



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

SEP 09 2010

REPLY TO THE ATTENTION OF:  
WW-16J

Paul Eger, Commissioner  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Dear Mr. Eger:

The U.S Environmental Protection Agency has conducted a complete review of the final Total Maximum Daily Load (TMDL) for Fish Lake, including supporting documentation and follow up information. Fish Lake is located in the southern part of the Minneapolis and St. Paul Metropolitan area, in Dakota County. The TMDL addresses the Aquatic Recreation Use impairment due to total phosphorus.

The TMDL meets 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 one TMDL for total phosphorus for Fish Lake. 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 and look forward to future TMDL 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 black ink, appearing to read "Tinka G. Hyde".

Tinka G. Hyde  
Director, Water Division

Enclosure

Cc: Barb Peichel, MPCA  
Dave Johnson, MPCA

**TMDL:** Fish Lake, Dakota County, MN

**Date:** 09/09/10

## **DECISION DOCUMENT FOR FISH LAKE PHOSPHORUS TMDL**

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 Minnesota Pollution Control Agency (MPCA) has developed a TMDL for Fish Lake and a nutrient management plan for Schwanz Lake to address excess nutrients (Total Phosphorus). Fish and Schwanz Lakes, 28.7 and 11.5 acres respectively, are located in city parks within the Gun Club Lake watershed in the Lower Minnesota River basin. Both watersheds exist within the City of Eagan and a small portion of the City of Inver Grove Heights, near the Twin Cities metropolitan area in Dakota County, Minnesota. Fish and Schwanz Lakes did not meet water quality standards for Class 2B recreational waters, and were listed as impaired on the MPCA 2006 303(d) list for excess nutrients (Total Phosphorus). Water quality data from 1999, and 2001-2008 show that Schwanz Lake met MPCA numeric standards for phosphorus for seven out of the most recent 10 years. Therefore, MPCA recommended Schwanz Lake to be delisted and a nutrient management plan was developed in lieu of a TMDL to keep Schwanz Lake water quality in attainment. The listing status of Schwanz Lake will be reviewed during the 2010 303(d) list cycle. This decision document will only address the Fish Lake TMDL (Section 2 of the TMDL).

**Land Use:** Since the 1960's, Fish Lake watershed has grown from 120 acres of agricultural land to a fully developed urban watershed of 3,334 acres, and approximately 27% impervious cover. Fish Lake is part of a citywide storm trunk drainage system made up of over 150 water bodies. The storm trunk drains 95% of the Fish Lake watershed through inlets and various ponds. Just prior to discharge in Fish Lake, water goes through ponds JP-47 and JP-15; the latter of which is separated from Fish Lake by a berm. Runoff from the remaining 5% of the watershed drains directly to Fish Lake. The dominant land use in the watershed is low- and medium-density single family residential, with limited commercial, industrial and park land uses (Section 2.4 of the TMDL).

MPCA's review of Fish Lake bathymetry indicates that greater than 80% of the lake area is 15 feet deep or less and thus it meets MPCA's definition of a shallow lake (Section 2.5 of the TMDL). A fish population survey in 2008 found abundant game fish and limited rough fish, suggesting the fish community does not substantially increase internal loading (Section 2.8 of the TMDL). The aquatic vegetation includes native and non-native species with curlyleaf pondweed and native coontail as the dominant species. Aquatic vegetation growth occurred at 10 foot depths.

**Problem Identification:** Fish Lake water quality data from 1991-1993, 1998, and 2000-2008 indicate that Fish Lake is not attaining numeric water quality standards that support designated uses for Class 2B recreational waters (Minnesota Rules Ch. 7050). Total phosphorus, chlorophyll-a (chl-a), and Secchi depth were measured a minimum of seven times between June and September for 13 years and the average of those results are in Table 1 below.

Table 1: Long-term Water Quality Values for Fish Lake (from Section 3.2 of the TMDL)

	Total Phosphorus	Chl-a	Secchi Depth
Fish Lake Average from Jun-Sep 1991-1993,1998,2000-2008	67.8 µg/L	29.4 µg/L	1.6 m

Also, annual averages exceeded water quality standards for total phosphorus 9 out of 13 years monitored, 11 out of 13 years for chl-a, while Secchi depth measurements met numeric standards all 13 years (Section 2.6 of the TMDL).

Priority Ranking: Minnesota’s priority ranking of the water body is indicated by the target dates for start and completion of a TMDL study. Fish Lake TMDL studies were targeted to begin in 2007 and be completed by 2011 (TMDL Summary Table). The City of Eagan also identified Fish Lake as a priority water resource (Section 1.1 of the TMDL).

Pollutant of Concern: MPCA determined that the pollutant of concern for Fish Lake is total phosphorus. Chlorophyll-a and Secchi depth are additional standards included in the revised water quality standards (Minn. Rules Ch 7050). MPCA guidance indicates that to meet water quality standards, Fish Lake must meet the total phosphorus standard, and either chl-a or Secchi depth. Total phosphorus is an essential nutrient for algae and aquatic vegetation growth. However, elevated phosphorus levels can lead to nuisance algal blooms that limit recreational opportunities for swimming and fishing. Additionally, the death and decay of algae and vegetation consumes oxygen and can lead to anoxic conditions which cause a release of phosphorus from bottom sediments (i.e. internal loading). Algal abundance is measured by chlorophyll-a, a dominant pigment in algal cells. As algal cells increase in the water column, water clarity declines. Water clarity is commonly measured by Secchi disk. Increased algae and suspended particles in the water column will decrease Secchi disk readings (i.e. decrease water quality). Thus reductions of total phosphorus loads should improve chl-a and Secchi depth readings in favor of water quality standards. Therefore MPCA finds it appropriate to develop targets for total phosphorus in order to meet water quality standards.

Source Identification (point and nonpoint sources): MPCA identified the nonpoint sources that contribute to the excess nutrient impairment in Fish Lake to include: internal loading and atmospheric deposition. Internal loading at Fish Lake results from decay of curlyleaf pondweed, suspension of sediments by fish and wave action, and anoxic periods where dissolved oxygen levels are < 2 mg/L. Atmospheric deposition was found to be a minor contributor to the total phosphorus load.

MPCA identified urban stormwater runoff as a point source. Stormwater enters Fish Lake via the storm trunk drainage system and as direct runoff. These point sources are permitted by four NPDES Phase II Municipal Separate Storm Sewer Systems (MS4s). MPCA determined that all land within the Fish Lake watershed is covered under these MS4 permits. No NPDES wastewater permittees exist in Fish Lake watershed. Sanitary waste is treated outside of the watershed, with the exception of 45 individual sewage treatment systems (ISTS) that MPCA states will be removed as redevelopment occurs. A city permit program monitors the ISTS to ensure their performance. MPCA considers discharge from potential failures of ISTS as a

negligible source. Therefore, MPCA did not allocate loads to failing ISTS (Section 4.2.4 of the TMDL).

Future Growth: MPCA did not allocate loads for future growth. The Fish Lake watershed is almost entirely developed and any redevelopment in the watershed is subject to antidegradation policies within the City of Eagan's Water Quality and Wetland Management Plan. The policy requires no-net increase, from the existing condition, in total phosphorus and total suspended solid loads from any redevelopment site with over 5% impervious cover (Section 6.2 of the TMDL).

The U.S. 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: Fish Lake is classified as Class 2B water (MN. R. 7050.0430). The designated use addressed by this TMDL is aquatic recreation for 2B waters. Class 2 waters include waters which “do or may support fish, other aquatic life, bathing, boating, or other recreational purposes...” (MN R. 7050.0150(3)) (Section 3.1 of the TMDL).

Standards: Minnesota has numeric criteria to limit the quantity of nutrients entering waters. MN R. 7050.0222(4) defines the numeric criteria, based upon ecoregions. Fish Lake is classified by MPCA as a shallow lake (< 15 feet deep or > 80% littoral area) in the North Central Hardwood Forest ecoregion (Section 3.1 of the TMDL). Lakes are to meet the phosphorus target and either the chlorophyll-a or the Secchi disk target. The applicable criteria are in Table 2.

Table 2 Applicable Numeric Criteria

	Total Phosphorus	Chl-a	Secchi Depth
Fish Lake	≤ 60 µg/L	≤ 20 µg/L	≥1.0 m

Target: To achieve the designated use and the applicable water quality standards for shallow lakes in the NCHF ecoregion, MPCA selected the total phosphorus numeric standard of 54 µg/L (60 µg/L minus a 10% margin of safety, 6 µg/L) as the target for the TMDL (Section 3.1 of the TMDL).

The U.S. 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:**

Loading Capacity: The loading capacity developed to meet the phosphorus criteria for Fish Lake is **1.11 lb/day** (Section 5.3 of the TMDL). The loading capacity is the sum of the wasteload allocation (WLA), load allocation (LA), and margin of safety (MOS).

$$\begin{aligned} \text{TMDL} &= \text{WLA} + \text{LA} + \text{MOS} \\ 1.11 \text{ lb/day} &= 0.78 \text{ lb/day} + 0.18 \text{ lb/day} + 0.15 \text{ lb/day} \end{aligned}$$

Modeling Summary: The loading capacity for total phosphorus was determined through the use of two models, PONDNET and BATHTUB. External loadings from watershed stormwater runoff were calculated using PONDNET and then input to the Canfield-Bachmann sub-model, a component of BATHTUB. BATHTUB was used to estimate the in-lake response of phosphorus, chl-a and Secchi depth to determine the TMDL load allocations that would result in attainment of water quality standards (Section 5.2 of the TMDL).

PONDNET: Phosphorus loads to Fish Lake from the storm trunk drainage and direct runoff were estimated with PONDNET. Model inputs included rainfall data from a WWTP in northwest Eagan and monitored flow data from a wet (2002), average (2006), and dry (2008) year. Nutrient retention is calculated as water moves through the storm trunk. Model outputs were calibrated to monitored outflow from May to October 2008 at JP-47 which receives 95% of the watershed flow. Monitored water quality was within 8% of modeled estimates at JP-15, a pond adjacent to Fish Lake. MPCA considered the calibration and validation with observed data to support the use of PONDNET results in the TMDL analysis. The calibrated PONDNET model was then run with 2006 rainfall data (average year) to determine the final loading estimates (Section 5.3, Appendix A.2 and A.3 of the TMDL).

BATHTUB: After the loading rates were determined, the BATHTUB model was applied by MPCA to the lake. The BATHTUB model applies a series of empirical equations derived from assessments of lake data and performs steady state water and nutrient calculations based on lake morphometry and tributary inputs. The BATHTUB model requires fairly simple inputs to predict phosphorus loading. The model accounts for pollutant transport, sedimentation, and nutrient cycling. The Canfield-Bachmann submodel model uses the loads of phosphorus generated in PONDNET to determine the in-lake concentrations of phosphorus. BATHTUB was used to estimate the lake response of chl-a and Secchi depth (Section 5.3, Appendix A.4 and A.5 of the TMDL).

Additional calculations: Internal loading was back-calculated using the reverse Canfield-Bachman model; a method similar to solving a mass balance equation. Knowing in-lake phosphorus levels and modeled loads from the watershed and atmosphere, internal loading was calculated as the amount required to meet observed in-lake phosphorus levels. MPCA considered this estimate to be most representative of daily conditions for internal loading (Section 4.2.2 of the TMDL). The atmospheric loading rate was provided by the BATHTUB manual and also corresponded with average depositional rates for the area (Section 5.3 of the TMDL).

Results: MPCA determined that the loading capacity of total phosphorus for Fish Lake is **1.11 lb/day** (407 lb/yr) (Section 5.3 of the TMDL).

PONDNET estimated current loads to Fish Lake from the storm-trunk drainage as 0.91 lb/day (332 lb/yr), and 0.10 lb/day (37 lb/yr) from direct watershed drainage. Internal loading from reverse Canfield-Bachmann was calculated as 0.16 lb/day (59 lb/yr) (Section 4.2.2 of the

TMDL). Atmospheric loading was estimated at 0.021 lb/day (8 lb/yr) (Section 4.2.3 of the TMDL). The current load to Fish Lake is the sum of the above sources and is equal to 1.19 lb/day (436 lb/yr), assuming an average precipitation year (Section 5.4 of the TMDL).

Canfield-Bachmann modeling determined that Fish Lake’s loading capacity is **1.11 lb/day** (407 lb/yr) (Section 6.1 of the TMDL). This is the mass of total phosphorus that can enter Fish Lake and still meet the total phosphorus standard of 60 µg/L. BATHTUB results showed that in-lake total phosphorus concentrations of 60 µg/L would result in attainment of the Secchi depth standard, but the chl-a standard would not be met. However the numeric water quality standards would still be met if both Secchi and total phosphorus were in attainment (Section 5.4 of the TMDL).

Critical Condition: MPCA determined that the critical condition for the lake is the summer growing season (Section 6.1.4 of the TMDL). This is when water quality conditions are poorest and the lake is most sensitive to loads. Load concentrations were developed based on data during these critical conditions. Thus MPCA determined that meeting load concentrations for the summer growing season will allow water quality standards to be met.

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

#### 4. Load Allocations (LAs)

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:**

The load allocation for Fish Lake is **0.18 lb/day** (67 lb/yr) (Section 6.1.2 of the TMDL). Load allocations for internal loading were determined using reverse Canfield-Bachmann submodel results, in-lake water quality data, and modeled external loading from PONDNET. Atmospheric loading was determined from BATHTUB model results that corroborated with average depositional rates for the area. Load allocations identified by MPCA are shown in Table 3.

Table 3 Load allocations

Assigned Nonpoint Source	Total Phosphorus Load Allocation	
	(lb/yr)	(lb/day)
Internal Loading	59	0.16
Atmospheric Loading	7.7	0.021
Total	67	<b>0.18</b>



The U.S. 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 WQs 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:**

The wasteload allocation for Fish Lake is **0.78 lb/day** (285 lb/yr) (Section 6.1.1 of the TMDL). The only point sources identified for the watershed were NPDES Phase II Municipal Separate Storm Sewer Systems (MS4s). Wasteload allocations were determined using model results from PONDNET and the BATHTUB model. The assigned wasteload allocations for Fish Lake are shown in Table 4.

Table 4 Waste Load Allocations

Assigned Point Source (Permit Number)	Total Phosphorus Load Allocation	
	(lb/yr)	(lb/day)
City of Eagan (MS400014)*	264	0.72
City of Inver Grove Heights (MS400096)	1	0.003
Dakota County (MS400132)	18	0.049
MnDOT (MS400170)	1.9	0.005
<b>Total</b>	<b>285</b>	<b>0.78</b>

\*This wasteload allocation requires an annual reduction of approximately 84 lb/yr based on the current load reported by MPCA.

The WLAs in Table 4 also include construction and industrial stormwater activities in the watershed (Section 6.1.2 of the TMDL). MPCA believes these sources to be a very small portion of the load, and therefore the WLAs for stormwater also include construction and industrial stormwater dischargers.

The U.S. 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:**

Section 6.1.5 of the TMDL outlines the Margin of Safety (MOS). MPCA used an explicit margin of safety by reducing the target from 60 µg/L to 54 µg/L (10% explicit MOS based on the target). The result was a final margin of safety of **0.15 lb/day** (55 lb/yr). MPCA believes this is an appropriate amount of MOS because the BATHTUB results agreed within 8% of observed water quality, suggesting fair model representation of the actual system. The explicit margin of safety provides extra assurance that the TMDL will result in attainment of water quality standards.

The U.S. 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:**

Total phosphorus concentrations are largely driven by rainfall in this stormwater-runoff dominated system. MPCA determined loading capacity for an average precipitation year (2006) to capture common rainfall conditions, rather than the anomalous wet and dry years. Also, water quality conditions were monitored and modeled for the summer growing season when lakes are more productive, and nutrient concentrations are highest. MPCA finds these conservative

measures account for the seasonal variation, and allow Fish Lake to meet the water quality standards for shallow lakes in the NCHF ecoregion (Section 6.1.4 of the TMDL).

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

## **8. Reasonable Assurances**

When a TMDL is developed for waters impaired by point sources only, the issuance of a National Pollutant Discharge Elimination System (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:**

MPCA identified three mechanisms in Section 8.2 of the TMDL that provide reasonable assurance that implementation and improvements will occur to meet the load allocations provided in section 6 of this TMDL.

*Gun Club Lake Watershed Management Organization:* The Gun Club watershed organization is made up of five board members representing the City of Eagan, Inver Grove Heights, and Mendota Heights. The purpose of this organization is to protect and improve surface and groundwater quality (as required under Minn. Stats. Ch. 103B.201). GCLWMO has been involved with each step of the Fish Lake TMDL development, and has established a goal to enhance the surface water quality of Fish Lake watershed.

*City of Eagan Local Surface Water Management Plan:* The stormwater management plan is written to be compliant with State Statutes, Administrative Rules, and GCLWMO requirements. It contains specific actions to meet state, federal, and local goals for stormwater management. Updates to the surface water management plan occur with changing conditions and new

requirements. Therefore, requirements resulting from this TMDL are likely to be reflected in an updated surface water management plan.

NPDES MS4 Stormwater Permits: The State of Minnesota requires the City of Eagan to prepare a stormwater pollution prevention program (SWPP) which covers six measures that can control nutrient loadings from stormwater. Minnesota's general permit requires that within 18 months of approval of a TMDL, the SWPP must be modified so that the impacts from the permittees discharge are compliant with the wasteload allocations set for stormwater sources.

The U.S. EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the eighth criterion.

## **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:**

Follow up monitoring will be reported in the City of Eagan SWPP as described in Section 8.3 of the TMDL. The City of Eagan plans to continue annual monitoring and analysis of water quality data, including: temperature, pH, conductivity, Secchi depth, total phosphorus, and chlorophyll-a. Fish and aquatic vegetation will be monitored in the 5-year project implementation period. Inflow will also be monitored to determine if load reductions are being met. The City of Eagan is responsible for funding, collecting, summarizing, and analyzing the follow-up monitoring data.

The U.S. EPA finds that the TMDL document submitted by the MPCA satisfies the requirements of the ninth criterion.

## **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:**

In accordance with MPCA policy, an implementation plan will be completed within one year of TMDL approval. Section 8.1 of the TMDL summarizes management strategies recommended by MPCA to reduce total phosphorus loads. Recommended activities include in-lake management strategies, housekeeping practices for the watershed, and stormwater system retrofits and maintenance. The final implementation plan will provide a detailed plan of how these activities will reduce loads, based on the loading reductions provided in Section 6 of this TMDL. MPCA states that the City of Eagan is responsible for implementation activities, but voluntary and collaborative efforts from other entities will be encouraged.

The U.S. EPA finds that this criterion has been adequately addressed.

**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 Fish Lake TMDL was administered by MPCA, located in St. Paul MN. A technical advisory committee was formed for this TMDL. Three stakeholder meetings occurred between June 2008 and February 2010 to discuss development of the TMDL and to present the draft to stakeholders for comments and endorsement. The TMDL document was open for public comment from May 24, 2010 to June 23, 2010. MPCA made a public notice announcement by issuing a press release, posting the draft TMDL on the MPCA website, and sending email to attendants of prior stakeholder meetings. One comment was received during the public comment period and was adequately addressed (Section 7 of the TMDL).

The U.S. EPA finds that the TMDL document submitted for the Fish Lake TMDL 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:**

On July 28, 2010, EPA received a submittal letter dated July 19, 2010 signed by Paul Eger, MPCA Commissioner, addressed to Tinka Hyde, U.S. EPA Region 5, Water Division Director. The submittal letter identified the name and location of the waterbody for which the TMDL was developed. The letter explicitly states that the Fish Lake TMDL is being submitted for final approval by USEPA under Section 303(d) of the Clean Water Act.

The U.S. EPA finds that the TMDL document submitted for the Fish Lake TMDL by the MPCA satisfies the requirements of this twelfth element.

## **13. Conclusion**

After a full and complete review, the US EPA finds that this TMDL for total phosphorus for Fish Lake meets all of the required elements of an approvable TMDL. This decision document addresses one TMDL for Fish Lake as identified on Minnesota's 2006 303(d) list.

EPA's approval of this TMDL does not extend to those waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove TMDLs for those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under the CWA Section 303(d) for those waters.