



Review Criteria	Page(s)	Example or Comment
1. The geographic scope of the watershed, background and setting		
a. The physical extent of the geographic area included in the plan is described, and a map of the watershed that clearly shows the boundaries and the location of surface waters is included.		<p>For a river or stream, the preferred scope of the plan would be from the river mouth upstream, including all headwater areas. For some of Michigan's larger river systems, it may make planning sense to focus on a particular river segment. If this is the case, distinct hydrologic boundaries should still be used for upstream and/or downstream endpoints, such as a tributary confluence or dam, and all tributaries within the segment should be included along with inputs from the upstream boundary.</p> <p>A lake watershed plan is to cover all geographic areas that drain into it. However, for lakes that are part of large river systems, it is allowable to treat the river inlet as an upstream boundary for the lake, as long as inputs from the river at that location are incorporated into the planning process.</p>
b. The area covered has hydrologically distinct boundaries.		
c. Key geo-physical/biological characteristics of the watershed that affect--or could potentially affect--water quality are described. The description provides enough detail to help guide implementation efforts.		<p>This often includes information on predominant soil types, topography, land use, hydrology, and significant natural resources. Depending on the relevance to a particular watershed planning effort, however, a statement on soil types, for example, could be as simple as "the watershed contains predominantly sandy soils." The watershed characteristics should be linked to water quality (clay soils = low infiltration rate = higher rate of onsite septs failing).</p>
d. Key social/political characteristics of the watershed that affect--or could potentially affect--water quality are described. The description provides enough detail to help guide implementation efforts.		<p>As above but for social/political factors. This would be a "watershed profile" based on census or other information. The watershed characteristics should be linked to water quality.</p>
e. The method(s) used to inventory/identify the specific pollutants, sources, and causes is described.		<p>Because a physical inventory provides the most accurate information about sources in the watershed, and because the program prefers implementation proposals with identified sites over proposals without specific sites identified, watershed planners should consider conducting a physical inventory of the entire watershed to identify the pollutants, the location of sources and their causes, and to note the impacts on water quality in the field.</p> <p>The information from physical inventories of representative subwatersheds or areas can be extrapolated for the entire watershed. However, this method will not identify specific sites/sources in the un-inventoried portions of the watershed.</p> <p>Sources may also be identified using such methods as Geographic Information System (GIS) analysis, modeling, and aerial photography, if the method used can truly identify the pollutants and sources. When geographic information systems, modeling or other similar methods are used, ground-truthing of the information is strongly recommended to assure the assessment accurately represents actual conditions in the watershed.</p>
2. Identification of the pollutants, sources, and causes impairing or threatening the waterbody		
a. The status of the designated uses as well as the desired uses of the waterbody(s) are described and include applicable references to the current "Integrated Report" and/or local data.		<p>The watershed management plan must identify the designated uses and their status (i.e. state's designated uses that are being met and listings from the current Integrated Report), as well as the desired uses of the waterbody(s) by the community.</p>

<p>b. Water quality criteria (from relevant Water Quality Standards) for the use designations are cited</p>		<p>This should consist of a table or narrative citing Michigan's specific Water Quality Criteria from either Michigan's Part 4 Rules (of Part 31, Water Resources Protection, of Act 451 of 1994) (see: http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3713-10416--,00.html) or Rule 57 (Toxic Substances) (see: http://www.michigan.gov/deq/0,1607,7-135-3313_3686_3728-11383--,00.html). This information can also be found in completed TMDLs for the area (http://www.michigan.gov/deq/0,1607,7-135-3313_3686_3728-12464--,00.html).</p>
<p>c. Impaired and threatened waters (from current Integrated Report or other assessment) are listed by segment or area</p>		<p>Report the status of designated uses for water bodies in the planning area including listings from the current Integrated Report (http://www.michigan.gov/deq/0,1607,7-135-3313_3686_3728-12711--,00.html) or other assessments. It is generally acceptable to denote only threatened or impaired designated uses, although specific mention of high quality segments could also be considered. (e.g., Total Body Contact Recreation is impaired due to E. coli between river miles XX and XXX).</p>
<p>d. The pollutants causing the impairments or threats, as well as any other causes of the impairments or threats are identified.</p>		<p>The watershed management plan is to include the pollutants causing the impairments or threats, as well as any other causes of the impairments or threats. For example, if the watershed does not meet its designated use as a coldwater fishery, the watershed plan is to identify the pollutant(s) causing the coldwater fishery to be impaired (sediment and temperature, for example).</p> <p>Note that in addition to traditional pollutants such as sediment and nutrients, watershed planners should also consider pollutants to include increased temperature and increased hydrologic flow.</p>
<p>e. Specific sources and causes are listed by waterbody segment or area and linked to designated/desired uses.</p>		<p>What we are looking for is a direct tie between the designated use impairment/threat, the pollutant, the source and the cause. The source and cause of impairment or threat for each segment listed in element 2c above should be determined and included in the plan. From the example in 2c above - If Total Body Contact Recreation is impaired due to E. coli between river miles XX and XXX, sources might include unrestricted livestock access, onsite septic systems, and pets and wildlife. In this case the source and cause are the same. This is not always the case. A threat or impairment due to sediment from an eroding stream bank (the source) could be caused by human or livestock access, removal of riparian vegetation, and/or a change in hydrology .</p>

f. Pollutants, sources and causes of threats/impairment are quantified.		Methods of quantification can be reported as concentrations (e.g., mg/L), loads (pounds per day), percentages (30% exceedance of Water Quality Standards), or quantified geographically or by land use type (e.g., row crop land in XX sub-basin is contributing 65% of the excess sediment load). Some flexibility is allowable here – the key is presentation of a quantification scheme that provides some indication of the level of effort needed to address impairments/threats. Quantification must be consistent on a pollutant/designated use basis (use the same units of measure so the sources and causes can be compared for each pollutant or designated use). This step helps with the prioritization step, below.
g. Sources of impairments/threats are mapped or identified by area, category/subcategory, facility type, etc.		Maps of sources and/or causes with clear labeling, or tables that list facilities or source areas along with impairment causes (e.g., sediment from construction sites), or other approaches that explain geographically which pollutants come from what areas (where controls are needed) are all acceptable.
h. Pollutant loadings or percentage are quantified by source.		This is intended to provide an estimate of the load contributions from each source by area or category. Acceptable methods include citations of weight-based or percentage loads (e.g., 300 lbs per month of the load is coming from construction sites, or 60% of the load is coming from the Big Creek sub-watershed). Other methods may also be acceptable.
i. Pollutants/sources/causes must be prioritized. Prioritization should show where actions should occur first.		Monitoring and/or assessment data should be summarized and/or referenced in an appendix. Quantification schemes should be clearly laid out--they don't have to be overly detailed or sophisticated, but should be reasonable. Use of best professional judgment (BPJ) is acceptable but the names and qualifications of BPJ contributors should be cited.
j. Estimates, assumptions, or data used in the analysis is presented or cited and appears reasonable		Self explanatory.
3. A clear statement of the water quality improvement or protection goals for the watershed.		
a. The overall goals for the watershed are identified, and at a minimum include restoring uses that are not currently being met, and improving or protecting uses that are being met.		Watershed plans may include both broad goals at the watershed scale as well as goals for specific subwatersheds, segments and/or sites.
b. Water quality and other watershed goals are listed for each water body segment or area (from 2C above).		
c. Goals for locally developed desired uses that may be less directly related to water quality conditions are included.		Desired uses can include anything the local communities decide they want from their waterbodies and watersheds that are not contrary to environmental protection laws. For example, a community may want to improve recreational opportunities by including a nature trail along the creek, protecting open space or a specific "viewshed", or enhancing upland habitat.
4. Description of the management measures needed to achieve the proposed load reductions		
a. A detailed list of tasks (activities) that outline the actions to be taken to accomplish the project goals is included.		These tasks are explanations of what needs to be accomplished, by whom and the expected products. Each task is to be tied to a specific goal or objective and pollutant/source/cause, and include subtasks to outline the actions that need to be taken.
b. A comprehensive plan will include all four of the following elements:		

i. The best management practices needed.		BMPs include structural, vegetative and managerial practices needed to control nonpoint source pollution.
ii. Revisions needed or proposed to local zoning ordinances and other land use management tools.		Watershed plans should include an analysis of local ordinances to help protect water quality. Examples of water quality protection ordinances include ordinances to address wetlands protection, open space management, subdivision development and storm water runoff. Several tools are available to assist in this review including those from SEMCOG (http://library.semco.org/InmagicGenie/DocumentFolder/WaterQualityWorkbook.pdf), and The Center for Watershed Protection (http://www.cwp.org/Resource_Library/Center_Docs/BSO/COWForm.pdf).
iii. Information and educational activities.		See elements 7a & 7b.
iv. Activities needed to institutionalize watershed protection.		Institutionalizing watershed protection helps local communities implement watershed plans after grant funding runs out. Examples of institutionalization include: expansion of steering committee membership to a watershed council or similar group; storm water utilities or fees; inclusion of staff positions at the local level to address water quality; ordinances that require water quality design standards to be used; endowment funds to continue funding BMPs; and increased awareness of water quality efforts through annual community events (such as watershed festivals) or volunteer monitoring programs.
c. Management measures needed to address each cause and source are prioritized		Management Measures include all four types of activities listed as sub-elements of 4b above. Management measures with the most potential for addressing threats or impairments should be noted. All management measures should be described in terms of relative effectiveness, cost, and applicability.
d. Proposed management measures are applicable to causes and sources and are feasible		Self explanatory.
e. Critical locations or priority sites for each management measure or critical/priority areas for each pollutant/source/cause are mapped or described		<p>Critical areas/sites are the area(s) where management measures need to be implemented to address the sources/causes of pollutants causing threats or impairments of beneficial uses. Actions tied to the critical areas will lead to water quality improvement.</p> <p>Priority areas/sites are the areas proposed for protection to prevent future impacts to water quality. Actions tied to the priority areas will help maintain current water quality.</p> <p>Both critical areas/sites and priority areas/sites must be mapped (preferred) or described. Critical/priority areas are often defined by land-use and environmental factors (soil type, depth to ground water, slope, etc). Critical/priority sites are specific known sites for implementation. Both areas and sites are meant to focus activities and describe where the management measures will yield the highest water quality gain/protection per unit of implementation. A watershed plan might have several critical areas based on different designated use/pollutant/source/cause combinations.</p>
f. Load reductions linked to each management measure are listed and quantified		BMP descriptions include performance estimates by unit and the plan quantifies how much of each BMP is needed. For example, the plan should include that 100 square feet of green roof reduce pollutant X by Y pounds and further state how many square feet of green roof are recommended.
g. Estimates, assumptions, or data used in the analysis is presented or cited and appears reasonable		Self explanatory.

5. Estimate of the load reductions expected from the proposed management measures		
a. Pollutant load reductions needed to address each impairment and threat are listed, and are quantified by weight, concentration, percentage reduction needed, etc. Could also be a maximum allowable load for threatened uses or protective plans.		This information is available for waters with completed TMDLs. In watersheds without completed TMDLs best professional judgment is acceptable. Examples: XX pounds per day load reduction of parameter Y is needed in a specific (critical) area, or reduction expressed as a percentage or lower concentration. Can also be expressed as quantifiable reductions tied to specific types of sources, such as AFOs, row crop acres, or stream bank miles (e.g., need a 20% reduction in loadings from urban streets; need to implement conservation practices on at least one-third of the row crop acres in the drainage area; need nutrient management BMPs on 80% of AFOs; need to stabilize 40% of eroded stream banks). Reductions needed to address impairments/threats for each cause should be listed.
b. Listed pollutant load reductions are linked to each cause and source location or category		Load reductions should be tied to each impairment or water quality threat cause and source. Surrogates may be used for narrative criteria impairments, such as use of chlorophyll a when no nutrient criterion exists.
c. Pollutant load reductions will achieve water quality criteria (meet TMDLs), address threats, or achieve other goals		Load reductions, concentration reductions, cause remediation, or water quality (WQ) threat elimination schemes should target achievement of WQ criteria in a reasonable manner. Excessive detail and precision is not as important as a logical presentation of the needed scope and level of effort. If non-Water Quality Standards goals are listed (visual amenities, non-contact recreation, etc.), the plan should reasonably address measures to judge achieving those goals.
d. Estimates, assumptions, or data used in the analysis is presented or cited and appears reasonable		Self explanatory.
6. Estimate of the amount of technical, financial, and regulatory assistance needed		
a. Type and amount of technical assistance needed to implement the management measures are listed		Technical assistance might include design or engineering services, consulting services, or other technical information needed to site and implement management measures. Technical assistance cited should be tied to proposed management measures.
b. Actual or potential sources of the needed technical assistance are identified		Examples include NRCS, US EPA, state and local water or resource management agencies, agricultural producer groups, professional associations, etc.
c. Costs for implementing, operating, and maintaining the management measures are estimated and listed		Estimated costs for the management measures cited above should be listed. Costs should include pre-installation design and other costs, installation/construction costs, and long term O&M costs. Information can be derived from past experience, reports from similar projects, literature values, or other reasonable estimates. Again, precision is not as important as a general sense of the scope and level of effort needed to address the impairments and threats.
d. Plan includes an estimate of the total cost of implementation including cost of administration (staff), management measures, and monitoring.		The total cost of implementation is used in EPA's "Needs Assessment". The watershed management plan is to include the estimated cost of implementation. The costs should be broken down by major categories such BMP implementation (including managerial, vegetative, and structural practices), ordinance development, information/education activities, and water quality assessment activities. These cost estimates should cover all costs associated with implementing the actions, including personnel, equipment and materials, publications, and related travel.

e. Sources of financial assistance needed to implement the management measures are listed		Known or potential sources should be listed for short-term projects (i.e., up to 3 yrs); proposed sources can be listed for longer term projects. Sources might include NRCS, CWA Sec. 319, private foundations, cost-share funds, USDA programs, etc. General sources can be proposed for longer term management measures.
f. Regulatory or other authorities responsible for (or needed) to implement the management measures are listed; entities exercising the regulatory or other authorities are identified		Management measures or BMPs requiring regulatory authority (e.g., non-structural practices like erosion control ordinances for construction sites) should specify the type of authority to be employed and responsible agency or entity; e.g., construction site inspections, ordinance dealing with stream buffer protection, agricultural water quality laws or regulations, timber harvest rules, etc.
g. Estimates, assumptions, or data used in the analysis is presented or cited and appears reasonable		Self explanatory.
7A. Public information, education, and participation - Planning Phase		
a. A summary of the public participation process as well as the methods for soliciting public input and comment that was used in the development of the plan is included.		The intent is to provide a variety of opportunities for the public to have input into the development of the plan. This involvement and buy-in to the plan recommendations is critical to the success of the project. This information is a good addition to the introduction of the watershed plan as it speaks to what was done while developing the watershed plan; the i/e strategy in the next step is to help ensure successful implementation of the plan.
b. The partners (or stakeholders) that were involved in developing the plan, and their roles and responsibilities.		There should be evidence of involvement by a wide variety of agencies and interests in the watershed, especially those groups or agencies currently impacting water quality and those that will be asked to take action. As with the above, this is good information to put in the watershed plan introduction.
7B. Public information, education, and participation - Implementation Plan/Strategy		
a. Information, education, and public participation goals and objectives for the management program are listed		What we are looking for is a comprehensive I&E Strategy that includes goals, objectives and tasks that: 1) are tied to the prioritized pollutants/sources/causes and water quality goals; and which 2) will result in the public and key stakeholders participating in implementing management measures identified in the watershed plan. Not all goals will be linked to water quality improvement, for example: goal of 10% response rate for our i/e survey; or goal of 200 people at our watershed festival.
b. A strategy or plan for the public information, education, and participation component is provided		
c. The strategy or plan includes broad out reach to the general public that will be used to enhance public understanding of the project and watershed issues		An effective I&E strategy will include a continuation of the broad outreach to the general public. This should consist of basic watershed/watershed planning information as well as general information about the watershed and its problems/priorities/solutions.
d. The strategy or plan includes methods and messages focused on specific audiences and issues from the plan		In addition to the general outreach above, an effective I&E strategy will also contain focused efforts giving specific audiences the information they need to improve water quality. For example, presentations at a Neighborhood Association meeting discussing soil testing and no phosphate fertilizers. The intent of these two sub elements is to provide information on the I&E efforts at a similar level of detail as the physical BMPs. And Yes, load reductions can be estimated for focused I&E. From the previous example - 30 households in attendance, 5 households implement No Phosphorus fertilization yielding x pound reduction.
e. The strategy or plan is tied to the critical/priority areas and/or pollutant/source/cause, identifies the organization conducting the I&E, and includes timeline, milestones, estimated costs, evaluation criteria, and a monitoring component.		
f. Proposed outreach activities can be directly tied to causes and sources and are feasible.		Self explanatory.

8. Reasonably expeditious schedule for implementation		
a. A timeline or schedule showing dates or a timeframe for developing and implementing each management measure and the i/e strategy is presented. The timeline should:		This information can be summarized in a table. The timeline is intended to cover whatever time is needed to implement the entire watershed management plan; the timeline should not be focused on the 319 or CMI application cycles. More detailed information should be presented for short-term activities, less detailed information is needed for longer term activities.
i. indicate the specific long-term and short-term actions/steps/tasks needed to implement each measure or part of the i/e strategy;		
ii. follow a logical sequence for successful implementation;		
iii. be detailed enough to be a useful planning tool.		
9. Interim measurable milestones for implementing the management measures		
a. A list of reasonable and attainable interim milestones, benchmarks, phases, or steps for implementing each group of management measures or control actions is provided		This can include a range of milestones or benchmarks based on: - activity measures (e.g., implementation of a specified number of management measures), - addressing listed stressors in a designated area (e.g., tributaries X, Y, and Z) or a designated type (e.g., all timber harvest operations), - acquisition of technical assistance or funding, - completion of specific management activities or actions, etc.
b. A logical sequence of dates for achieving the milestones, benchmarks, phases, or steps is listed		Self explanatory.
c. Proposed milestones are applicable to the proposed activities and are feasible		This sub-element should consider the timeline in element 8 above.
10. Criteria to determine whether or not load reductions are being achieved		
a. Criteria are identified that are linked to the pollutants and/or sources of impairments/threats		Watershed plans must include criteria to measure environmental change on the watershed scale. The criteria should be tied to the pollutants and sources identified in element 2 above as well as the goals (element 3) and load reductions (element 5). Consider measurements of WQ criteria (or narrative descriptions) from the States Water Quality Rules (e.g., DO, temperature, bacteria, metals, etc.). Also acceptable are activity or response measures, such as a reduction in the amount of dredging being done (due to a reduction in sediment) or a reducing in aquatic plant biomass (due to a reduction in nutrients). Watershed plans must include criteria for measuring progress in implementing any TMDLs.
b. The listed criteria include numeric and/or narrative water quality criteria, instream physical habitat assessment criteria, or other measurable criteria linked to the causes/sources		
c. Listed criteria include those incorporated into any TMDLs developed or to be developed for waterbodies addressed by the plan		
d. Provisions for reviewing progress and revising the plan or any TMDLs involved		
The plan must include a strategy for reviewing the administrative and environmental progress and assessing the need for revisions. This effort should be primarily based primarily on elements 9 and 11 and will answer the following questions: Is the plan being implemented? Is implementation resulting in the anticipated environmental change? Are revisions needed to the planned focus and actions?		

11. Monitoring component to evaluate the effectiveness of implementation		
a. A approach for establishing monitoring sites or procedures and relevant parameters is provided. This should reference sources/causes from element 2 and the critical areas/sites from element 4.		<p>The watershed management plan is to include a well-thought out evaluation strategy to evaluate the effectiveness of the watershed plan in addressing the water quality goals. The evaluation techniques need to be relative to the proposed recommendations in the watershed plan. A description of sampling parameters and general sampling locations is adequate. If specific projects will be undertaken during the short term (i.e., 0-3 yrs), more specific information on parameters, sampling protocols, sites, and etc. should be presented.</p> <p>The intent of the monitoring plan is not to measure the effect of individual BMPs, rather it should be designed to indicate change on the watershed scale in response to planned activities.</p>
b. Non-environmental monitoring parameters are clearly identified and provide a reasonable yardstick for measuring progress toward implementing the management measures		Identify what criteria will be used to evaluate the effectiveness of the I&E Strategy. These should correlate directly to the objectives in Element 7B. For example, if an objective is to get 200 people to attend the watershed festival, a criteria for success will be measuring the number of people that attended.
c. Monitoring parameters incorporate the criteria identified in element 10 above		Self explanatory.
d. Frequency of monitoring or assessing implementation progress is based on the schedule of implementation (from element 8) and the milestones (element 9) included in the plan.		The monitoring component should consider the time needed for implementing management measures as well as the time needed for the environmental response to those changes. For example - the time needed for the establishment of vegetation or the recolonization of an area by fish or macroinvertebrates may lag behind physical BMP installation or changes in land use or management.
e. Potential parties for implementing the monitoring program are listed		More detailed or specific for near term efforts, less so for efforts farther out.
f. Proposed monitoring elements are applicable to pollutants, causes, and sources and are appropriate and feasible.		Self explanatory.