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

REPLY TO THE ATTENTION OF:
W-16J

March 25, 2021

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

Dear Mr. Skuta:

The U.S. Environmental Protection Agency completed its review of the final Total Maximum Daily Loads (TMDLs) for segments within the Des Moines River Headwaters Watershed (DMRHW), including supporting documentation. The DMRHW encompasses parts of Cottonwood, Jackson, Lyon, Martin, Murray, Nobles and Pipestone counties in southwestern Minnesota. The DMRHW TMDLs address impaired aquatic recreation use due to excessive nutrients.

The DMRHW TMDLs meet the requirements of Section 303(d) of the Clean Water Act and EPA's implementing regulations set forth at 40 C.F.R. Part 130. Therefore, EPA approves Minnesota's two phosphorus TMDLs. EPA describes Minnesota's compliance with the statutory and regulatory requirements in the enclosed decision document.

EPA acknowledges Minnesota's efforts in submitting these TMDLs and look forward to future TMDL submissions by the State of Minnesota. If you have any questions, please contact Mr. Paul Proto, at 312-353-8657 or proto.pau@epa.gov.

Sincerely,

Linda Holst
Digitally signed by LINDA HOLST
Date: 2021.03.25 16:32:33 -05'00'

Tera L. Fong
Division Director, Water Division

wq-iw7-56g

**TMDL:** Des Moines River Headwaters Watershed River Eutrophication TMDLs in portions of Cottonwood, Jackson, Lyon, Murray, Nobles and Pipestone counties in southern Minnesota
**Date:** March 25, 2021

# DECISION DOCUMENT FOR THE DES MOINES RIVER HEADWATERS WATERSHED RIVER EUTROPHICATION TMDLS, IN PORTIONS OF COTTONWOOD, JACKSON, LYON, MURRAY, NOBLES AND PIPESTONE COUNTIES IN SOUTHERN, MINNESOTA

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; 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 Des Moines River Headwaters Watershed (DMRHW) River Eutrophication Total Maximum Daily Load (TMDL) addresses two impaired stream reaches in the Des Moines River Headwaters Watershed (HUC-8, 07100001) in southwestern Minnesota. The DMRHW drains approximately 1,253 square miles (801,772 acres) in portions of six counties, Cottonwood, Jackson, Lyon, Murray, Nobles and Pipestone. Water in the DMRHW generally flows in a southeasterly direction into Iowa (See Figure 1 of the final TMDL document). In the northwestern portion of the DMRHW, the headwaters of the Des Moines River are fed by Lake Shetek. The Des Moines River flows southeasterly through southern Minnesota into Iowa and eventually joins the Mississippi River in Keokuk, Iowa.

The Minnesota Pollution Control Agency (MPCA) developed Total Maximum Daily Load (TMDLs) for two impaired stream segments in the DMRHW. These TMDLs address two (2) impaired stream segments due to excessive nutrient inputs (Table 1 of this Decision Document).

**Table 1: Des Moines River Headwaters Watershed impaired waters addressed by this TMDL**

| Water body name | Assessment Unit ID | Affected Use | Pollutant or stressor | TMDL |
|---|---|---|---|---|
| Des Moines River (Windom Dam to Jackson Dam) | 07100001-501 | Aquatic Recreation | Excess Nutrients (total phosphorus) | Nutrient TMDL |
| Heron Lake Outlet (Heron Lake (32-0057-01) to Des Moines River) | 07100001-527 | Aquatic Recreation | Excess Nutrients (total phosphorus) | Nutrient TMDL |
| | | | **TOTAL nutrient TMDLs** | **2** |

**Land Use:**

Land use in the DMRHW is mostly agricultural land (i.e., cultivated crop lands) with a mix of developed land, rangeland, wetlands, open water and forested lands (Table 2 of this Decision Document and Table 5 of the final TMDL document).

**Table 2: Land Use in the Des Moines River Headwaters Watershed based on the National Land Cover Dataset (NLCD - 2011)**

| Land Use | Cropland | Rangeland | Developed | Wetland | Open Water | Forest/Shrub | Barren/Mining | Total |
|---|---|---|---|---|---|---|---|---|
| | Percentage of Total Drainage Area Land Cover | | | | | | | |
| Des Moines River Headwaters subwatershed (07100001) | 81.1% | 5.9% | 6.0% | 3.1% | 2.9% | 1.1% | 0.03% | **100%** |

**Problem Identification:**
The nutrient impairments for the Des Moines River segment (-501) and the Heron Lake Outlet segment (-527) identified in Table 1 of this Decision Document were included on the final 2018 Minnesota 303(d) list due to excessive nutrients (phosphorus). Measured concentrations of total phosphorus (TP) and at least one of the response variables, chlorophyll-*a* sestonic (chl-*a*), dissolved oxygen flux ($DO_{FLUX}$), 5-day biochemical oxygen demand ($BOD_5$) and/or pH demonstrated exceedances of river eutrophication water quality standards (RES). Water quality monitoring was completed at select locations in the DMRHW and that data formed the foundation for nutrient TMDL modeling efforts.

While TP is an essential nutrient for aquatic life, elevated concentrations of TP can lead to nuisance algal blooms that negatively impact aquatic life and recreation (e.g., swimming, boating, fishing, etc.). Algal decomposition depletes dissolved oxygen levels within the water column. The decreases in dissolved oxygen can stress benthic macroinvertebrates and fish. Depletion of oxygen in the water column can also lead to conditions where phosphorus is released from bottom sediments (i.e., internal loading). Also, excess algae can shade the water column which limits the distribution of aquatic vegetation. Aquatic vegetation stabilizes bottom sediments, and also is an important habitat for macroinvertebrates and fish.

**Priority Ranking:**
MPCA's schedule for TMDL completions, as indicated on the 303(d) impaired waters list, reflects Minnesota's priority ranking of this TMDL. MPCA has aligned TMDL priorities with the watershed approach and Watershed Restoration and Protection Strategy (WRAPS) cycle. The schedule for TMDL completion corresponds to the WRAPS report completion on the 10-year cycle. Mainstem river TMDLs, which are not contained in major watersheds and thus not addressed in WRAPS, must also be completed. The MPCA developed a state plan, Minnesota's TMDL Priority Framework Report, to meet the needs of EPA's national measure (WQ-27) under EPA's Long-Term Vision for Assessment, Restoration and Protection under the CWA section 303(d) program. As part of these efforts, the MPCA identified water quality-impaired segments that will be addressed by TMDLs by 2022. The waters of the DMRHW addressed by this TMDL are part of the MPCA prioritization plan to meet EPA's national measure.

**Pollutant of Concern:**
The pollutant of concern is TP (nutrients).

**Source Identification (point and nonpoint sources):**

***Point Source Identification:*** The potential point sources are:

*National Pollutant Discharge Elimination Systems (NPDES) permitted facilities:* NPDES permitted facilities may contribute phosphorus loads to surface waters through discharges of treated wastewater. Permitted facilities must discharge wastewater according to their NPDES permit. MPCA determined that there are three wastewater treatment facilities/plants (WWTP) in the DMRHW which contribute phosphorus from treated wastewater releases. The Heron Lake WWTP (MNG580189) was assigned a portion of the phosphorus wasteload allocation (WLA) for both the Des Moines River (-501) and Heron Lake Outlet (-527) nutrient TMDLs. The Red Rock Rural Water WTP (MNG640077) and the Windom WWTP (MN0022217) were assigned WLAs for the Des Moines River (-501) nutrient TMDL.

*Municipal Separate Storm Sewer System (MS4) communities:* Stormwater from MS4s can transport phosphorus to surface water bodies during or shortly after storm events. MPCA identified one MS4 community, the City of Worthington (MS400257), in the overall DMRHW but did not assign any portion of the WLA to this MS4 community. MPCA explained that this MS4 was outside the contributing area for both of the nutrient TMDLs (Section 4.3.3 of the final TMDL document).

*Stormwater runoff from permitted construction and industrial areas:* Construction and industrial sites may contribute phosphorus via sediment runoff during stormwater events. These areas within the DMRHW must comply with the requirements of the MPCA's NPDES Stormwater Program and create a Stormwater Pollution Prevention Plan (SWPPP) that summarizes how stormwater will be minimized from the site.

*Concentrated Animal Feedlot Operations (CAFOs):* MPCA recognized the presence of CAFOs in the DMRHW (Section 3.5.1.1 and Appendix A of the final TMDL document). CAFOs are generally defined as having over 1000 animal units confined for more than 45 days in a year. These facilities must be designed to contain all surface water runoff (i.e., have zero discharge from their facilities) and have a current manure management plan. Under MPCA NPDES permit requirements, discharges of pollutants from CAFOs are not allowed except under extreme circumstances (24-hour storm duration exceeding the 25-year recurrence interval), and therefore no allocations were developed for the manure-handling facilities, WLA (WLA = 0). Runoff from the spreading of manure in agronomic rates is not regulated as a point source discharge and is therefore considered in the non-point source load discussed below.

*Combined Sewer Overflows (CSOs) and Sanitary Sewer Overflows (SSOs):* MPCA determined that the DMRHW does not have CSOs nor SSOs which contribute phosphorus to waters of the DMRHW.

***Nonpoint Source Identification:*** The potential nonpoint sources to the DMRHW are:

*Stream channelization and stream erosion:* Eroding streambanks and channelization efforts may add nutrients, organic material and organic-rich sediment to local surface waters. Nutrients may be added if there is particulate phosphorus bound with eroding soils. Eroding riparian areas may be linked to soil inputs within the water column and potentially to changes in flow patterns. Changes in flow patterns may also encourage down-cutting of the streambed and streambanks. Stream channelization efforts can increase the velocity of flow (via the removal of the sinuosity of a natural channel) and disturb the natural sedimentation processes of the streambed.

*Stormwater runoff from agricultural land use practices:* Runoff from agricultural lands may contain significant amounts of nutrients, organic material and organic-rich sediment which may lead to impairments in the DMRHW. Manure spread onto fields from animal feeding operations (AFOs) is often a source of phosphorus, and can be exacerbated by tile drainage lines, which channelize the stormwater. Tile lined fields and channelized ditches enable particles to move more efficiently into surface waters. Phosphorus, organic material and organic-rich sediment may be added via surface runoff from upland areas which are being used for Conservation Reserve Program (CRP) lands, grasslands, and agricultural lands used for growing hay or other crops. Stormwater runoff may contribute nutrients and organic-rich sediment to surface waters from livestock manure, fertilizers, vegetation and erodible soils.

*Discharges from Subsurface Sewage Treatment Systems (SSTS) or unsewered communities:* Failing septic systems are a potential source of nutrients within the DMRHW. Septic systems generally do not discharge directly into a water body, but effluents from SSTS may leach into groundwater or pond at the surface where they can be washed into surface waters via stormwater runoff events. Age, construction and use of SSTS can vary throughout a watershed and influence the nutrient contribution from these systems.

Failing SSTS are specifically defined as systems that are failing to protect groundwater from contamination, while those systems which discharge partially treated sewage to the ground surface, road ditches, tile lines, and directly into streams, rivers and lakes are considered an imminent threat to public health and safety (ITPHS). ITPHS systems also include illicit discharges from unsewered communities.

*Unrestricted livestock access to streams:* Livestock with access to stream environments may add nutrients directly to the surface waters or resuspend particles that had settled on the stream bottom. Direct deposition of animal wastes can result in very high localized nutrient concentrations and may contribute to downstream impairments. Smaller animal facilities may add nutrients to surface waters via wastewater from these facilities or stormwater runoff from near-stream pastures.

*Atmospheric deposition:* Phosphorus and organic material may be added via particulate deposition. Particles from the atmosphere may fall onto lake surfaces or other surfaces within the DMRHW. Phosphorus can be bound to these particles which may add to the phosphorus inputs to surface water environments.

*Wetland and Forest Sources:* Phosphorus, organic material and organic-rich sediment may be added to surface waters by stormwater flows through wetland and forested areas in the DMRHW. Storm events may mobilize phosphorus through the transport of suspended solids and other organic debris.

*Wildlife:* Wildlife is a known source of nutrients in water bodies as many animals spend time in or around water bodies. Deer, geese, ducks, raccoons, and other animals all create potential sources of nutrients via contaminated runoff from animal habitats, such as urban park areas, forest, and rural areas.

**Future Growth:**
MPCA does not anticipate there to be imminent growth in the DMRHW. MPCA explained in Section 5 of the final TMDL document that most of the agricultural areas in the DMRHW are unlikely to be changing in the near future. The WLA and load allocations (LA) for the DMRHW TMDLs were calculated for all current and future sources. Any expansion of point or nonpoint sources will need to comply with the respective WLA and LA values calculated in the DMRHW TMDLs.

MPCA did calculate a reserve capacity for both the Des Moines River (-501) and Heron Lake Outlet (-527) nutrient TMDLs (Section 4.3.5 of the final TMDL document). MPCA explained that the reserve capacity is set aside for current unsewered communities which, at some point in the future, may be connected into the sewer lines for the existing WWTPs. The reserve capacity calculation was based on assumed TP loads (0.8 kg/capita/year) and a reduction efficiency of the WWTP (Table 11 of the final TMDL document).

The EPA finds that the TMDL document submitted by 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 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 Uses:**

Water quality standards (WQS) are the fundamental benchmarks by which the quality of surface waters are measured. Within the State of Minnesota, WQS are developed pursuant to the Minnesota Statutes Chapter 115, Sections 03 and 44. Authority to adopt rules, regulations, and standards as are necessary and feasible to protect the environment and health of the citizens of the State is vested with the MPCA. Through adoption of WQS into Minnesota's administrative rules (principally Chapters 7050 and 7052), MPCA has identified designated uses to be protected in each of its drainage basins and the criteria necessary to protect these uses.

Minnesota Rule Chapter 7050 designates uses for waters of the state. The segments addressed by the DMRHW TMDLs are designated as Class 2 waters for aquatic recreation use (e.g., fishing, swimming, boating, etc.) and aquatic life use (phosphorus). The Class 2 designated use is described in Minnesota Rule 7050.0140 (3):

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

**Standards:**

**Narrative Criteria:**

Minnesota Rule 7050.0150 (3) set forth narrative criteria for Class 2 waters of the State:

*"For all Class 2 waters, the aquatic habitat, which includes the waters of the state and stream bed, shall not be degraded in any material manner, there shall be no material increase in undesirable slime growths or aquatic plants, including algae, nor shall there be any significant increase in harmful pesticide or other residues in the waters, sediments, and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent and the use thereof shall not be seriously impaired or endangered, the species composition shall not be altered materially, and the propagation or migration of the fish and other biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste, or other wastes to the waters."*

**Numeric criteria:**

The total phosphorus and response variable (i.e., chl-*a* (sestonic), $DO_{FLUX}$, $BOD_5$ and pH) values in Table 3 are the EPA approved water quality standards for the South River Nutrient Region. These standards apply June 1 to September 30 as a summer average.

**Table 3: River Eutrophication Water Quality Standards Applicable in the Des Moines River Headwaters Watershed TMDLs**

| Parameter | Units | Water Quality Standard |
|---|---|---|
| TP | µg/L | ≤ 150 |
| chl-*a* (sestonic chl-*a*) | µg/L | ≤ 35 |
| $DO_{FLUX}$ | mg/L | ≤ 4.5 |
| $BOD_5$ | mg/L | ≤ 3.0 |
| pH | pH units | 6.5 ≤ [ ] ≤ 9.0 |

*Nutrient TMDL Targets (streams impaired due to excessive nutrients):* MPCA employed the TP target of **150 µg/L** for both segments. MPCA assumed that if the causal variable (TP) meets its target (i.e., 150 µg/L) then it is reasonable to presume that the response variables (i.e., chl-*a* (sestonic), $DO_{FLUX}$, $BOD_5$ and pH) will also meet their targeted values.

The EPA finds that the TMDL document submitted by 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 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:**
Flow duration curves (FDC) were created for both the Des Moines River (-501) and Heron Lake Outlet (-527) segments using flow data from Hydrologic Simulation Program-Fortran (HSPF) modeling efforts. HSPF is a comprehensive modeling package used to simulate watershed hydrology and water quality on a basin scale. The package includes both an Agricultural Runoff Model and a more general nonpoint source model. HSPF parametrizes numerous hydrologic and hydrodynamic processes to determine flow rate, sediment, and nutrient loads. HSPF uses continuous meteorological records to create hydrographs and to estimate time series pollution concentrations.[1] The output of the HSPF process is a model of multiple hydrologic response units (HRUs), or subwatersheds of the overall DMRHW. MPCA used HSPF daily modeled flows from 2005 to 2014 to simulate daily flows and average phosphorus concentrations within the Des Moines River watershed. Modeled flow data focused on dates within the recreation season (June 1 to September 30).

The language of the river eutrophication standard (RES) explains that the RES must be maintained for the long-term summer concentration of TP, when averaged over all flows. MPCA explained that to align with the language of the RES the loading capacity value was based on the seasonal (June 1 to September 30) average of midpoint flows of five equally spaced flow regimes (0% to 20%, 20% to 40%, 40% to 60%, 60% to 80% and 80% to 100%). Selecting the midpoint flow values from these equally spaced flow regimes avoids weighting certain flow regimes more than other flow regimes when calculating the average flow across all flow regimes. The loading capacity was calculated as the average seasonal flow multiplied by the river eutrophication target of 150 µg/L (Table 4 of this Decision Document). Upstream water bodies with completed phosphorus TMDLs were set as a boundary condition (Section 4.1.2 of the final TMDL document) and MPCA ran various model scenarios to determine how to account for the boundary condition in its TMDL calculations for the Des Moines River (-501) and Heron Lake Outlet (-527) segments. MPCA eventually found the model scenario where the boundary conditions would attain the nutrient water quality standard and the stream segments (i.e., -501 and -527) would attain the TP eutrophication target of 150 µg/L.

The TMDL results are found in Table 4 of this Decision Document. The load allocations were calculated after the determination of the allocations for each of the permitted facilities (i.e., WLAs), the Margin of Safety (MOS) (10% of the loading capacity) and reserve capacity. Load allocations (e.g., stormwater runoff from agricultural land use practices and feedlots, SSTS, wildlife inputs etc.) were not split among

[1] HSPF User's Manual - https://water.usgs.gov/software/HSPF/code/doc/hspfhelp.zip; EPA TMDL Models Webpage - https://www.epa.gov/exposure-assessment-models/tmdl-models-and-tools

individual nonpoint contributors. Instead, load allocations were combined together into a categorical LA ('Watershed Contribution LA') to cover all nonpoint source contributions.

**Table 4: Total Phosphorus (TP) Lake TMDLs for the Des Moines River Headwaters Watershed**

| Allocation | Source | Flow Condition-Summer Average TP Load |
|---|---|---|
| | | lbs/day |
| | | |
| **TP TMDL for Des Moines River (07100001-501)** | | |
| *Wasteload Allocation* | Heron Lake WWTP (MNG580189) | 0.79 |
| | Red Rock Rural Water WTP (MNG640077) | 0.13 |
| | Windom WWTP (MN0022217) | 16.10 |
| | Construction (MNR100001) and Industrial Stormwater (MNR050000) | 0.49 |
| | ***WLA Totals*** | **17.51** |
| *Load Allocation* | ***Watershed Contribution (LA)*** | **427.00** |
| ***Margin of Safety (10%)*** | | **49.00** |
| ***Reserve Capacity*** | | **0.14** |
| **Loading Capacity (TMDL)** | | **493.65** |
| Estimated Percent Reduction | | 55% |
| | | |
| **TP TMDL for Heron Lake Outlet (07100001-527)** | | |
| *Wasteload Allocation* | Heron Lake WWTP (MNG580189) | 0.79 |
| | Construction (MNR100001) and Industrial Stormwater (MNR050000) | 0.43 |
| | ***WLA Totals*** | **1.22** |
| *Load Allocation* | ***Watershed Contribution (LA)*** | **191.00** |
| ***Margin of Safety (10%)*** | | **21.00** |
| ***Reserve Capacity*** | | **0.02** |
| **Loading Capacity (TMDL)** | | **213.24** |
| Estimated Percent Reduction | | 50% |

EPA supports the data analysis and modeling approach utilized by MPCA in its calculation of wasteload allocations, load allocations and the margin of safety for the Des Moines River (-501) and Heron Lake Outlet (-527) TP TMDLs. Additionally, EPA concurs with the loading capacities calculated by the MPCA in these TP TMDLs. EPA finds MPCA's approach for calculating the loading capacity to be reasonable and consistent with EPA guidance.

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

## 4. Load Allocations (LA)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range

from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

**Comment:**
MPCA determined the LA calculations for each of the TMDLs based on the applicable WQS. MPCA recognized that LAs for each of the individual TMDLs can be attributed to different nonpoint sources. MPCA identified several nonpoint sources which contribute nutrient loading to the DMRHW TMDLs (Table 4 of this Decision Document). These nonpoint sources included: stream channelization and stream erosion, stormwater from agricultural and feedlot areas, failing septic systems, unrestricted livestock access to riparian areas, wildlife (e.g., deer, geese, ducks, raccoons, turkeys and other animals) and atmospheric deposition. MPCA did not calculate individual load allocation values for each of these potential nonpoint source considerations. Instead MPCA combined the LA sources into one "Watershed Contribution LA" calculation (Table 4 of this Decision Document).

EPA finds MPCA's approach for calculating the LA for phosphorus to be reasonable.

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

## 5. Wasteload Allocations (WLAs)

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

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

**Comment:**
MPCA identified three permitted facilities which received nutrient WLAs, the Heron Lake WWTP (MNG580189), the Red Rock Rural Water WTP (MNG640077) and the Windom WWTP (MN0022217) which contribute treated wastewater to the Des Moines River (-501) and Heron Lake Outlet (-527) segments (Table 4 of this Decision Document). The WLAs were calculated using the maximum

allowable discharge and a discharge limit (Table 10 of the final TMDL document). The TP limit for each facility was based on HSPF modeling efforts which built various scenarios of discharge conditions with the aim of meeting river eutrophication TP criterion of 150 µg/L (Section 4.3.3 of the final TMDL document). MPCA explained that these scenarios assumed that if upstream lakes (i.e., Lake Talcot and North Heron Lake) attain their water quality standards for nutrients and the three facilities meet their discharge limit targets of 1,000 µg/L (Table 10 of the final TMDL document) then the Des Moines River (-501) and Heron Lake Outlet (-527) segments will meet their phosphorus numeric standard.

MPCA acknowledged the presence of CAFOs in the DMRHW in Section 3.5.1.1 of the final TMDL document. CAFOs and other feedlots are generally not allowed to discharge to waters of the State (Minnesota Rule 7020.2003). CAFOs were assigned a WLA of zero (WLA = 0) by MPCA for the DMRHW TMDLs. CAFOs in Minnesota are regulated under either a general permit or an individual CAFO permit. CAFO facilities must comply with all authorized discharge and overflow requirements described in the Minnesota general CAFO permit or individual CAFO permits. In accordance with the CAFO General Permit and individual permits, overflow events from CAFOs are allowable due to precipitation related overflows from CAFO storage structures which are properly designed, constructed, operated and maintained in accordance with CAFO permits. Discharges from such overflows are allowable only if they do not cause or contribute to a violation of water quality standards. MPCA determined a WLA = 0 for CAFOs in the basin. Manure spreading from CAFOs at agronomic rates are considered a non-point source of phosphorus and are included in the non-point source loads in the TMDL calculations.

MPCA identified construction and industrial stormwater contributions as necessitating a WLA (Table 4 of this Decision Document). This WLA was represented as a categorical WLA for construction stormwater and industrial stormwater. The categorical WLA was calculated based on the average annual fraction of the watershed area which was determined to be under construction based on MPCA Construction Permit data (Section 3.5.1.1 of the final TMDL document). This fraction was estimated to be 0.1% of the total watershed area and was subsequently multiplied by the loading capacity to estimate a construction/industrial stormwater WLA. MPCA explained that there is one industrial stormwater permit currently in the DMRHW, the Heron Lake Bio Energy facility (MN0067385), which discharges only stormwater and will be covered under the categorical WLA for construction and industrial stormwater.

Attaining the construction stormwater and industrial stormwater loads described in the DMRHW TMDLs is the responsibility of construction and industrial site managers. For example, facilities which may contribute to the Des Moines River segment (-501), local permittees are responsible for overseeing that construction stormwater loads which may impact water quality in this segment do not exceed the WLA assigned to those areas. Local permittees are required to have a construction stormwater ordinance at least as stringent as the State's NPDES/SDS General Stormwater Permit for Construction Activity (MNR100001). In the final TMDL document MPCA explained that if a construction site owner/operator obtains coverage under the NPDES/SDS General Stormwater Permit (MNR100001) and properly selects, installs and maintains all BMPs required under MNR100001 and applicable local construction stormwater ordinances, including those related to impaired waters discharges and any applicable additional requirements found in Appendix A of the Construction General Permit, the stormwater discharges would be expected to be consistent with the WLA in this TMDL. BMPs and other

stormwater control measures which act to limit the discharge of the pollutant of concern (phosphorus) are defined in MNR100001.

The NPDES program requires construction and industrial sites to create SWPPPs which summarize how stormwater pollutant discharges will be minimized from construction and industrial sites. Under the MPCA's Stormwater General Permit (MNR100001) and applicable local construction stormwater ordinances, managers of sites under construction or industrial stormwater permits must review the adequacy of local SWPPPs to ensure that each plan complies with the applicable requirements in the State permits and local ordinances. As noted above, MPCA has explained that meeting the terms of the applicable permits will be consistent with the WLAs set in the DMRHW TMDLs. In the event that the SWPPP does not meet the WLA, the SWPPP will need to be modified within 18-months of the approval of the TMDL by the U.S. EPA. This applies to sites under permits for MNR100001, NPDES/SDS Industrial Stormwater Multi-Sector General Permit (MNR050000) or NPDES/SDS General Permit for Construction Sand & Gravel, Rock Quarrying and Hot Mix Asphalt Production facilities (MNG490000).

EPA finds the MPCA's approach for calculating the WLA for the DMRHW TMDLs to be reasonable and consistent with EPA guidance.

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

## 6. Margin of Safety (MOS)

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

**Comment:**
The final TMDL submittal outlines the determination of the Margin of Safety for the nutrient TMDLs. Both parameters employed an explicit MOS set at 10% of the loading capacity. MPCA explained that the explicit MOS was set at 10% due to the following factors discovered during nutrient TMDL development:

- Environmental variability in pollutant loading;
- Uncertainty in the observed daily flow record, the simulated flow and concentration data from the HSPF model; and
- Variability in water quality data (i.e., collected water quality monitoring data, field sampling error, etc.).

The EPA finds that the TMDL document submitted by 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:**
Seasonal variation was considered for the DMRHW TMDLs as described in Section 4.3.6 of the final TMDL document. The nutrient targets employed in the DMRHW TMDLs were based on the average nutrient values collected during the growing season (June 1 to September 30). The water quality targets were designed to meet the eutrophication WQS during the period of the year where the frequency and severity of algal growth is the greatest.

The Minnesota eutrophication standards state that total phosphorus WQS are defined as the mean concentration of phosphorus values measured during the growing season. In the DMRHW nutrient TMDL efforts, the LA and WLA estimates were calculated from modeling efforts which incorporated mean growing season total phosphorus values. Nutrient loading capacities were set in the TMDL development process to meet the WQS during the most critical period. The mid-late summertime period is typically when eutrophication standards are exceeded and water quality within the DMRHW is deficient. By calibrating the modeling efforts to protect these water bodies during the worst water quality conditions of the year, it is assumed that the loading capacities established by the TMDLs will be protective of water quality during the remainder of the calendar year (October through May).

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

## 8. Reasonable Assurance

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

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

EPA's August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for

nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

**Comment:**
The DMRHW nutrient TMDLs provide reasonable assurance that actions identified in the implementation section of the final TMDL (i.e., Sections 6 and 8 of the final TMDL document), will be applied to attain the loading capacities and allocations calculated for the impaired reaches within the DMRHW. The recommendations made by MPCA will be successful at improving water quality if the appropriate local groups work to implement these recommendations. Those mitigation suggestions, which fall outside of regulatory authority, will require commitment from state agencies and local stakeholders to carry out the suggested actions.

MPCA has identified several local partners which have expressed interest in working to improve water quality within the DMRHW. Implementation practices will be implemented over the next several years. It is anticipated that staff from Soil and Water Conservation District (SWCDs) (e.g., the Cottonwood County SWCD) staff, local Minnesota Board of Soil and Water Resources (BWSR) offices, and other local watershed groups (i.e., the Heron Lake Watershed District), will work together to reduce pollutant inputs to the DMRHW. MPCA has authored a Des Moines River Basin WRAPS document (February 25, 2021) which provides information on the development of scientifically-supported restoration and protection strategies for implementation planning and action. MPCA sees the WRAPS document as a starting point for which MPCA and local partners can develop tools that will help local governments, land owners, and special interest groups determine (1) the best strategies for making improvements and protecting resources that are already in good condition, and (2) focus those strategies in the best places to do work.

Different organizations have been active in the DMRHW at implementing various programs to improve overall water quality in the watershed. The Heron Lake Watershed District (https://hlwdonline.org/php/) is one such organization whose goals are to protect and improve water resources in the Des Moines River Watershed by supporting watershed residents through the use of education and financial programming. The Heron Lake Watershed District has provided incentives for landowners to install practices such as filter strips, field windbreaks, critical area plantings, terrace systems, conservation tillage/residue coverage, grass buffers, streambank stabilization, new septic system installation, feedlot planning and inventories, and other flood storage project work. The Heron Lake Watershed District intends to facilitate local collaboration that encourages, educates, and demonstrates how to improve flood control, riparian stabilization, area soil health and water quality while improving productivity, profitability and sustainability of natural resources.

Continued water quality monitoring within the basin is supported by MPCA. Additional water quality monitoring results could provide insight into the success or failure of BMP systems designed to reduce nutrient loading into the surface waters of the watershed. Local watershed managers would be able to reflect on the progress of the various pollutant removal strategies and would have the opportunity to change course if observed progress is unsatisfactory.

The MPCA regulates the collection, transportation, storage, processing and disposal of animal manure and other livestock operation wastes at State registered animal feeding operation (AFO) facilities. The MPCA Feedlot Program implements rules governing these activities and provides assistance to counties

and the livestock industry. The feedlot rules apply to most aspects of livestock waste management including the location, design, construction, operation and management of feedlots and manure handling facilities.

Reasonable assurance that the WLA set forth will be implemented is provided by regulatory actions. According to 40 C.F.R. 122.44(d)(1)(vii)(B), NPDES permit effluent limits must be consistent with assumptions and requirements of all WLAs in an approved TMDL. MPCA's stormwater program and the NPDES permit program are the implementing programs for ensuring WLA are consistent with the TMDL. The NPDES program requires construction and industrial sites to create SWPPPs which summarize how stormwater will be minimized from construction and industrial sites. Under the MPCA's Stormwater General Permit, managers of sites under construction or industrial stormwater permits must review the adequacy of local SWPPPs to ensure that each plan meets WLA set in the DMRHW TMDLs. In the event that the SWPPP does not meet the WLA, the SWPPP will need to be modified. This applies to sites under the MPCA's General Stormwater Permit for Construction Activity (MNR100001) and its NPDES/SDS Industrial Stormwater Multi-Sector General Permit (MNR050000) or NPDES/SDS General Permit for Construction Sand & Gravel, Rock Quarrying and Hot Mix Asphalt Production facilities (MNG490000).

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

The CWLA also provides details on public and stakeholder participation, and how the funding will be used. In part to attain these goals, the CWLA requires MPCA to develop WRAPS. The WRAPS are required to contain such elements as the identification of impaired waters, watershed modeling outputs, point and nonpoint sources, load reductions, etc. (*Chapter 114D.26*; CWLA). The WRAPS also contain an implementation table of strategies and actions that are capable of achieving the needed load reductions, for both point and nonpoint sources (*Chapter 114D.26*, Subd. 1(8); CWLA). Implementation plans developed for the TMDLs are included in the table, and are considered "priority areas" under the WRAPS process (*Watershed Restoration and Protection Strategy Report Template*, MPCA). This table includes not only needed actions but a timeline for achieving water quality targets, the reductions needed from both point and nonpoint sources, the governmental units responsible, and interim milestones for achieving the actions. MPCA has developed guidance on what is required in the WRAPS (*Watershed Restoration and Protection Strategy Report Template*, MPCA). The Des Moines River WRAPS report was approved by MPCA on February 25, 2021.

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

The EPA finds that this criterion has been adequately addressed.

## 9. Monitoring Plan to Track TMDL Effectiveness

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

**Comment:**
The final TMDL document outlines the water monitoring efforts in the DMRHW (Section 7 of the final TMDL document). Progress of TMDL implementation will be measured through regular monitoring efforts of water quality and total BMPs completed. MPCA anticipates that monitoring will be completed by local groups (e.g., the Heron Lake Watershed District) and volunteers, as long as there is sufficient funding to support the efforts of these local entities. At a minimum, the DMRHW will be monitored once every 10 years as part of the MPCA's Intensive Watershed Monitoring cycle.

Water quality monitoring is a critical component of the adaptive management strategy employed as part of the implementation efforts utilized in the DMRHW. Water quality information will aid watershed managers in understanding how BMP pollutant removal efforts are impacting water quality. Water quality monitoring combined with an annual review of BMP efficiency will provide information on the success or failure of BMP systems designed to reduce pollutant loading into water bodies of the DMRHW. Watershed managers will have the opportunity to reflect on the progress or lack of progress and will have the opportunity to change course if progress is unsatisfactory. Review of BMP efficiency is expected to be completed by the local and county partners.

River and stream monitoring in the DMRHW, has been completed by a variety of organizations (i.e., SWCDs) and funded by Clean Water Partnership Grants, and other available local funds. MPCA anticipates that stream monitoring in the DMRHW should continue in order to build on the current water quality dataset and track changes based on implementation progress. Continuing to monitor water quality in the listed segments will determine whether or not stream restoration measures are required to bring the watershed into attainment with water quality standards.

The EPA finds that this criterion has been adequately addressed.

## 10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint

source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

**Comment:**
The findings from the DMRHW TMDLs will be used to inform the selection of implementation activities as part of the Des Moines River Basin WRAPS process. The purpose of the WRAPS report is to support local working groups and jointly develop scientifically-supported restoration and protection strategies to be used for subsequent implementation planning.

The TMDL outlined some implementation strategies in Section 8 of the final TMDL document. MPCA outlined the importance of prioritizing areas within the DMRHW, education and outreach efforts with local partners, and partnering with local stakeholders to improve water quality within the watershed. The Des Moines River Basin WRAPS document (February 25, 2021) includes additional detail regarding specific recommendations from MPCA to aid in the reduction of nutrients to surface waters of the DMRHW. Additionally, MPCA referenced the Statewide Nutrient Reduction Strategy (https://www.pca.state.mn.us/water/nutrient-reduction-strategy) for focused implementation efforts targeting phosphorus nonpoint sources in DMRHW. The reduction goals for the nutrient TMDLs may be met via components of the following strategies:

*Pasture management and agricultural reduction strategies:* These strategies involve reducing nutrient transport from fields and minimizing soil loss. Specific practices would include; erosion control through conservation tillage, reduction of winter spreading of fertilizers, elimination of fertilizer spreading near open inlets and sensitive areas, installation of stream and lake shore buffer strips, streambank stabilization practices (gully stabilization and installation of fencing near streams), and nutrient management planning.

*Pasture management/livestock exclusion plans:* Reducing livestock access to stream environments will lower the opportunity for direct transport of nutrients to surface waters. The installation of exclusion fencing near stream and river environments to prevent direct access for livestock, installing alternative water supplies, and installing stream crossings between pastures, would work to reduce the influxes of nutrients and improve water quality within the watershed. Additionally, introducing rotational grazing to increase grass coverage in pastures, and maintaining appropriate numbers of livestock per acre for grazing, can also aid in the reduction of nutrient inputs.

*Manure management (feedlot and manure stockpile runoff controls):* Manure has been identified as a potential source of nutrients in the DMRHW. Nutrients derived from manure can be transported to surface water bodies via stormwater runoff. Nutrient laden water can also leach into groundwater resources. Improved strategies in the collection, storage and management of manure can minimize impacts of nutrients entering the surface and groundwater system. Repairing manure storage facilities or building roofs over manure storage areas may decrease the amount of nutrients in stormwater runoff.

*Manure management plans:* Developing manure management plans can ensure that the storage and application rates of manure are appropriate for land conditions. Determining application rates that take into account the crop to be grown on that particular field and soil type will ensure that the correct

amount of manure is spread on a field given the conditions. Spreading the correct amount of manure will reduce the availability of nutrients to migrate to surface waters.

*Subsurface septic treatment systems and maintenance:* Septic systems are believed to be a source of nutrients to waters in the DMRHW. Failing systems are expected to be identified and addressed via upgrades to those SSTS not meeting septic ordinances. MPCA explained that SSTS improvement priority should be given to those failing SSTS adjacent to streams within the direct watersheds for each water body. MPCA aims to greatly reduce the number of failing SSTS in the future via local septic management programs and educational opportunities. Educating the public on proper septic maintenance, finding and eliminating illicit discharges, and repairing failing systems could lessen the impacts of septic derived nutrients inputs into the DMRHW.

*Riparian Area Management Practices:* Protection of streambanks within the watershed through planting of vegetated/buffer areas with grasses, legumes, shrubs or trees will mitigate nutrient inputs into surface waters. These areas will filter stormwater runoff before the runoff enters the main stem or tributaries of the DMRHW.

*Stormwater wetland treatment systems:* Constructed wetlands with the purpose of treating wastewater or stormwater inputs could be explored in selected areas of the DMRHW. Constructed wetland systems may be vegetated, open water, or a combination of vegetated and open water. MPCA explained that recent studies have found that the more effective constructed wetland designs employ large treatment volumes in proportion to the contributing drainage area, have open water areas between vegetated areas, have long flow paths and a resulting longer detention time, and are designed to allow few overflow events.

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

## 11. Public Participation

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

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

**Comment:**
The public participation section of the TMDL submittal is found in Section 9 of the final TMDL document. Throughout the development of the DMRHW TMDLs the public was given various opportunities to participate. As part of the strategy to communicate the goals of the TMDL project and to engage with members of the public, MPCA worked with county and SWCD staff (e.g., from Cottonwood County), members of the Heron Lake Watershed District, citizens and other state agency staff to promote water quality, to gain input from landowners via surveys and interviews and to better understand the social dynamics of stakeholders in the DMRHW. MPCA's goal was to create civic engagement and discussion which would enhance the content of the TMDL and WRAPS documents. A full description of civic engagement activities associated with the TMDL process is available in the Des Moines River Basin WRAPS report (February 25, 2021).

MPCA posted the draft TMDL online at (http://www.pca.state.mn.us/water/tmdl) for a public comment period. The public comment period was started on December 7, 2020 and ended on January 6, 2021.

MPCA received two public comments on the Des Moines River Headwaters Watershed River Eutrophication TMDL and the Des Moines River Basin Watersheds TMDL which were developed concurrently by MPCA. The first commenter requested clarification on WLA assigned to the Worthington WWTP within the Des Moines River Basin Watersheds TMDL. MPCA addressed the comment and adjusted its discussion of WLA within the Des Moines River Basin Watersheds TMDL. The second commenter expressed concern regarding cattle access to streams in the Des Moines River watershed. MPCA forwarded the comment onto its feedlot enforcement staff who provided a response and referenced relevant sections of the WRAPS document. EPA determined that MPCA adequately addressed the comments received during the public notice period. All public comments and MPCA responses to publicly submitted comments were shared with EPA on March 1, 2021.

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

**Comment:**
The EPA received the final Des Moines River Headwaters Watershed River Eutrophication TMDL document, submittal letter and accompanying documentation from MPCA on March 1, 2021. The transmittal letter explicitly stated that the final TMDLs referenced in Table 1 of this Decision Document were being submitted to EPA pursuant to Section 303(d) of the Clean Water Act for EPA review and approval.

The letter clearly stated that this was a final TMDL submittal under Section 303(d) of CWA. The letter also contained the name of the watershed as it appears on Minnesota's 303(d) list, and the causes/pollutants of concern. This TMDL was submitted per the requirements under Section 303(d) of the Clean Water Act and 40 CFR 130.

The EPA finds that the TMDL transmittal letter submitted for the Des Moines River Headwaters Watershed River Eutrophication TMDLs by MPCA satisfies the requirements of this twelfth element.

## 13. Conclusion

After a full and complete review, the EPA finds that the 2 TP TMDLs satisfy all elements for approvable TMDLs. This TMDL approval is for **two TMDLs**, addressing segments for aquatic recreation use impairments (Table 1 of this Decision Document).

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