committees upon review of the activities underway in the watershed. The “steering committee” might be the USR WAG (storm water program managers and staff) where final decisions could be made prior to ultimate coordination by the LCDC. The “advisory committees” might be staffed by land use planners, commissions, boards, interested citizens, environmental group advocates, scientists, etc. that will pull together various aspects of the data and results during the implementation phases of the WMP (i.e. water quality data, public education initiatives, illicit discharge investigations, etc.). It will be important to include public representatives in all of these committees, as well as community leaders in the decision-making process, as these individuals are in a position to explain and influence community opinion and help to build support for needed changes.

10.2 Watershed Plan Revisions

The USR WAG is required to submit a joint revised WMP by November 1, 2007, or a written determination not to revise the plan, as required by each participant’s COC. The USR WAG will continue to meet on a regular basis (quarterly), with oversight through the LCDC’s office to ensure that

the WMP is being implemented on a watershed-wide basis. The LCDC's water resources coordinator will spearhead the coordinated effort. In addition, updates regarding watershed plan implementation and activities related to the Phase II storm water efforts will be updated through the LCDC's stormwater website.

10.3 Watershed Plan Implementation

Each Phase II community and agency must submit a SWPPI by May 1, 2006 that details the actions (BMPs) they will implement to meet the goals and objectives of the USR WMP. The MDEQ will review these SWPPI's to ensure that actions meet Phase II requirements. The MDEQ will also review the annual reports that the communities will submit to report on progress towards meeting the goals and objectives of this WMP, as well as the activities related to their IDEP and PEP. These reports also help to ensure that compliance is being met for the objectives of the Phase II program, while at the same time keeping the USR WAG on track to achieving the broad goals of water quality and natural resource protection and improvement.

To ensure successful implementation, there are nine (9) key elements that should be focused on (Heathcote, 1998) as summarized in Table 10.1.

Table 10.1 Nine Key Elements of Successful Watershed Plan Implementation

1. Appoint a single lead agency to act as an advocate and facilitator for the plan with the community and with political representatives.
2. Strong linkages to existing programs, including local and regional land use planning processes, water quality and flow monitoring programs, and similar programs, to optimize use of available information and minimize duplication of effort.
3. Clear designation of responsibilities, timetables, and anticipated costs for project actions.
4. Effective laws, regulations, and policies to provide a framework for the tasks identified in Element 3.
5. Ongoing tracking of the degree of implementation of management actions and of the success of those actions once implemented.
6. Ongoing monitoring and reporting of progress, both to assess the effectiveness of individual actions and to sustain public and political interest in and enthusiasm for the plan.
7. Ongoing public education and communication programs to consolidate and enhance the social consensus achieved in the planning process.
8. Periodic review and revision of the plan.
9. Adequate funding for these activities.

Table 10.2 outlines the methods and general measures that have been identified to evaluate the implementation of the WMP over time.

Table 10.2 Methods of Evaluation for the Upper-2 Shiawassee River Watershed Management Plan

Method	Measure
MDEQ Review of SWPPI's and Annual Reports	<ul style="list-style-type: none"> Evaluate compliance with the Phase II stormwater permit program to ensure that the goals and objectives of this WMP are being met, and that the actions each permittee has committed to implementing are done so in a scheduled and measurable manner.

Table 10.2 Methods of Evaluation for the Upper-2 Shiawassee River Watershed Management Plan (continued)

Method	Measure
USR WAG Meetings Technical Sub-committee Meetings Steering Committee Meetings Advisory Committee Meetings	<ul style="list-style-type: none"> • Evaluate plan implementation on a regular basis and assess progress towards meeting plan goals and objectives. • Provide recommendations on plan modifications to better suit meeting goals and objectives.
Physical and Chemical Water Quality Monitoring; Biological Life Measurements	<ul style="list-style-type: none"> • Evaluate habitat scores for fish, macroinvertebrates and in-stream habitat based on reports produced by MDEQ staff as part of the five-year watershed review cycle (sample data available for this plan was primarily based on 1995 and 2000 data; next evaluation set to take place in 2005). <ul style="list-style-type: none"> ○ Goal for improved scores throughout plan implementation to reflect improvement in water quality/habitat in the watershed. • Monitor the results of the LCDPH's <i>E. coli</i> monitoring results at select public beaches throughout the watershed. • Establish a water quality monitoring program to measure changes in water quality over time. This program would be most cost effective as a volunteer-based program, such as the CLMP, or to incorporate school students studying local watercourses as part of their science curriculum, such as at the Hartland Consolidated Schools. • Assess pH, DO, temperature, nutrients, biological oxygen demand, <i>E. coli</i>, total suspended and dissolved solids, etc. to ensure compliance with Michigan Water Quality Standards (included in Appendix P).
Stakeholder Surveys/Social Indicators	<ul style="list-style-type: none"> • Redistribute SEMCOG's Public Awareness Survey (or an appropriate substitution) during every permit cycle in order to realize behavior changes over time. • Distribute surveys at local events/workshops/seminars/public meetings to gauge watershed awareness and public perceptions of water quality.
Photographic Surveys	<ul style="list-style-type: none"> • Photographic surveys of before and after of local projects that are implemented. • Photographic surveys of road/stream crossing stabilization projects.
Programmatic Indicators	<ul style="list-style-type: none"> • Report on the number, type, and location of BMPs implemented in annual reports to the MDEQ. <ul style="list-style-type: none"> ○ Structural Controls <ul style="list-style-type: none"> ▪ Ordinances, Development Standards, Codes adopted/amended ▪ Number and types of training sessions conducted ▪ Number of permits issues/compliance records ○ Vegetative Controls ○ PEP Actions <ul style="list-style-type: none"> ▪ Number of mailings ▪ Number and type of literature distributed ▪ Number of newspaper ads or press releases ▪ Number of workshops/presentations conducted ▪ Number of watershed signs erected ▪ Number of volunteer efforts conducted ○ IDEP Actions <ul style="list-style-type: none"> ▪ Number of outfalls investigated ▪ Number of illicit corrected/eliminated

Table 10.2 Methods of Evaluation for the Upper-2 Shiawassee River Watershed Management Plan (continued)

Method	Measure
BMP Results (Benefits/Improvements)	<ul style="list-style-type: none"> • Compute the nutrient and sediment loading reductions based on number and type of BMPs implemented. • Conduct direct assessments of resources protected/improved <ul style="list-style-type: none"> ○ See biological/chemical/physical monitoring/assessments ○ See photographic/social indicator surveys
Hydrologic Flow Studies	<ul style="list-style-type: none"> • Evaluate changes in hydrologic flow over time—are flows meeting conditions that meet the in-stream conditions for suitable habitat for fish and other aquatic organisms, along with maintaining the integrity of the physical characteristics of the stream itself (stable streambanks, stable substrates, more gradual increase in flow inputs during and after precipitation and runoff events).

It is the hope that the planning and implementation process becomes a self-sustaining process with ever-increasing participation from stakeholders, and that the focus is on implementing the most efficient and cost-effective strategies for protecting the watershed.