

## Appendix A

### **Watershed Management Planning Toolbox**

The basis of the Michigan Department of Environment Quality (MDEQ's) Nonpoint Source (NPS) Program is watershed management; therefore, the projects we fund through the Request for Proposals (RFP) process are to develop watershed management plans and to implement nonpoint source activities in plans we have approved. We require plans developed or implemented through our program to meet the Federal and State guidance discussed below and referenced in the body of the RFP. The specific criteria in the Federal and State guidance will be used by the Water Bureau (WB) staff in the review and final approval of submitted plans.

Watershed management planning has been described as more of an art than a science. While we require minimum standards and content be met, it is our hope that the plans produced through the MDEQ NPS Program are above all appropriate to the watershed and easily usable by the watershed stakeholders.

The information below is a toolbox of resources, tips, and links about watershed planning. It was intended to help grant applicants, grantees developing contracts for MDEQ nonpoint source watershed planning projects, and grantees working on watershed plans understand what is required and where you might want to focus your time and resources.

This toolbox consists of:

1. Descriptions of, and links to the State and Federal guidance and criteria. Specifically the State's "Blue Book" and the Federal "Handbook for Developing Watershed Plans."
2. A draft checklist prepared by Environmental Science and Service Division (ESSD) staff. We believe this checklist represents the current expectations for plans meeting the required elements of State and Federal guidance as well as program needs. Watershed management plans incorporating these elements should meet contract obligations for watershed management plan content.
3. Guidance/Recommendations on size and scale for watershed planning.
4. Focus of activities for watershed planning.
5. Process related information for watershed planning.

#### **1. State and Federal Guidance and Criteria:**

**State Guidance: Clean Michigan Initiative (CMI) Administrative Rules on Watershed Management Planning** (Part 88, Water Pollution and Environmental Protection Act, 1994 PA 451, MCL 324.8808).

[Administrative Rules promulgated in October 1999 for the CMI Nonpoint Source Pollution Control Grants](#), require watershed management plans be approved by the MDEQ. In addition, the rules require the MDEQ to use CMI NPS funds to implement only MDEQ-approved watershed management plans. The MDEQ produced a guidebook (the "Blue Book") for the development of watershed management plans that includes the required CMI elements and examples. The Guidebook is available at: <http://www.deq.state.mi.us/documents/deq-swq-nps-Watershed.pdf>.

**Federal Guidance: The United States Environmental Protection Agency's (U.S. EPA's) Nine Minimum Elements of Watershed Management Planning**

To ensure that Section 319 projects make progress towards restoring waters impaired by nonpoint source pollution, watershed-based plans that are developed or implemented with Section 319 funds must include the nine minimum elements of watershed management planning. The U.S. EPA believes that these nine elements are critical to assure that public funds are used effectively. The U.S. EPA has developed a guidebook describing these elements and including information on how these elements can be met. The guidebook is available at: [http://www.epa.gov/nps/watershed\\_handbook/](http://www.epa.gov/nps/watershed_handbook/).

Additional guidance on the [nine minimum elements of watershed management planning](#) is also available on the NPS Program Web site at [www.michigan.gov/deqnps](http://www.michigan.gov/deqnps).

## **2. Required Elements to Meet both State and Federal Watershed Planning Guidance**

The ESSD NPS Grant staff believes this [draft checklist](#) represents the current expectations for plans meeting the required elements of State and Federal guidance as well as program needs. The checklist has been modified to include definitions and examples for each element. Watershed management plans incorporating these elements should be approvable by the WB and meet contract obligations for watershed management plan content.

## **3. Notes on Size and Scale for Watershed Planning**

Recommendations from Watershed Planning Guidance.

### **CMI (MDEQ's Blue Book):**

There are no minimum or maximum size limits, but the area covered should have hydrologically distinct boundaries.

It is also possible to have a geographic area covered by more than one watershed management plan. For example, there could be a distinct watershed management plan for the Chippewa River, even though the Chippewa River is also covered under a larger plan for the Tittabawassee River. The watershed management plan written specifically for the Chippewa River could be justified if it provides greater detail for implementing tasks, such as specific best management practices at specific sites. Conversely, the larger plans can be important in providing a regional perspective and identifying what priority implementation tasks in the Chippewa River have relevance to the other rivers in the watershed. The order in which these plans were developed would not matter.

### **U.S. EPA/319: Fiscal Year 2004 guidance:**

#### **E. Scale and Scope of Watershed-Based Plans**

The watershed-based plan must address a large enough geographic area so that its implementation will address all of the sources and causes of impairments and threats to the waterbody in question. These plans should include mixed ownership watersheds when appropriate to solve the water quality problems (e.g., Federal, State, and private lands). While there is no rigorous definition or delineation for this concept, the general intent is to avoid single segments or other narrowly defined areas that do not provide an opportunity for addressing a watershed's stressors in a rational and economic manner. At the same time, the scale should not be so large as to minimize the probability of successful implementation.

The U.S. EPA recognizes that states already have in place or have been developing watershed plans and strategies of varying levels of scale, scope, and specificity that may contribute significantly to the process of developing and implementing watershed-based plans. We encourage states to use these plans and strategies, where appropriate, as building blocks for

developing and implementing the watershed-based plans. ... *Where these plans and strategies have been developed at a large geographic scale, they will in many cases need to be refined at a smaller watershed scale to provide the information needed to produce effective watershed-based plans.* (MDEQ emphasis)

**From presentation by Michael Scozzafava (U.S. EPA WMP Reviewer),** From a slide titled “Common Mistakes.”

Scale - Write a plan for a watershed with 20+ Total Maximum Daily Loads (TMDLs) or over ten 12-digit HUC watersheds.

### **U.S. EPA Handbook**

A watershed management plan should address a geographic area large enough to ensure that implementing the plan will address all the major sources and causes of impairments and threats to the waterbody under review. Although there is no rigorous definition or delineation of this concept, the general intent is to avoid a focus on single waterbody segments or other narrowly defined areas that do not provide an opportunity for addressing watershed stressors in a rational, efficient, and economical manner. At the same time, the scale should not be so large that it hampers the ability to conduct detailed analyses or minimizes the probability of involvement by key stakeholders and successful implementation. If you select a scale that is too broad, you might be able only to conduct cursory assessments and will not be able to accurately link the impacts back to the sources and causes.

Plans that bundle subwatersheds with similar sets of problems or address a common stressor (e.g., sediment, nutrients) across multiple related watersheds can be particularly useful in terms of planning and implementation efficiency and the strategic use of administrative resources.

### **The Center for Watershed Protection**

When asked about the wide gulf between watershed planning and implementation, our admittedly unscientific sample cited one or more of the following reasons for poor watershed management plan outcomes:

*Reason No. 1: Plan was conducted at too great a scale.* Scale was considered the *critical* factor in preparing effective local watershed management plans. Quite simply, when watershed management plans were conducted on too large of a scale (50 or more square miles), the focus of the plan became too fuzzy. Too many different subwatersheds had to be considered, and important differences in stream quality and development patterns could not be isolated. Land use changes were too complex to forecast. The critical link between individual land use decisions or restoration projects and the watershed management plan was broken. While the number of stakeholders involved in the plan proliferated, actual responsibility for implementing the plan diminished. Costs for both monitoring and watershed analysis skyrocketed. A bewildering number of non-urban water quality sources, issues, and problems complicated the picture.

## **4. Focus for Watershed Planning**

In April of 2008, the ESSD held a two-day discussion focused on watershed management planning. All ESSD Project Administrators, as well as several WB NPS Program central staff attended. A portion of the discussion focused on prioritizing the state and federal required elements of a NPS watershed management plan. The results are presented below. Please note that these results reflect only the opinions of those involved in the discussion and do not represent NPS Program guidance or concurrence.

Recent reviews of watershed management planning proposals and completed watershed management plans seemed to indicate misplaced effort in addressing the state and federal required elements. Staff felt that in many cases too many resources were devoted to some elements at the expense of others. It is hoped the following will result in a more balanced approach to watershed planning in Michigan. Our overall goal remains achieving the best possible watershed management plans that are realistic, inclusive, holistic, and that also meet the required state and federal criteria.

The discussion was based on two questions: (1) What are the essential elements of a watershed management plan (outside the U.S. EPA's Nine Elements)?, and (2) How do we prioritize these and the Nine Elements?

The group rated the following as 1, most important:

- Institutionalizing watershed protection, as appropriate (from CMI rules).
- Local ordinance review and recommendations, as appropriate (from CMI rules). Review and recommendations should be summarized in the plan.
- Better characterization and interpretation of watershed data (geographic scope is required in CMI) including prime agricultural land, soils info, warm water/coldwater fishers). A map should be included.
- *Element A*: Identification of the causes and sources (and related designated uses and pollutants).
- *Element C*: Management measures needed.
- *Element I*: Monitoring to determine effectiveness of the implementation efforts.

We rated the following as 1.5:

- *Element F*: A schedule for implementing the management measures.

We rated the following as 2, moderately important:

- *Element B*: Load reductions.
- *Element E*: Information and education to enhance public understanding and obtain participation in implementing management measures.
- *Element H*: Criteria to determine whether load reductions are being achieved over time and if not, criteria for determining whether the plan needs to be revised.

We rated the following as 3, least important:

- *Element G*: Description of interim measurable milestones.
- *Element D*: Estimate of the amount of technical assistance needed, costs, and authorities.

We also determined that the importance of the wetlands strategy and the stream morphology assessment differs depending on the watershed.

## **5. Watershed Planning Process**

The NPS Program watershed management planning projects must complete a plan meeting the State and Federal criteria for content. The MDEQ's final review and approval, as well as contractual obligations, are based on these content requirements. While the State and Federal

guidance are both written from this content perspective, both also contain helpful information pertaining to the process and organization of watershed management planning projects.

The ESSD realizes that when it comes to watershed management planning processes, one size does not fit all. The processes included in the State and Federal guidance have been proven to produce sound watershed management plans; however, we present other models here for your consideration.

Please remember that regardless of the process used, the final plan will be judged against the State and Federal Criteria for the CMI and Clean Water Act Section 319, respectively (see Section 2 of this Appendix).

## **The Six Steps of Watershed Planning (Tetra Tech Presentation from the MDEQ Watershed Planning Workshops).**

### **STEP 1: BUILD PARTNERSHIPS**

- ID stakeholders.
- ID issues of concern.
- Set preliminary goals.
- Develop indicators.
- Conduct outreach.

### **STEP 2: CHARACTERIZE WATERSHED**

- Gather existing data.
- Create data inventory.
- ID data gaps.
- Collect additional data, if needed.
- Analyze data.
- ID causes and sources.
- Estimate pollutant loads.

### **STEP 3: FINALIZE GOALS AND ID SOLUTIONS**

- Set goals and management objectives.
- Develop indicators/targets.
- Determine load reductions needed.
- ID critical areas.
- ID management measures needed.

### **STEP 4: DESIGN IMPLEMENTATION PROGRAM**

- Develop implementation schedule.
- Set interim milestones.
- Determine how you will measure success.
- Develop monitoring component.
- Develop evaluation process.
- ID technical and financial assistance needed.
- Assign responsibility.

### **STEP 5: IMPLEMENT WATERSHED PLAN**

- Implement management strategies.
- Conduct monitoring.
- Conduct outreach activities.

### **STEP 6: MEASURE PROGRESS AND MAKE ADJUSTMENTS**

- Review and evaluate.
- Share results.
- Prepare annual plans.
- Make adjustments.

**The 10 Steps of Watershed Planning - Watershed Comprehensive Assessment Tool  
(from Michigan State University's Institute of Water Research).**

1. Define scope of watershed plan.
2. Gather existing data and create a data inventory.
3. Assess watershed conditions.
4. (Estimate pollutant loads) Analyze watershed to identify critical areas and prioritize pollutants.
5. Set goals and identify load reductions.
6. Identify possible management strategies.
7. Evaluate options and select final management strategies.
8. Develop education and outreach component of plan.
9. Assemble plan.
10. Implement plan

**Two of many available articles from the Center for Watershed Protection:**

[Choosing the Right Watershed Management Structure](#)

[Crafting Better Urban Watershed Protection Plans](#)