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

SEP 20 2012

REPLY TO THE ATTENTION OF:

WW-16J

Rebecca J. Flood, Assistant Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Dear Ms. Flood,

The U.S. Environmental Protection Agency has conducted a complete review of the final Total Maximum Daily Loads (TMDLs) for Bevens Creek and Silver Creek, including supporting documentation and follow up information. Bevens Creek and Silver Creek are on the western edge of the Twin Cities Metropolitan Area in Carver and Sibley Counties. The TMDLs were calculated for Total Suspended Solids (TSS) to address the aquatic life use impairment due to turbidity.

The TMDLs 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 4 TMDLs for TSS for Bevens Creek and Silver 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 these TMDLs 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,

Tinka G. Hyde
Director, Water Division

Enclosure

cc: Dave Johnson, MPCA
Chris Zadak, MPCA

wq-iw7-33g

TMDL: Bevens and Silver Creeks, Minnesota
Effective Date: September 20, 2012

Decision Document for Approval of
Bevens Creek Watershed TMDL Report

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 Water body, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the water body as it appears on the State's/Tribe's 303(d) list. The water body 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 water body 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 water body. 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 water body 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; chlorophyl *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 Bevens Creek watershed is located at the western edge of the Twin Cities Metropolitan Area (Figure 2.1 of the TMDL Report). The watershed covers about 125 square miles with approximately 70 percent of the watershed in Carver County; the remainder is located outside the metropolitan area in Sibley County. Land use in the watershed is mainly agricultural with 53 percent in row crops, 23 percent in hay, 16 percent wetlands, 7 percent forest, and about 1 percent commercial and residential.

The portion of the watershed which lies in Sibley County is very flat and ditched with several large shallow wetlands. The portion of the watershed in Carver County is steeper with fewer wetlands, but also ditched. The cities of Norwood Young America and Hamburg (2010 estimated populations of 4,630 and 600, respectively) are located within the Carver County portion of the watershed and discharge treated wastewater to Bevens Creek (Figure 2.2 of the TMDL Report).

Bevens Creek was originally listed on the 2002 303(d) list for two segments (AUID 07020012-515 and 07020012-514) for turbidity. In 2006 Silver Creek (AUID 07020012-523) was added for turbidity. In the 2010 303(d) list reach AUID 07020012-515 of Bevens Creeks was split into two segments and assigned new AUIDs (AUID 07020012-717 and AUID 07020012-718); both segments are impaired due to turbidity. Table 1 identifies the segments for this TMDL.

Table 1 Segment Identifications

Bevens Creek Watershed Segments	
AUID 07020012-514	Bevens Creek-Silver Creek to Minnesota River
AUID 07020012-717	Bevens Creek –Washington Lake to Unnamed Creek
AUID 07020012-718	Bevens Creek- Unnamed Creek to Silver Creek
AUID 07020012-523	Silver Creek-County Ditch 32 to Bevens Creek

Problem Identification/Pollutant of Concern: As stated in the TMDL Report Bevens Creek and Silver Creek were placed on the Section 303(d) list based on the impairment of aquatic life use due to turbidity levels in exceedence of the Water Quality Standard (WQS) of 25 Nephelometric Turbidity Units (NTU) for Class 2B waters. This TMDL will address the aquatic life use impairment due to turbidity using Total Suspended Solid (TSS) loadings as a surrogate pollutant in four segments in the Bevens Creek Watershed.

Turbidity is an expression of the optical properties in a water sample that cause light to be scattered or absorbed. Turbidity may be caused by suspended matter, such as clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms (Standard Methods 1999). The scattering of light in the water column makes the water appear cloudy and the cloudiness increases with greater suspended loads. Turbidity limits light penetration which further inhibits healthy plant growth on the river bottom.

Turbidity is commonly measured in Nephelometric Turbidity Units (NTU). NTU is a unit of measurement quantifying the degree to which light traveling through a water column is scattered by the suspended particles. Because turbidity is dimensionless TSS was chosen as a surrogate to develop a loading capacity and determine allocations.

Source Identification: Section 5.2 of the TMDL Report identifies potential sources of TSS. Based on observations by Carver County staff it is believed that bank erosion is a chief contributor to in-stream TSS load. Studies by the St. Croix Watershed Research Station for nearby streams in the lower part of the Minnesota River basin using sediment isotope methodology were considered. These studies distinguished sediment derived from the surface (referred to as "field") versus sediment derived from deeper than 12 inches (or "non-field"). The latter category is assumed to represent sediment from stream banks or gullies. These studies conclude that approximately 30 percent of the in-stream TSS load is from the surface and 70 percent is from subsurface-derived sediment. The majority of subsurface sediment erosion in the watershed is assumed to be bank erosion.

There are two National Pollutant Discharge Elimination System (NPDES) permits for Wastewater Treatment Plants (WWTPs) that discharge to Bevens Creek, for the cities of Norwood Young America and Hamburg. These facilities discharge to AUID 07020012-717 (which is upstream of 07020012-514 and 07020012-718). There are no WWTPs in the Silver Creek sub-watershed.

Priority Ranking: Minnesota does not include separate priority rankings for its waters in the TMDL. However, it prioritizes waters based on its five-year rotating watershed assessment approach during the listing cycle. Ranking criteria for scheduling TMDL projects include, but are not limited to: impairment impacts on public health and aquatic life; public value of the impaired water resource; likelihood of completing the TMDL in an expedient manner, including a strong base of existing data and restorability of the water body; technical capability and willingness locally to assist with the TMDL; and appropriate sequencing of TMDLs within a watershed or basin. The Minnesota Pollution Control Agency (MPCA) projected schedule for TMDL completions, as indicated on Minnesota's 303(d) impaired waters list, implicitly reflects Minnesota's priority ranking of this TMDL.

EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this first element.

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 water body, 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 Use of Waterbody: Bevens and Silver Creeks are classified as 2B waters. Class 2B refers to those State waters identified to support aquatic (warm and cool water fisheries and associated biota) and recreation (all water recreation actives including bathing).

Water Quality Standard (WQS): The applicable water body classifications and water quality standards are specified in Minnesota Rules Chapter 7050. Minnesota Rules Chapter 7050.0407 lists water body classifications and Chapter 7050.0222 subp. 5 list applicable water quality standards for the Class 2 waters. The WQS for Class 2B waters for turbidity is 25 NTUs.

Target: Turbidity is not a pollutant, so MPCA determined that TSS was an appropriate surrogate for turbidity. A target of **110 mg/L TSS** is being used to achieve a load based value, based on the correlation between turbidity and TSS loads in the streams. Metropolitan Council Environmental Services (MCES) performed a statistical analysis of the relationship between turbidity and TSS using monitoring data collected from streams in the Twin Cities Metropolitan Area. A simple linear regression equation was fit to turbidity and TSS data. The equation used and graph relationship can be found on pages 9 and 10 of the TMDL report.

EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this second element.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a water body 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 steam 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: As discussed in Section 2 of this document MPCA determined that a surrogate target of 110 mg/l TSS was appropriate for meeting the WQS for turbidity. The loading capacity was calculated to meet the surrogate TSS target.

The Bevens Creek watershed consists of two subwatersheds: Bevens Creek main stem and Silver Creek. The Bevens Creek watershed has been listed for turbidity impairment as four contiguous segments: AUID 07020012-717, AUID 07020012-718, AUID 07020012-523, and AUID 07020012-514 (Silver Creek joins Bevens Creek at point between AUID 07020012-18 and 07020012-514). Loadings were calculated using data from MCES mile 2.0 which is the downstream end of the streams. MCES mile 2.0 monitoring station is the most complete monitoring data for the Bevens Creek watershed. TMDLs were calculated to represent the specific reach and all upstream portions. Segment AUID 07020012-717 is the most upstream segment with 48 percent of the watershed draining to this reach. With the remaining reaches having respectively the following portions of the watershed: 68 percent to AUID 07020012-718, 31 percent to AUID 07020012-523, and 100 percent to 07020012-514. The loading capacity and load allocations for the designated segments were estimated by assuming that the un-gauged segments are proportional to the gauged flow based on respective drainage areas. The loading capacities and allocations for these segments are described in Section 4.9 of the TMDL Report.

A load duration curve method was used in developing the loading capacity of the segments. The TSS load duration curve represents instantaneous loading capacities that vary as a function of flow. Because this method uses a long-term record of daily flow volumes virtually the full spectrum of allowable loading capacities is represented by the resulting curve.

- Load duration analysis method:
    - Flow duration curves were developed using the full range of hydrological conditions from data collected between1989 to 2007 at the MCES monitoring station located at 16185 County Road 40, Carver County, MN, which is about 2.2 miles upstream from Bevens Creek confluence with the Minnesota River. The resultant curves show flow values and the frequency that the flow is exceeded. Both flood conditions and low flow are represented.
    - Then, load duration curves were developed using the flows multiplied by the standards or target concentrations. The curve in each figure (Figures 4.3, 4.4, 4.5,

and 4.6 of the TMDL Report) represents the concentrations meeting standards, and the points above the curve are pollutant exceedences. Review of the load duration curves indicate that more exceedences occur under high flows and moist conditions. High flow exceedences more often occur from precipitation-related sources (stormwater, overland run-off) on the left portion of the plot and non-precipitation related (failing septics, cattle in the stream, wastewater discharge) exceedences more often occur under low flow conditions on the right portion of the plot. The TMDL for each flow regime was established by using the midpoint flow condition multiplied by the concentration target.

In the TMDL equation tables of the TMDL Report (Tables 4.2 – 4.5) only five points on the entire loading capacity curve are depicted (the midpoints of the designated flow zones). However, it should be understood that the components of the TMDL equation could be illustrated for any point on the entire curve. The load duration curve method can be used to display collected TSS monitoring data and allows for estimation of load reductions necessary for attainment of the turbidity water quality standard. The Load Capacity can be found in Tables 3-6 at the end of this document.

Critical Condition:
The load duration curve shows that the majority of the infractions occur at the high flow and moist conditions zones when flows are greater than 38.8 cubic feet per second (cfs). The critical condition is determined to be during wet weather which occurs during snow melt and rain events. EPA concurs with the data analysis and LDC approach utilized by MPCA in their calculation of the wasteload allocations, load allocations and the margin of safety for Bevens Creek Watershed TMDLs. The method used for determining these TMDLs are consistent with EPA technical memos.[1]

EPA finds MPCA's approach for calculating the loading capacity to be reasonable with EPA Guidance. EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this third element.

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 non-point 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 non-point sources.

Comments:
The load allocations are discussed in Sections 4.9 and 5.1 of the TMDL Report. MPCA determined available LAs by determining the loading capacity and subtracting out the wasteload allocations and a margin of safety. The load allocation includes nonpoint pollution sources that are not subject to an NPDES permit as well as "natural background" sources. Although there are

[1] See U.S. Environmental Protection Agency, August 2007, *An Approach for Using Load Duration Curves in the Development of TMDLS,* Office of Water. EPA-841-B-07-2006, Washington, D.C.

numeric loads for each flow regime in the table the value will change as the flow changes within each flow regime. Tables 3-6 below identify the load allocations associated for each flow regime for each reach for this TMDL.

EPA finds MPCA's approach for calculating the loading capacity to be reasonable with EPA Guidance. EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this fourth element.

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.

Comments:
There are two permitted point sources that discharge in the Bevens Creek watershed. They are the Norwood Young America WWTP and Hamburg WWTP. Their daily mass limits are used as their WLAs for this TMDL. Table 2 below lists the TSS permit limits for the wastewater treatment facilities in the Bevens Creek watershed.

Table 2 NPDES permitted Facilities in the Bevens Creek Watershed

Facility	Permit Number	Limit	Limit Concentration	Notes
Norwood Young America WWTP	MN 0024392-SD 001 & SD 002	103 kg/day	30 mg/l	Calendar Month Average
Hamburg WWTP	MN 0025585-SD 001	96.5 kg/day	45 mg/l	Calendar Month Average

Stormwater from construction sites and industrial activities is covered by general NPDES permits. The values for construction are based on the fraction of area in Carver County that was

under construction based on permit applications over the last 4.5 years. This area amounted to about 0.09 percent of the total county area. The WLA for construction was then calculated by taking the remaining loading capacity after other WLA, MOS and reserve capacity were subtracted from the loading capacity and multiplying that amount by 0.09 percent. Industrial stormwater loads were set equal to those for construction.

The total daily loading capacity in the low flow zone is very small due to the occurrence of very low flows in the long-term flow records. At the low flow zone (90% to 100% stream flow) the permitted wastewater treatment facility design flow is greater than the stream flow without the discharge and is therefore the majority of the flow. To account for this situation, the WLAs and LAs are expressed as an equation rather than an absolute number. The expression used for this calculation is as follows:

> Allocation = (flow contribution from a given source) x (*X* mg/L TSS),
> where *X* equals 45 for the Hamburg WWTP,
> 30 for Norwood Young America WWTP

There are no municipal separate storm sewer (MS4) cities regulated under NPDES permits in the Bevens Creek watershed. There also are no concentrated animal feeding lots in the Bevens Creek watershed. WLA's for all permitted discharges associated for each flow regime for each reach can be found in Tables 3-6 below.

Minnesota also requires a reserved capacity (RC) component to the TMDL when there are authorized discharges. In this case for the segments that are affected by the discharge of the two NPDES discharges a reserved capacity was added for future growth possibilities for any additional discharge. The RC was determined to be 50 % of the current discharge for each of the three permittees. Section 4.8 of the TMDL Report discusses possible uses for the RC for this TMDL. The RC for the three segments in Bevens Creek can be found in tables 3-5 at the end of this document.

EPA finds MPCA's approach for calculating the loading capacity to be reasonable with EPA Guidance. EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this fifth element.

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.

Comments:
The MOS for these TMDLs is an explicit 10% of the loading capacity. MPCA determined that this MOS is appropriate because of the very close agreement between the paired turbidity and TSS samples (Appendix A of the TMDL Report). The statistical analysis of the data determined that the r^2 values were greater than 0.7, indicating the turbidity values and TSS values were closely related. In addition, the wastewater treatment facilities are required by permit to discharge below the instream target of 110mg/l (30 mg/l permitted for Norwood Young America WWTP, 45mg/l permitted for Hamburg WWTP), allowing for assimilative capacity in the waterbodies at low flow conditions. EPA agrees that this measure provide sufficient MOS such that water quality standards will be achieved.

EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this sixth element.

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)).

Comments:
The TMDL submittal addresses the seasonal variation by using the duration curve method which depicts water quality data over the full range of expected flow conditions. Twenty seven years of flow data was used for this TMDL. Most exceedence of the water quality standard for turbidity occur at the high- and moist-range flow conditions during the seasons with snow melt, rain and lack of a developed crop canopy.

EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this seventh element.

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.

Comments:
Section 5.2 of the TMDL Report identifies potential sources of TSS. MPCA has determined that the load allocation is the largest contributor of TSS to the Bevens Creek watershed. The Reasonable Assurance Section (Section 9 of the TMDL Report) discusses some mechanisms that give reasonable assurance that the TMDL can be met. These mechanisms are as follows:

Carver County is the water management authority for a large portion of Bevens Creek and it will continue to work with Sibley County to manage the portions of the watershed that lie outside its boundaries. The County has zoning and land use powers to implement corrective actions to achieve TMDL goals. The County has stable funding for water management each year, and will continue its baseline-monitoring program. Carver County manages the natural resources through the following actions:

- Protect, preserve, and manage natural surface and groundwater storage and retention systems;
- Effectively and efficiently manage public capital expenditures needed to correct flooding and water quality problems;
- Identify and plan for means to effectively protect and improve surface and groundwater quality;
- Establish more uniform local policies and official controls for surface and groundwater management;
- Prevent erosion of soil into surface water systems;
- Promote groundwater recharge;
- Protect and enhance fish and wildlife habitat and water recreational facilities; and
- Secure the other benefits associated with the proper management of surface and groundwater.

The Carver County Board of Commissioners (County Board), acting as the water management authority for the former Bevens Creek (includes Silver Creek), Carver Creek, East and West Chaska Creeks, and South Fork Crow River watershed management organization areas, has established the "Carver County Water Management Organization (CCWMO)". The purpose of establishing the CCWMO is to fulfill the County's water management responsibilities under Minnesota Statue and Rule. Further information can be found in section 9.2 of the TMDL Report.

The Clean Water Legacy Act (CWLA) is a statute passed in Minnesota in 2006 for the purposes of protecting, restoring, and preserving Minnesota water. The CWLA provides the process to be used in Minnesota to develop TMDL implementation plans, which detail the restoration activities needed to achieve the allocations in the TMDL. The TMDL implementation plans are required by the State to obtain funding from the Clean Water Fund. The Act discusses how MPCA and the involved public agencies and private entities will coordinate efforts regarding land use, land management, water management, etc. Cooperation is also expected between agencies and other entities regarding planning efforts, and various local authorities and

responsibilities. This would also include informal and formal agreements and to jointly utilize technical educational, and financial resources. MPCA expects the implementation plans to be developed within a year of TMDL approval.

The CWLA also provides details on public and stakeholder participation, and how the funding will be used. The implementation plans are required to contain ranges of cost estimates for both point and nonpoint source load reductions, as well as monitoring efforts to determine effectiveness. MPCA has developed guidance on what is required in the implementation plans (Implementation Plan Review Combined Checklist and Comment, MPCA), which includes cost estimates, general timelines for implementation, and interim milestones and measures. 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 '11 Clean Water Fund Competitive Grants Policy; Minnesota Board of Soil and Water Resources, 2011).

EPA finds that the TMDL document submitted by MPCA adequately addresses this eighth element.

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.

Comments:
As discussed in the Monitoring Section (Section 6) of the TMDL Report, monitoring will be continued by Carver County. Carver County currently monitors five automated stream sampling stations throughout Bevens Creek Watershed. A detailed monitoring plan will be developed in the final implementation plan.

EPA finds that the TMDL document submitted by MPCA adequately addresses this ninth element.

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:
This TMDL does not contain a formal implementation plan. Section 7 of the TMDL Report lays out an implementation strategy. The final Implementation Plan will be developed within a year of the final approval of the TMDL report by the EPA. MPCA and Carver County plan to list where BMPs will be applied in the watershed and identify the cost and funding sources for their application. To reach the reduction goals Carver County will rely largely on its current Water Management Plan, which identifies the Carver SWCD as the local agency for implementing best management practices. Implementation goals not covered in the Water Management Plan will be identified and amended to the implementation plan.

EPA is not required to and does not approve TMDL implementation plans.

EPA finds that the TMDL document submitted by MPCA adequately addresses this tenth element.

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.

Comments:
The availability of the draft TMDL was on public notice in the State Register from November 14, 2011-December 14, 2011. On December 29, 2011, Carver County Staff held a public meeting to present this TMDL to local stakeholders and the public. Additional public involvement was also utilized through stakeholder meetings, citizen surveys, workshops and permanent citizen advisory committees to gather input from the public and help guide implementation activities held by Carver County.

The County established the Water, Environment, & Natural Resource Committee (WENR) as a permanent advisory committee. The WENR is operated under the County's standard procedures for advisory committees. WENR works with staff to make recommendations to the County Board on matters relating to watershed planning.

MPCA received comments from Minnesota Center for Environmental Advocacy in support of the TMDL.

EPA finds that the TMDL document submitted by MPCA satisfies all 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 water body, and the pollutant(s) of concern.

Comment:
The transmittal letter is dated June 18, 2012 from Rebecca J. Flood, Assistant Commissioner, to Tinka Hyde, Director, Water Division, Region 5 EPA. The letter stated that this is a TMDL submittal for final approval under Section 303(d) of the CWA. The letter also contains the name of the watershed, and the pollutant of concern.

EPA finds that the TMDL document submitted by MPCA satisfies all requirements of this twelfth element.

13. Conclusion

After a full and complete review, EPA finds that the TMDL for Bevens Creek Watershed satisfies all of the elements of an approvable TMDL. This approval document is for four water body segment impaired for the aquatic life use impairment due to turbidity for a total of four TMDLs addressing four impairments from the 2010 Minnesota 303(d) list. EPA's approval of this document 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 CWA Section 303(d) for those waters.

Table 3 TMDL TSS Load Allocations for Bevens Creek AUID 07020012-717 in kg/day.

TMDL Allocation	High Flow	Moist Conditions	Mid Range	Dry Conditions	Low Flow
Total Loading Capacity (TMDL)	**37,181.0**	**9,010.0**	**2,659.0**	**595.0**	**216.0**
Wasteload Allocation (WLA)	**259.2**	**213.6**	**203.3**	**199.9**	*
Norwood Young America WWTP	103.0	103.0	103.0	103.0	*
Hamburg WWTP	96.5	96.5	96.5	96.5	*
Construction WLA	29.8	7.0	1.9	0.2	*
Industrial WLA	29.8	7.0	1.9	0.2	*
Reserve Capacity (RC)	**99.8**	**99.8**	**99.8**	**99.8**	*
Margin of Safety (MOS)	**3,718.1**	**901.0**	**265.9**	**59.5**	**21.6**
Load Allocation (LA)	**33,104.0**	**7,795.7**	**2,090.1**	**235.8**	#

* see Section 4.9 of the TMDL report for further discussion on WLA for WWTP loadings and how a concentration based limit is assigned for low flow. Allocation = (flow contribution from a given source) x (*X* mg/L TSS), where *X* equals 45 for the Hamburg WWTP, and 30 for Norwood Young America WWTP. The WLA for construction was then calculated by taking the remaining loading capacity after other WLA, MOS and reserve capacity were subtracted and multiplying that amount by 0.09 percent. The industrial WLA was given the same value as the WLA.

see Section 4.9 of TMDL report or further discussion on LA a concentration based limit is assigned for low flow based on WLA. Allocation = (flow contribution from a given source) x (*X* mg/L TSS), where *X* equals 110 mg/L

Table 4 TMDL TSS Load Allocations for Bevens Creek AUID 07020012-718 in kg/day

TMDL Allocation	High Flow	Moist Conditions	Mid Range	Dry Conditions	Low Flow
Total Loading Capacity (TMDL)	**52673.0**	**12764.0**	**3767.0**	**843.0**	**360**
Wasteload Allocation (WLA)	**294.3**	**222.5**	**206.3**	**201.0**	*
Norwood Young America WWTP	103.0	103.0	103.0	103.0	*
Hamburg WWTP	96.5	96.5	96.5	96.5	*
Construction WLA	42.4	10.1	2.8	0.4	*
Industrial WLA	42.4	10.1	2.8	0.4	*
Reserve Capacity (RC)	**99.8**	**99.8**	**99.8**	**99.8**	*
Margin of Safety (MOS)	**5,267.3**	**1276.4**	**376.7**	**84.3**	**30.6**
Load Allocation (LA)	**47,021.7**	**11, 168.2**	**3085.5**	**458.6**	#

* see Section 4.9 of the TMDL report for further discussion on WLA for WWTP loadings and how a concentration based limit is assigned for low flow. Allocation = (flow contribution from a given source) x (*X* mg/L TSS), where *X* equals 45 for the Hamburg WWTP, and 30 for Norwood Young America WWTP. The WLA for construction was then calculated by taking the remaining loading capacity after other WLA, MOS and reserve capacity were subtracted and multiplying that amount by 0.09 percent. The industrial WLA was given the same value as the WLA.

see Section 4.9 of TMDL report or further discussion on LA a concentration based limit is assigned for low flow based on WLA. Allocation = (flow contribution from a given source) x (*X* mg/L TSS), where *X* equals 110 mg/L

Table 5 TMDL TSS Load Allocations for Bevens Creek AUID 07020012-514 in kg/day

TMDL Allocation	High Flow	Moist Conditions	Mid Range	Dry Conditions	Low Flow
Total Loading Capacity (TMDL)	**77,461.0**	**18,771.0**	**5,539.0**	**1,239.0**	**450.5**
Wasteload Allocation (WLA)	**324.4**	**229.4**	**207.9**	**201.0**	**199.7**
Norwood Young America WWTP	103.0	103.0	103.0	103.0	103.0
Hamburg WWTP	96.5	96.5	96.5	96.5	96.5
Construction WLA	62.5	14.9	4.2	0.7	0.1
Industrial WLA	62.5	14.9	4.2	0.7	0.1
Reserve Capacity (RC)	**99.8**	**99.8**	**99.8**	**99.8**	**99.8**
Margin of Safety (MOS)	**7,746.1**	**1,877.1**	**553.9**	**123.9**	**45.1**
Load Allocation (LA)	**69,290.7**	**16,564.8**	**4,677.4**	**814.4**	**106.0**

Table 6 TMDL TSS Load Allocations for Silver Creek AUID 07020012-523 in kg/day

TMDL Allocation	High Flow	Moist Conditions	Mid Range	Dry Conditions	Low Flow
Total Loading Capacity (TMDL)	**24,013.0**	**5,819.0**	**1,717.0**	**384.0**	**140.0**
Wasteload Allocation (WLA)	38.9	9.48	2.8	0.6	0.2
Construction WLA	19.5	4.7	1.4	0.3	0.1
Industrial WLA	19.5	4.7	1.4	0.3	0.1
Margin of Safety (MOS)	**2,401.3**	**581.9**	**171.7**	**38.4**	**14.0**
Load Allocation (LA)	**21,572.8**	**5,227.7**	**1,542.5**	**345.0**	**125.8**