



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 26 2016

REPLY TO THE ATTENTION OF:

WW-16J

Glenn Skuta, Watershed Division Director
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Mr. Skuta:

The U.S. Environmental Protection Agency has conducted a complete review of the final Total Maximum Daily Load (TMDL) for 12-Mile Creek in the North Fork Crow River watershed, including supporting documentation and follow up information. 12-Mile Creek is located in Wright County. The TMDL was calculated for Total Oxygen Demand (TOD). The TMDL addresses the impairment of aquatic life use.

EPA has determined that this TMDL meet the requirements of Section 303(d) of the Clean Water Act and EPA's implementing regulations at 40 C.F.R. Part 130. Therefore, EPA hereby approves Minnesota's TMDL for 12-Mile Creek. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in the enclosed decision document.

We wish to acknowledge Minnesota's effort in submitting this TMDL addressing aquatic life use, and look forward to future submissions by the State of Minnesota. If you have any questions, please contact Mr. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

A handwritten signature in blue ink that reads "Peter Swenson".

for Tinka G. Hyde
Director, Water Division

Enclosure

cc: Celine Lyman, MPCA
Maggie Leach, MPCA

wq-iw8-50g

DECISION DOCUMENT FOR THE 12-MILE CREEK TMDL, WRIGHT COUNTY, MN

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable TMDLs. Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term "should" below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable. These TMDL review guidelines are not themselves regulations. They are an attempt to summarize and provide guidance regarding currently effective statutory and regulatory requirements relating to TMDLs. Any differences between these guidelines and EPA's TMDL regulations should be resolved in favor of the regulations themselves.

1. Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the waterbody as it appears on the State's/Tribe's 303(d) list. The waterbody should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the waterbody and specify the link between the pollutant of concern and the water quality standard (see Section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the NPDES permits within the waterbody. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA's review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

- (1) the spatial extent of the watershed in which the impaired waterbody is located;
- (2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
- (3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
- (4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and
- (5) an explanation and analytical basis for expressing the TMDL through *surrogate measures*, if applicable. *Surrogate measures* are parameters such as percent fines and

turbidity for sediment impairments; chlorophyll *a* and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:

Location Description/Spatial Extent:

The 12-Mile Creek watershed is located in Wright County, Minnesota, northwest of Minneapolis. The watershed is part of the North Fork Crow River (NFCR) watershed. The impaired reach of 12-Mile Creek is the downstream-most portion, 3.4 miles in length, from the outlet of Little Waverly Lake to the confluence with the NFCR. The drainage area of the impaired reach is 655 acres in size. The creek was placed on the MPCA 303(d) list of impaired waters in 2010 due to exceedences of the dissolved oxygen (DO) criteria. Table 1 below lists the waterbody addressed by this TMDL.

Table 1 Waterbody Information for the 12-Mile Creek Watershed TMDL

Waterbody	AUID #	Impaired Use	Impairment
12-Mile Creek	070010204-681	Aquatic Life	Low Oxygen

Land Use:

The 12-Mile Creek watershed is a primarily mixed agricultural watershed, with cropland, pasture and forest the predominant land uses. The overall land use for the 12-Mile Creek watershed is in Table 2 below. MPCA does not anticipate changes in the nutrient loading due to changes in land use within the watershed. MPCA does not expect significant growth in the watershed.

Table 2 Land Use in the 12-Mile Creek Watershed

Land Use	Percent
Corn-soybeans	36
Hay and Pasture	29
Wetlands and Open Water	3
Forest and Shrubland	20
Urban/Roads	6
Grains and other crops	6
Total	100

Problem Identification:

The 12-Mile Creek watershed is part of a larger TMDL watershed, the NFCR. The TMDL for the NFCR watershed was approved on April 8, 2015. The TMDL project addressed impairments in numerous waterbodies in the NFCR watershed, but in particular eutrophication in Little Waverly Lake. Phosphorus loads in the lake were targeted in the TMDL, as well as several lakes upstream of Little Waverly Lake. Additional modeling was performed to address the DO impairment in 12-Mile Creek as part of the NFCR Watershed Restoration and Protection Strategy (WRAPS) effort.

The creek was added to the 2010 303(d) list for being impaired due to low DO. MPCA utilized data from a sample station on the creek to determine that the DO concentrations in the creek were below the DO criteria (Table 3.2 and Figures 3-3 and 3-4 of the TMDL). MPCA analyzed the data to determine if time of day impacted exceedences. DO levels are typically higher during the day, and drop during the night due to biological processes. The results showed that exceedences occurred during the day, indicating that DO violations were occurring regardless of natural processes (Section 3.2.1 of the TMDL). DO results were also compared to flow

measurements, and indicated that exceedences were occurring during mid to low flow conditions (Section 3.2.2 of the TMDL).

Pollutants:

12-Mile Creek was included on the Minnesota 303(d) list due to low concentrations of dissolved oxygen and the negative impact of those conditions on aquatic life (i.e., fish and macroinvertebrate communities). The pollutants of concern addressed in the TMDL are Total Oxygen Demand (TOD) substances, essentially organic material or organic-rich sediment within the water body. Microorganisms feed on the organic material and consume oxygen from the water column thereby reducing the amount of available oxygen from the water column. The TOD substances were further refined to include carbonaceous biochemical oxygen demand (CBOD), nitrogenous biochemical oxygen demand (NBOD), and sediment oxygen demand (SOD).

Biological processes associated with the breakdown and conversion of organic carbon to carbon dioxide are measured by CBOD. Biological processes associated with conversion of organic nitrogen to nitrate, via nitrification, are measured by NBOD. SOD is a measure of the oxygen depletion of biological and chemical processes in sediment (ex. the aerobic decay of organic materials in stream sediments). CBOD, NBOD and SOD remove oxygen from the water column or the sediment/water column interface.

Low dissolved oxygen concentrations can negatively impact aquatic life use. The decreases in dissolved oxygen can stress benthic macroinvertebrates and fish. Increased turbidity, brought on by elevated levels of nutrients within the water column, can reduce dissolved oxygen in the water column, and cause large shifts in dissolved oxygen and pH throughout the day. Shifting chemical conditions within the water column may stress aquatic biota (fish and macroinvertebrate species). In some instances, degradations in aquatic habitats or water quality have reduced fish populations or altered fish communities from those communities supporting sport fish species to communities which support more tolerant rough fish species.

Priority Ranking:

The 12-Mile Creek watershed was given priority for TMDL development due to the impairment impacts on public health, the public value of the impaired water resource, the likelihood of completing the TMDL in an expedient manner, the inclusion of a strong base of existing data and the restorability of the water body, the technical capability and the willingness of local partners to assist with the TMDL, and the appropriate sequencing of TMDLs within a watershed or basin.

Pollutants of Concern:

The pollutants of concern are Total Oxygen Demand (TOD) substances.

Source Identification (point and nonpoint sources):

Point Source Identification:

There are no point sources within the 12-Mile Creek TMDL watershed.

Nonpoint Source Identification: The potential nonpoint sources for the 12-Mile TMDL are:

Non-regulated stormwater runoff: Non-regulated stormwater runoff can add oxygen-demanding substances to the creek. The sources of oxygen-demanding substances in stormwater include

livestock wastes from small farms along the creek and runoff from row crops. MPCA performed a survey of the watershed to determine the potential for livestock waste to enter the creek (Figure 3.2 of the TMDL). This survey indicated that two feedlots are present in the watershed, and two more are just outside the watershed boundary. Livestock were seen grazing alongside the creek. MPCA noted that the manure from these animals is very likely washing off the land surface during rain events, and contributing to the impairment of the creek.

Upstream loads: Little Waverly Lake outflows into 12-Mile Creek. Little Waverly Lake is impaired due to high levels of phosphorus, and had a TMDL developed in 2015. MPCA explained that phosphorus can also contribute to low DO, as well as contribute DO-demanding substances. MPCA determined that a portion of the NBOD load is coming from Little Waverly Lake (Section 3.3.1 of the TMDL).

Hydrologic alteration: Natural-flowing streams have little SOD material built up in the streambed, as frequent scouring removes much of the material. MPCA noted that 12-Mile Creek has been ditched and straightened over the years. The alterations to 12-Mile Creek have resulted in over-widening, and therefore less scouring (Section 3.3.2 of the TMDL). The channelization has also diverted the stream through two sections of riparian wetlands. These alterations have reduced stream velocity and allowed organic matter to collect, providing additional SOD loads (Section 3.3.2 of the TMDL).

Future Growth:

MPCA expects little change in the allocations due to future growth. MPCA set aside a small load to account for any construction/industrial stormwater loads in the watershed.

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the first criterion.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy (40 C.F.R. §130.7(c)(1)). EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

Comment:

Designated Uses:

Minnesota Rule Chapter 7050 designates uses for waters of the state. 12-Mile Creek is designated as Class 2B water for aquatic life and recreation use (boating, swimming, fishing, etc.). The Class 2 aquatic life and recreation designated use is described in Minnesota Rule 7050.0140 (3):

“Aquatic life and recreation includes all waters of the state that support or may support fish, other aquatic life, bathing, boating, or other recreational purposes and for which quality control is or may be necessary to protect aquatic or terrestrial life or their habitats or the public health, safety, or welfare.”

Numeric DO Criteria: Dissolved oxygen is used by oxygen-demanding organisms in both the sediment and the water column in a water body. A relationship between DO and CBOD of microorganisms in the water column, DO and NBOD of microorganisms in the water column, and DO and SOD was developed for the 12-Mile Creek DO TMDL. The three oxygen demanding biological processes (CBOD, NBOD and SOD) were used to determine the Total Oxygen Demand (TOD) loading for the DO TMDL that will attain the DO criteria of 5.0 mg/L.

The Minnesota water quality standard for dissolved oxygen is a **5.0 mg/L daily minimum** (Minnesota Rules 7050.222 (4)). Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the 7Q10 and 100 percent of the days at which flow of the receiving water is greater than 7Q10 flow. The 7Q10 flow is a flow statistic which describes the lowest 7-day average flow that occurs on average once every 10 years.

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the second criterion.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a waterbody for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. §130.2(f)).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. §130.2(i)). If the TMDL is expressed in terms other than a daily load, e.g., an annual load, the submittal should explain why it is appropriate to express the TMDL in the unit of measurement chosen. The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for stream flow, loading, and water quality parameters as part of the analysis of loading capacity (40 C.F.R. §130.7(c)(1)). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and

nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

Comment:

The approach utilized by the MPCA to calculate the loading capacity for 12-Mile Creek for DO-demanding substances is described in Section 4 of the TMDL. MPCA used the Hydrological Simulation Program—Fortran (HSPF) model to develop the TMDL. HSPF is a continuous simulation watershed model that can handle long-term simulations for a wide variety of water quality constituents, including nutrients, and associated water quality processes from various sources and land uses. HSPF also simulates hydrology in a watershed.

MPCA initially developed a HSPF model for the NFCR TMDL project (Appendix B of the TMDL). The model was applied to the 12-Mile Creek watershed, utilizing data from the subwatershed (Appendix C of the TMDL). Once the model was revised, several scenarios were run to determine the reductions needed to attain WQS. Results of the model runs indicated that bringing Little Waverly Lake into compliance with WQS would result in a significant improvement in the water quality of 12-Mile Creek. However, to meet WQS, reductions in oxygen-demanding substances in 12-Mile Creek would still need to occur. The final model run calculated that an 80% reduction in TOD is needed to attain the DO WQS.

Table 3 TMDL summary for 12-Mile Creek

Source	Oxygen Demand (kg/day)						Total Oxygen Demand (kg/day)	
	CBOD		NBOD		SOD		Current	TMDL
	Current	TMDL	Current	TMDL	Current	TMDL		
WLA								
Construction & Industrial Stormwater	0.01	0.01	0.003	0.003	---	---	0.01	0.01
LA								
Little Waverly Lake Headwaters	6.7	1.8	0.8	0.8	---	---	7.5	2.6
Tribs/Groundwater	1.4	1.4	0.3	0.3	---	---	1.7	1.7
Sediment Fluxes	---	---	0.4	0.4	30.2	9.6	30.6	10.0
MOS	---	0.3	---	---	---	1.0	---	1.3
Total	8.1	3.5	1.5	1.5	30.2	10.6	39.8	15.6

For purposes of the TMDL, EPA is approving the TOD allocations as the TMDL. As noted in Section 4.3.2 of the TMDL, MPCA stated that the loading capacity is the maximum allowable oxygen demand (CBOD+NBOD+SOD). Calculating loadings for CBOD, NBOD, and SOD will allow MPCA to target the appropriate oxygen-demanding substance in the watershed (Section 4.2 of the TMDL).

Critical Condition: The critical condition for this TMDL is the summer low-flow condition. Observed DO data indicates that all exceedences of the DO criteria occurred during low flow conditions, when temperatures are elevated and the solubility of oxygen in water is lowered. Under low flow conditions, stream velocities are reduced, reducing the reaeration potential. MPCA addressed the critical condition by modeling the stream at the lowest flow condition.

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the third criterion.

4. Load Allocations (LA)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

Comment:

Load allocations are addressed in Section 4 of the TMDL and in Table 3 of this Decision Document. MPCA determined LAs for the Little Waverly outfall, which contributes nutrient loads as well as algae. Lake algae does not survive as well in a river environment, and thus dies and decays in the creek. This process consumes additional oxygen in the system. Loads were also calculated for tributaries/runoff/groundwater to 12-Mile Creek, as well as sediment fluxes where DO is consumed (SOD).

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the fourth criterion.

5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. §130.2(h), 40 C.F.R. §130.2(i)). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. These individual WLAs may be adjusted during the NPDES permitting process. If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL. If the WLAs are not adjusted, effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through reductions in the remaining individual WLAs and that localized impairments will not result. All permittees should be notified of any deviations from the initial individual WLAs contained in the TMDL. EPA does not require the establishment of a new TMDL to reflect these revised allocations as long as the total WLA, as expressed in the TMDL, remains the same or decreases, and there is no reallocation between the total WLA and the total LA.

Comment:

MPCA determined that there are no point sources in the watershed (Section 4.3.4 of the TMDL). Feedlots are located within the watershed, but do not meet the definition of a Concentrated Animal Feeding Operation (CAFO). Runoff due to field application of manure is considered a nonpoint source by the EPA and is considered as a load allocation, as long as the field application is in accordance with federal and state requirements.

A permit review by MPCA indicated no construction or industrial stormwater permits in the direct watershed. To account for any potential permittee in the future, MPCA allocated 1% of the tributary/groundwater LA to the WLA for construction or industrial stormwater (Table 3 of this Decision Document).

The EPA wishes to clarify a section of the TMDL that addresses new or expanding wastewater (Section 5.2 of the TMDL). While the EPA and MPCA have developed a streamlined process for setting or revising WLAs for new or expanding dischargers, this process applies only to bacteria and total suspended solids TMDLs, and not to nutrient or oxygen-demanding substance TMDLs. Any change to the WLA of this TMDL may require a TMDL revision.

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the fifth criterion.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)). EPA's 1991 TMDL Guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

Comment:

The 12-Mile Creek TOD TMDL incorporated an explicit MOS of 10% of the LA for CBOD and SOD. This is 8% of the TOD (Table 3 of this Decision Document). MPCA applied this part of the MOS to the two oxygen-demanding substances that need significant reductions. MPCA also noted that the model scenarios were set to predict 12-Mile Creek meeting the DO standard 100% of the time, rather than the 50% of the time as set forth in the standard.

The EPA finds that the TMDL document submitted by the MPCA contains an appropriate MOS satisfying the requirements of the sixth criterion.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).

Comment:

MPCA accounted for seasonal variation in the use of the HSPF model. The model uses precipitation and other climate variables over a long-term period to determine pollutant loading and subsequent water quality (Appendix B of the TMDL). As noted above, model results indicate that DO levels are reduced during the summer, and the TMDL allocations were developed to ensure the DO criteria were met for these time periods.

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the seventh criterion.

8. Reasonable Assurance

When a TMDL is developed for waters impaired by point sources only, the issuance of a NPDES permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R. 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with, “the assumptions and requirements of any available wasteload allocation” in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA’s 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.

EPA’s August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

Comment:

Section 9.4 of the TMDL discusses the reasonable assurance. Reasonable assurance does not strictly apply to the 12-Mile Creek TMDL, as there are no point sources contributing to the impairment. However, MPCA provided information on potential controls of oxygen-demanding substances that will be targeted to the watershed.

The 12-Mile Creek watershed is part of a larger TMDL project for the NFCR. The NFCR TMDL was approved on April 8, 2015, and addresses numerous impaired waters in the basin. Two of the lakes addressed in the NFCR TMDL are Waverly Lake and Little Waverly Lake. Both are impaired for high phosphorus levels, which contribute not only phosphorus but other oxygen-demanding substances such as algae. The NFCR WRAPS was approved by MPCA on January 5, 2015. Within the plan, the Waverly chain of lakes was identified as a high priority for restoration activities.

Many of the goals outlined in the TMDL are consistent with the objectives outlined in the Wright County Local Water Management Plan (Wright County Soil and Water Conservation District, Plan Amendment, 2011). The plan describes implementation actions and actions that will improve water quality across the county. The Crow River Organization of Water (CROW) includes both the North Fork Crow River and the South Fork Crow River, and was formed in 1999 to address water quality issues in the entire Crow River basin. A total of 14 counties are part of CROW, and has been active throughout the basin.

Clean Water Legacy Act: The CWLA was passed in Minnesota in 2006 for the purposes of protecting, restoring, and preserving Minnesota water. The CWLA provides the protocols and practices to be followed in order to protect, enhance, and restore water quality in Minnesota. The CWLA outlines how MPCA, public agencies and private entities should coordinate in their efforts toward improving land use management practices and water management. The CWLA anticipates that all agencies (i.e., MPCA, public agencies, local authorities and private entities, etc.) will cooperate regarding planning and restoration efforts. Cooperative efforts would likely include informal and formal agreements to jointly use technical, educational, and financial resources.

The CWLA also provides details on public and stakeholder participation, and how the funding will be used. In part to attain these goals, the CWLA requires MPCA to develop WRAPS. The WRAPS are required to contain such elements as the identification of impaired waters, watershed modeling outputs, point and nonpoint sources, load reductions, etc. (Chapter 114D.26; CWLA). The WRAPS also contain an implementation table of strategies and actions that are capable of achieving the needed load reductions, for both point and nonpoint sources (Chapter 114D.26, Subd. 1(8); CWLA). Implementation plans developed for the TMDLs are included in the table, and are considered “priority areas” under the WRAPS process (Watershed Restoration and Protection Strategy Report Template, MPCA). This table includes not only needed actions but a timeline for achieving water quality targets, the reductions needed from both point and nonpoint sources, the governmental units responsible, and interim milestones for achieving the actions. MPCA has developed guidance on what is required in the WRAPS (Watershed Restoration and Protection Strategy Report Template, MPCA). As noted above, the NFCR WRAPS was approved by MPCA on January 5, 2015

The Minnesota Board of Soil and Water Resources administers the Clean Water Fund as well, and has developed a detailed grants policy explaining what is required to be eligible to receive Clean Water Fund money (FY 2014 Clean Water Fund Competitive Grants Request for Proposal (RFP); Minnesota Board of Soil and Water Resources, 2014).

The EPA finds that this criterion has been adequately addressed.

9. Monitoring Plan to Track TMDL Effectiveness

EPA’s 1991 document, *Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

Comment:

The final TMDL document outlines the water monitoring efforts in the 12-Mile Creek watershed (Section 7 of the TMDL). Water quality monitoring is a critical component of the adaptive management strategy employed as part of the implementation planning efforts for the NFCR and 12 Mile Creek watersheds. Adaptive implementation is an iterative implementation process that

makes progress toward achieving water quality goals while using any new data and information to reduce uncertainty and adjust implementation activities. This process involves the review of annual progress made toward key milestones and the potential revision of implementation activities to meet the TMDL target loads. By using the adaptive implementation approach, the MPCA can utilize the new information available from water quality monitoring activities following initial TMDL implementation efforts to appropriately target the next suite of implementation activities.

Follow-up monitoring is integral to the adaptive implementation approach. Monitoring addresses uncertainty in the efficacy of implementation actions and can provide assurance that implementation measures are succeeding in attaining water quality standards, as well as inform the ongoing TMDL implementation strategy. To assess progress toward meeting the TMDL, CROW and the Wright County Soil and Water District will be tracking implementation activities in the watershed. Water quality monitoring will be done by MPCA and CROW as part of the WRAPS process.

The EPA finds that this criterion has been adequately addressed.

10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

Comment:

Implementation strategies are outlined in Section 8 of the final TMDL document. The MPCA presented a variety of possible implementation activities which could be undertaken within the 12-Mile Creek watershed.

MPCA identified reducing impacts from Little Waverly Lake as a priority, for attaining standards in 12-Mile Creek. The NFCR TMDL identified several control strategies for the lake, as well as milestones, potential costs, and necessary actions. MPCA will also explore the possibility of mechanical reaeration for the outlet of Little Waverly Lake.

In the TMDL, SOD was identified as a pollutant, in locations where the stream channel was overly wide. In these locations, sediment is more likely to settle out, little flushing of sediment occurs, and water temperatures are elevated. To address this, MPCA will pursue altering the channel morphology. As noted in Section 8.2.3, a thinner, deeper low-flow channel will provide less contact with SOD substances, but allow sufficient flow to protect aquatic life.

The EPA finds that this criterion has been adequately addressed. The EPA reviews but does not approve implementation plans.

11. Public Participation

EPA policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 C.F.R. §130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval should describe the State's/Tribe's public participation process, including a summary of significant comments and the State's/Tribe's responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. §130.7(d)(2)).

Provision of inadequate public participation may be a basis for disapproving a TMDL. If EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

Comment:

The public participation section of the TMDL submittal is found in Section 9 of the TMDL. Throughout the development of the NFCR and 12-Mile Creek TMDLs the public was given various opportunities to participate in the TMDL process. The MPCA encouraged public participation through public meetings and small group discussions with stakeholders within the watershed.

The draft TMDL was posted online by the MPCA at (<http://www.pca.state.mn.us/water/tmdl>). The 30-day public comment period began on July 27, 2015 and ended on August 26, 2015. The MPCA received one public comment and adequately addressed the comments. Comments were submitted by the Lake Ann Improvement Association (LAIA).

The comments from the LAIA focused on the goal of reducing upstream pollutant loads for Little Waverly Lake and 12-Mile Creek. Ann Lake is upstream of Little Waverly Lake, and the LAIA requested that since Ann Lake is the most impaired lake in the system, improving Ann Lake should be the first priority. LAIA also noted that tile inlets are not addressed in the implementation discussion. The LAIA stated they were not aware of the TMDL for 12-Mile Creek, and would have been a willing participant if they had been notified.

MPCA responded that Ann Lake is one of several sources of phosphorus and oxygen-demanding substances in the system, and while impaired, is not the largest source of pollutants to Little Waverly Lake. A TMDL has been approved for Ann Lake (May 22, 2012), and the State noted that any pollutant reductions in Ann Lake will help improve Little Waverly Lake and 12-Mile Creek.

The State also explained that they will be working with landowners to address field runoff, and tile flow will be a consideration. The State noted, however, that these actions are voluntary in nature, but any support from LAIA would be very helpful. Finally, MPCA explained the public notice process used, and will work with CROW and Wright County to ensure LAIA is kept informed of any watershed meetings or other activities. EPA believes that MPCA adequately addressed each of these comments and updated the final TMDL with appropriate language to address these comments.

The EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of this eleventh element.

12. Submittal Letter

A submittal letter should be included with the TMDL submittal, and should specify whether the TMDL is being submitted for a *technical review* or *final review and approval*. Each final TMDL submitted to EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State's/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the waterbody, and the pollutant(s) of concern.

Comment:

The EPA received the final 12-Mile Creek TMDL document, submittal letter and accompanying documentation from the MPCA on October 28, 2015. The transmittal letter explicitly stated that the final 12-Mile Creek TMDL for oxygen-demanding substances was being submitted to EPA pursuant to Section 303(d) of the Clean Water Act for EPA review and approval. The letter clearly stated that this was a final TMDL submittal under Section 303(d) of CWA. The letter also contained the name of the watershed as it appears on Minnesota's 303(d) list, and the causes/pollutants of concern. This TMDL was submitted per the requirements under Section 303(d) of the Clean Water Act and 40 CFR 130.

The EPA finds that the TMDL transmittal letter submitted for the 12-Mile Creek watershed by the MPCA satisfies the requirements of this twelfth element.

13. Conclusion

After a full and complete review, the EPA finds that the TMDLs for 12-Mile Creek for oxygen-demanding pollutants satisfy all of the elements of an approvable TMDL. This approval is for 1 TMDL, addressing 1 creek for aquatic life use impairment due to low DO (Table 1 of this Decision Document).

The EPA's approval of this TMDL extends to the water body which is identified in Table 1 of this Decision Document with the exception of any portions of the water body that is within Indian Country, as defined in 18 U.S.C. Section 1151. The EPA is taking no action to approve or disapprove TMDLs for those waters at this time. The EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under the CWA Section 303(d) for those waters.

