*Chapter 6:*

Maps and charts for Chapter 6: monitoring sites and map

*Monitoring and evaluation*

Watershed planning can be effective only if the goals, tasks and other plan elements are monitored and reviewed on a regular basis to assess progress and compliance. Concrete steps must be taken up front to ensure that monitoring takes place during the plan’s anticipated “lifespan” of 10 years.

To meet this important consideration the Little Manistee Watershed Conservation Council (LMWCC) is designated as the entity to oversee implementation and assess progress in meeting the goals of the WMP. The LMWCC has been in existence for more than 20 years and has demonstrated the ability both to sustain its own operations and to oversee multiple projects. The council will report its progress as appropriate to the community and to the MDEQ.

Evaluation Criteria and Milestones

In order to evaluate progress toward meeting the WMP goals and objectives, the WMP Steering Committee has approved a set of measurable milestones and evaluation criteria.

The specific milestones for each task are included in the chart of implementation tasks in Chapter 5.

Existing WMPs representing some other watersheds have listed annual goals for these milestones, attempting to predict activities in each of the 10 years of the plan’s life.

Funding availability, scheduling considerations and other issues often make it unrealistic to expect that level of specificity, especially in the outyears of the plan. For those reasons, the Little Manistee WMP divides its milestones into three time segments: An initial period of four years (including the year of plan approval); a middle period of four years; and a final three-year period.

For example, in the category of Shoreline/Streambank Issues, task 1A reads: *“Restore severe and moderate streambank erosion sites identified in CRA inventory. Use whole-tree revetments where practicable to improve aquatic habitat while stabilizing streambanks.”* The milestone columns show targets of completing five site restorations in the initial period, through 2021, continuing that work in the middle segment and completing an additional 10 sites by the end of the third time period in 2028. Staging the milestones in this fashion will allow evaluation and monitoring of progress during the life of the plan.

The LMWCC will be the permanent body tasked with monitoring progress toward attainment of each of the 12 categories of tasks and milestones. The committee will report annually on progress.

Long-Term Monitoring Plan

Present conditions are of sufficient quality to support the majority of the designated and desired uses of surface water in the Little Manistee Watershed. For that reason, much of the WMP is focused on preservation of the existing high water quality.

In furtherance of that preservation objective, the plan recognizes the need for long-term monitoring of physical, chemical, biological and social indicators in such a way as to create a baseline of information and to identify future challenges. (See Table and map).

This monitoring plan expands on activities that have been in place in the watershed since 2000, adding thermal monitoring in addition to bringing additional lakes into the program.

The purpose is to provide early notice of changes – either positive or negative – and to track multi-year trends so that the community can respond rapidly and appropriately.

The program is structured to create baseline data where none exists, and to produce trend lines to alert the community of emerging threats. Monitoring results will be evaluated relative to the following water quality objectives:

• E. coli levels in all watershed lakes and streams must meet state water quality standards.

• Dissolved oxygen levels in all watershed lakes and streams must meet state water quality standards.

• Water temperatures of all watershed lakes and streams must meet state water quality standards.

• No statistically significant increase may occur in average total phosphorus concentrations in any of the watershed’s lakes and streams

• Macroinvertebrate communities in monitored stream sites should score “good” or “excellent” using the MDEQ procedure 51 scoring metrics for wadable streams.

• Aquatic invasive species communities are reduced to the smallest population levels possible. In no geographic area should there be a statistically significant increase in the area infested by aquatic invasive species such as Eurasian milfoil.

Action is recommended at any time monitoring indicates these goals are not being met.

Much of the interpretive value of monitoring stems from the creation of data which is consistent and can be compared over time. For that reason, the plan defines a level of basic monitoring that can be sustained over the long-term, even given the limited resources of some of the participating entities.

 The monitoring described in this section should be seen as a minimum level.

The WMP seeks to improve coordination by tasking the LMWCC with the responsibility to collect, organize and distribute data generated by the member entities. In addition, it is a goal to organize all water quality data on a single Website available to the public.

This may be accomplished directly by LMWCC, or assigned to another organization such as the Manistee Conservation District, which could potentially create a database with relevant information from the Little Manistee and other watersheds in the region.

(Detail of stream monitoring plan…)