TMDL: Waumandee Creek Watershed, Wisconsin
Approval Date: November 22, 2005

Decision Document for Approval of Waumandee Creek Watershed Sediment 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 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; chlorophyl *a*_ and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:

These Total Maximum Daily Loads (TMDLs) for sediment address sedimentation and degraded habitat impairment conditions in: Buell Valley Creek, Cochrane Ditch, Irish Valley Creek, Jahns Valley Creek and Weiland Valley Creek. These five streams are located in the Waumandee Creek Watershed, in the Buffalo-Trempealeau Basin. Buell Valley Creek, Cochrane Ditch, Irish Valley Creek, and Jahns Valley Creek were placed on the 303(d) impaired waters list in 1998 and were identified as low priority on the 2004 303(d) impaired waters list. Weiland Valley Creek was placed on the 2004 303(d) list as low priority. All of the streams currently support a warm water forage fishery (WWFF) with potential to support a cold water fishery (Table 1). Wisconsin has determined that sediment is the pollutant causing the impairment (degraded habitat resulting in poor biota community).

Stream	WBIC	TMDL ID	Impaired Stream Miles	Existing Use	Potential Use	Codified Use
Buell Valley Creek	1813100	60	2	WWFF	Cold III	default (WWFF)
Cochrane Ditch (Rose Valley)	1813600	88	9	WWFF	Cold III	default (WWFF)
Irish Valley Creek	1811400	196	8	WWFF	Cold III	default (WWFF)
Jahns Valley Creek	1810800	204	8	WWFF	Cold III	default (WWFF)
Weiland Valley Creek	1813000	701	2	WWFF	Cold III	default (WWFF)

Table 1. Impaired Waters of the Waumandee Creek Watershed

The Waumandee Creek Watershed is located in Buffalo County, Wisconsin. The Waumandee Creek Watershed drains 204 square miles and is characterized by steep topography, narrow valleys and numerous streams. Surface water drains to the Mississippi River by direct runoff or through Waumandee Creek and its tributaries.

Buell Valley Creek is a headwater stream located in the northern portion of the Waumandee Creek Watershed. Buell Valley Creek is a two-mile tributary of Weiland Valley Creek (also included in these TMDLs). Currently, Buell Valley Creek is listed on the 303(d) impaired waters list as supporting a warm water fish forage community, but monitoring of the stream since
the 1998 listing has shown signs of habitat improvement, and may be obtaining its potential use as a Class III trout fishery.

Cochrane Ditch (Rose Valley) is a nine-mile stream, located within the Rose Valley Subwatershed in the western portion of the Waumandee Creek Watershed, adjacent to the Mississippi River. Rose Valley Creek becomes the Cochrane Ditch. This ditch is an extensively channelized conduit that receives flow from Belvidere Valley Creek. Sedimentation is the impairment of this stream. Currently, Cochrane Ditch supports a warm water forage fishery, but the potential use is a Class III trout fishery.

Irish Valley Creek is an eight-mile creek that flows west and converges with Waters Valley Creek before flowing into Waumandee Creek. Irish Valley Creek transports the majority of the sediment in the subwatershed. The headwaters area of this stream is wooded with protected streambanks. Based on information from the Waumandee Creek Priority Watershed Project, cattle in the majority of the downstream area are permitted access to the creek, causing trampled banks, slumping and increased erosion of the banks. Sedimentation is the reason the creek was placed on the 1998 303(d) list. Irish Valley Creek currently supports a warm water forage fish community with potential to support a Class III trout fishery.

Jahns Valley Creek is an eight-mile creek that flows the length of the Jahns Valley Subwatershed; one of the smaller subwatersheds in the Waumandee Creek Watershed. Downstream sections of the creek have been widened and channelized. Pasture borders the majority of the stream with livestock permitted access to the creek, resulting in trampled stream banks in the downstream portion of Jahns Valley Creek. Grazed woodlot and pasture contribute the majority of sediment to the creek. Sand and silt creek bottom, poor shading, and elevated water temperatures yield a poor fish habitat. The water temperature is elevated, but not sufficiently elevated to exceed the water quality criterion. Similarly, dissolved oxygen levels are low for a stream of that type, but not to the point of exceeding the water quality criterion. Jahns Valley Creek supports a warm water forage fishery, with potential to support a Class III trout fishery.

Weiland Valley Creek is a two-mile stream that flows into Waumandee Creek. Weiland Valley Creek receives flow from Buell Valley Creek. The current use of Weiland Valley Creek is a warm water forage fishery, with potential to support a Class II trout fishery. According to the Waumandee Priority Watershed Plan, high gradient, cool water, and fairly good sand and rubble substrate provide an ideal coldwater fish habitat. Fish surveys conducted in 2002, above Hayes Valley Road, found 87 brook trout (of several age classes), suggesting the stream currently supports a Cold II fishery. Below Hayes Valley Rd. the stream is impacted by cattle pasturing, bank erosion and feedlot runoff. The fish survey in 2002 conducted at one mile below Hayes Valley Road showed zero fish. This fish survey data suggest the entire stream has potential to

support a Cold II fishery if nonpoint sources are controlled.

There are no point sources in the watershed, only non-point sources were addressed in this TMDL. Forested land dominates land use. Due to the steep topography of the regions, agriculture occurs in the valleys by the streams. Cropland erosion, trampled streambanks, and loss of streambank vegetation are the primary nonpoint sources of sediment pollution to these impaired waters.

In most cases, the gravel substrate is extensively covered by sand, silt, and soft organic matter preventing a suitable habitat for fish and macroinvertebrate communities. Filling-in of pools reduces the amount of available cover for juvenile and adult fish. Sedimentation of riffle areas reduces the reproductive success of fish by reducing the exposed gravel substrate necessary for appropriate spawning conditions. Sedimentation also affects macroinvertebrate biomass (fish food source) which tends to be lower in areas with predominantly sand substrate than a stream substrate with a mix of gravel, rubble, and sand. Sedimentation also causes elevated turbidity which reduces the penetration of light necessary for photosynthesis in aquatic plants, reduces the feeding efficiency of visual predators and filter feeders, and lowers the respiratory capacity of aquatic invertebrates by clogging their gill surfaces. In addition, other contaminants such as nutrients (phosphorus) attached to sediment particles can be transported to streams during runoff events.

The creeks are limited by excessive sediment loading and habitat unsuitable to support a coldwater fishery.

EPA finds the State's approach acceptable and it meets the requirements of this section.

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:

As stated in section one and Table 1, the impaired streams listed in these TMDLs are not currently meeting applicable narrative *water quality criterion* as defined in NR 102.04 (1); Wis. Admin. Code:

> To preserve and enhance the quality of waters, standards are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all waters including mixing zone and effluent channels meet the following conditions at all times and under all flow conditions: (a) *Substances that will cause objectionable deposits on the shore or in the bed of a water, shall not be present in such amounts as to interfere with public rights in waters of the state*.

Coverage of the substrates with sediment constitutes "an objectionable deposit" under the water quality standards criterion noted in S.NR 102.04(1)(a).

The designated uses applicable to these impaired creeks are as follows:

> S. NR 102.04(3) intro, (a) and (c), Wis. Adm. Code:
> FISH AND OTHER AQUATIC LIFE USES. The department shall classify all surface waters into one of the fish and other aquatic life subcategories described in this subsection. Only those use subcategories identified in parts (a) to (c) shall be considered suitable for the protection and propagation of a balanced fish and other aquatic life community as provided in federal water pollution control act amendments of 1972, P.L. 92-500; 33 USC 1251 et.seq.
>
> (a) *Cold water communities*. This subcategory includes surface waters capable of supporting a community of cold water fish and aquatic life, or serving as a spawning area for cold water fish species. This subcategory includes, but is not restricted to, surface waters identified as trout water by the department of natural resources (Wisconsin Trout Streams, publication 6-6300 (80).
>
> (c) *Warm water forage fish communities.* This subcategory includes surface waters capable of supporting an abundant diverse community of forage fish and other aquatic life.

The objective of this TMDL is to produce habitat conditions in all the streams that meet narrative water quality standards and support a Class III coldwater trout fishery, as described in NR1.02(7)(b), Wis. Adm. Code, as follows:

"A class III trout stream is a stream or portion thereof that:

> a. Requires the annual stocking of trout to provide a significant harvest, and

b. Does not provide habitat suitable for the survival of throughout the year, or for natural reproduction of trout."

EPA finds the State's approach acceptable and it meets the requirements of this section.

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 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:

Page 5 of the TMDL Report stated that "Existing sediment loads were based on data in the 1990 Nonpoint Source Control Plan for Waumandee Creek Priority Watershed. In the Waumandee Priority Watershed Plan, detailed analysis using the WINHUSLE model determined the sediment loads for subwatersheds. The WINHUSLE model calculates average annual soil erosion based on actual field conditions, existing best management practices and crop rotations, from Universal Soil Loss Equation with runoff based on NRCS TR-55 routed from field to stream. Since the subwatersheds in the Waumandee Creek Priority Watershed Plan included not only the impaired waters, acreage and land use was delineated for subwatersheds for each of the impaired streams in the Waumandee Watershed using WISCLAND ((1991), See Appendix A of the TMDL Report). WISCLAND is the Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data, a partnership of public and private organizations seeking to facilitate landscape GIS data development and analysis. The ratio of sediment in tons/acre for the subwatersheds outlined in the Waumandee Creek Priority Watershed plan was multiplied by the acres delineated in WISCLAND to estimate sediment loads for each impaired stream's watershed (Appendix B of the TMDL Report)". The vegetative buffers along the streams were

not included in estimating the load allocations. Agricultural field loads are assumed to enter the streams directly, therefore reductions are under estimated. Page 6 of the TMDL Report indicated that "The terminology for land use differs between WISCLAND and the Watershed Creek Priority Watershed, Table 2 below shows the assumptions that were used:

Table 2. WISCLAND Data land use classification.

WISCLAND Data	From Waumandee Creek Priority Watershed
Agriculture	(includes cropland and farmstead)
Grassland	(includes grassland and pasture)
Forest	(includes woodlot to grazed woodlot)

During the inventory phase of the Waumandee Creek Priority Watershed streambank erosion was estimated to contribute sediment (tons/year) to the impaired streams (Table 3 below).

Table 3. Sediment Contributed to Streams due to Streambank Erosion

Subwatershed	Streambank erosion(tons/year)
Buell Valley Creek	200
Cochrane Ditch	109
Irish Valley Creek	1152
Johns Valley Creek	401
Weiland Valley Creek	600

The National Resource Conservation Service's (NRCS) volumetric method (mass based on height, width, depth, and density) was applied to field data collected on individual eroding stream banks to estimate the amount of sediment reaching the streams (tons/year). The sediment contributed via streambank erosion was added to the estimated sediment loads for each impaired stream to calculate the existing sediment load (Table 4 below and Appendix B of the TMDL Report)".

Table 4. Existing Sediment Loads for Waumandee Impaired Streams

Impaired Stream	Existing sediment loads(tons/Acre)
Buell Valley Creek	355
Cochrane Ditch(Rose Valley)	822
Irish Valley Creek	1852

Jahns Valley Creek	839
Weiland Valley Creek	1006

The total annual loading capacity for sediment is the sum of the wasteload allocation, the load allocation and the margin of safety, as generally expressed in the following equation:

TMDL Load Capacity = WLA + LA + MOS

WLA = Wasteload Allocation = 0 tons/year (no point sources)

LA = Load Allocation

MOS = Margin of Safety (0 or implicit for these TMDLs)

Table 5. Total Loading capacity for the Waumandee Impaired Streams

Impaired Stream	Total Loading capacity (tons/year)
Buell Valley Creek	145
Cochrane Ditch(Rose Valley)	395
Irish Valley Creek	799
Jahns Valley Creek	339
Weiland Valley Creek	417

There is no one single “critical condition” for these TMDLs. The critical condition for the loading of sediments to Waumandee Creek Watershed is generally during spring run-off and intense summer rainfalls, although stream bank erosion occurs year- around. The impacts of the sediment on the biotic community occur year-around as well, as it impacts the spawning and feeding habits. The total load capacities are consistent with or less than the corresponding total load capacity assigned for Eagle Creek; a reference stream also located in the Waumandee Creek Watershed, where streambank improvements have been successful in the upstream reach. EPA believes the assumptions and modeling process used to determine the loading capacity is acceptable.

EPA finds the State's approach acceptable and it meets the requirements of this section.

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:

Page 9 of the TMDL Report stated that "The load allocation corresponds to the total load capacity since the waste allocation is zero and the margin of safety is implicit. The Waumandee Creek Priority Watershed Plan was used in defining reductions in loads for cropland (agriculture) and streambank erosion. The following reductions were used to calculate reduced load capacities for streams: agriculture (50%) and streambanks (60%). The reductions were based on improvements seen in Eagle Creek, a reference stream also located in the Waumandee Creek Watershed. Grazed woodlots contribute the highest amount of sediment to the impaired streams. For this reason, the streams would benefit if grazing in woodlots were prevented to reduce sediment loads by 75%. All values are expressed in average annual tons of sediment reaching the stream".

EPA finds the State's approach acceptable and it meets the requirements of this section.

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:

Page 9 of the TMDL Report stated that "Since there are no point sources in the watershed the wasteload allocation is zero. If a point source discharge were proposed, one of the following would need to occur:

*An effluent limit of zero sediment load would be included in the WPDES permit

*An offset would need to be created through some means, such as pollutant trading.

*A re-allocation of sediment load would need to be developed and approved by EPA".

EPA finds the State's approach acceptable and it meets the requirements of this section.

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:

Page 9 of the TMDL Report indicated that "The margin of safety (MOS) accounts for the uncertainty about the relationship between the sediment loads and the response in the waterbody. An implicit MOS is used for these TMDLs. Additional load reduction should be achieved through implementation of additional best management practices (BMPs) in the watershed. Specifically, the establishment of vegetative buffers along streams through activities such Conservation Reserve Enhancement Program (CREP) would also further reduce the sediment load. Vegetative buffers along streams were not included in estimating the load allocations. In October 2001, the CREP was approved for portions of Wisconsin, including Buffalo County and Waumandee Creek Watershed. Implementation of vegetative buffers could result in up to a 10 to 15% greater control of sediment from croplands. This value is based on the buffers controlling at least 75% of the sediment carried in overland flow across the buffers and would not be an explicit MOS since a significant portion of the sediment load is from other sources".

EPA finds the State's approach acceptable and it meets the requirements of this section.

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:

Page 10 of the TMDL Report states that "There is no seasonal variation in the impacts of sedimentation of these streams. Sediment is a "conservative" pollutant and does not degrade over time or during different critical periods of the year. The extensive sedimentation occurs year-round. Under some stream flow regimes, sediment is deposited, and at other times, sediment is scoured and transported downstream. Much of the sediment in these streams remain within the confines of the streams until major floods scour some of the accumulated sediment. However, over time the net result has been an accumulation of sediments in and along the streams under the current amounts of sediment reaching the streams". The State believes that the amount of sediment reaching these impaired streams through major rainfall and snowmelt runoff events varies throughout the year. WDNR has determined that, most of the sediment enters during spring runoff and intense summer rainstorms. Considerable sediment also enters the streams from eroding stream banks during runoff events. WDNR considered this seasonal variation by selecting and designing best management practices that function for 10-year or 25-year, 24-hour design storms, providing substantial control for the major rainfall events.

EPA finds the State's approach acceptable and it meets the requirements of this section.

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:

There are no point sources in the watershed. The following information is provided by WDNR to demonstrate the implementation of the TMDLs:

Page 11 and 12 of the TMDL Report states “The impaired streams that are tributaries of the Waumandee Creek are part of a larger watershed project, the Waumandee Creek Priority Watershed Project. As part of a financing plan for priority watershed projects, long-term state cost sharing and local staff funding was committed to the Waumandee Creek Priority Watershed Project.

No new or additional enforcement authorities are provided under these TMDLs. However, future enforcement of nonpoint source performance standards and prohibitions will likely take place in the watersheds of these impaired waters. It is also anticipated that regulatory agricultural and non-agricultural performance standards and performance standards called for in Wisconsin Statutes will be implemented in the watershed for these impaired waters. Administrative rules passed by the Natural Resources Board identify that watersheds with impaired waters will have the highest priority for enforcement. In addition to the implementation of enforceable nonpoint source performance standards, there are a number of voluntary programs that will assist in implementing these TMDLs.

Farmers may enroll in the Conservation Reserve Enhancement Program (CREP) or similar programs to establish vegetated buffers on cropland and marginal pastures. As of March 1, 2005, farmers enrolled in CREP in Buffalo County maintain 299.7 acres of grass filter strips and 1275.8 acres of forest riparian buffers. Riparian buffers assist in making CREP a viable program

for these impaired streams. Another program available to farmers is the Conservation Reserve Program, which takes highly erodible lands out of agricultural use.

The Environmental Quality Incentives Program (EQIP) is another option available to farmers. EQIP is a federal cost-share program administered by the NRCS that provides farmers with technical and financial assistance. Farmers may receive up to 75% reimbursement for installing and implementing run-off management practices. Projects include terraces, waterways, diversions, and contour strips to manage agricultural waste, promote stream buffers, and control erosion on agricultural lands.

Buffalo County in the Waumandee Creek Watershed may also apply to the Targeted Runoff Management (TRM) grant program through the WDNR. The TRM program is a competitive grant program that provides financial assistance to control polluted runoff from both rural and urban sites. The grant period is two years, and the maximum cost-share rate is 70% of eligible costs. Two TRM grants were awarded for the Waumandee Creek Watershed Conservation Project in 2004 for awards of $49,000.00 and $36,000.00. The following practices have been installed since 2001 by TRM funds:

- 1400 linear ft. of streambank shaping and seeding
- 550 linear ft. of riprap
- 80 linear ft. of riprap, including the installation of lunkers for fish habitat
- 1 wetland restoration site
- 9 acres of grassed waterways on 4 separate sites
- 2 grade stabilization structures for erosion control".

EPA finds that the TMDL document submitted by the State addresses this 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.

Comment:

Page 11 of the TMDL Report stated that "Monitoring will continue once every three years, until baseline sampling methods identified in the WDNR Monitoring Strategy deem that the streams have responded to the point where they are meeting their codified uses or until funding for these studies is discontinued".

EPA finds that the TMDL document submitted by the State addresses this section.

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:

EPA is not required to and does not approve TMDL implementation plans. However, the WDNR did identify some implementation activities that will work toward meeting the water quality standard for aquatic life. As discussed under the Reasonable Assurances section (see Section 8 above), the installation of sediment control measures and Best Management Practices will reduce sediment loadings and minimize surface runoff rates to Waumandee Creek Watershed. Because this TMDL uses the phased implementation approach, the TMDL implementation strategy may be amended as new information on the watershed is developed, to better account for contributing sources of the pollutant and to determine where reductions in the watershed are most appropriate.

EPA finds that the TMDL document submitted by the State addresses this section.

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:

Page 11 of the TMDL Report indicated that “This TMDL was subject for public review from July 5, 2005 through August 5, 2005. On June 28, 2005, a news release was sent to over 800 entities including: newspapers, television stations, radio stations, interest groups, and interested individuals. The news release indicated the public comment period and how to obtain copies of the public notice and the draft TMDL. The news release, public notice, and draft TMDL were also placed on the WDNR’s website. In addition, hard copies were sent to the West Central Regional Office of the WDNR, Julie Fernholz (Buffalo County Conservationist) and Todd Mau (NRCS)”. Except for the EPA comments, no other comments were received.

EPA finds the State's approach acceptable and it meets the requirements of this section.

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 formal submittal of the final sediment TMDL for Waumandee Creek Watershed on October 13, 2005, along with a submittal letter from Mr. Russell Rasmussen, Director of Bureau of Watershed Management dated October 3, 2005. In the submittal letter, WDNR stated that the "Final TMDLs (Total Maximum Daily Load) for Impaired Streams in the Waumandee Creek Watershed is enclosed for your approval." The letter states that Waumandee Creek Watershed TMDL does not address waters in Indian Country as defined in 18.U.S.C Section 1151.

13. Conclusion:

After a full and complete review, EPA finds that the TMDL for Waumandee Creek Watershed in Buffalo County, Wisconsin, satisfies all of the elements of an approvable TMDL. These five TMDLs for sediment address 11 impairments.

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.