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

NOV 14 2017

REPLY TO THE ATTENTION OF:

WW-16J

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

Dear Mr. Skuta:

The U.S. Environmental Protection Agency has conducted a complete review of the final Total Maximum Daily Loads (TMDL) for the Pine River Watershed (PRW), including support documentation and follow up information. The PRW is in central Minnesota in parts of Aitken, Cass, Crow Wing and Hubbard Counties. The PRW TMDLs address impaired aquatic recreation due to excessive nutrients.

EPA has determined that the PRW 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 TMDLs. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in the enclosed decision document.

We wish to acknowledge Minnesota's 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. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Christopher Korleski
Director, Water Division

Enclosure

cc: Celine Lyman, MPCA

wq-iw8-51g

TMDL: Pine River Watershed phosphorus TMDLs, Aitkin, Cass, Crow Wing and Hubbard Counties, Minnesota
Date: November 14, 2017

DECISION DOCUMENT FOR THE PINE RIVER WATERSHED TMDLS, AITKIN, CASS, CROW WING & HUBBARD COUNTIES, 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 Pine River Watershed (PRW) (HUC-8 #07010105) is approximately 785 square miles (502,400 acres) in size, is within the Northern Lakes and Forests (NLF) ecoregion and is located in central Minnesota in parts of Aitkin, Cass, Crow Wing and Hubbard counties. Waters in the PRW generally flow from west to east where they empty into the Mississippi River. The PRW TMDLs address two (2) impaired lakes due to excessive nutrients (Table 1 of this Decision Document).

Table 1: Pine River Watershed impaired waters addressed by this TMDL

Water body name	Assessment Unit ID	Affected Use	Pollutant or stressor	TMDL
Jail Lake	18-0415-00	Aquatic Recreation	Nutrients	Total Phosphorus TMDL
Kego Lake	18-0293-00	Aquatic Recreation	Nutrients	Total Phosphorus TMDL

To adhere with its eutrophication standard the Minnesota Pollution Control Agency (MPCA) classifies lakes as either shallow or deep lakes. Shallow lakes are lakes with a maximum depth of 15 feet or less. Deep lakes are enclosed basins with maximum depths greater than 15 feet. MPCA explained that Jail Lake and Kego Lake are both considered as deep lakes within the NLF ecoregion.

Table 2: Morphometric and watershed characteristics of lakes addressed in the Pine River Watershed TMDLs

Parameter	Jail Lake (18-0415-00)	Kego Lake (18-0293-00)
Surface Area (acres)	183	296
Littoral Area (% of total area)	67%	63%
Volume (acre-feet)	2,108	3,286
Mean depth (feet)	11.5	11.1
Maximum Depth (feet)	22	20
Watershed area (including lake area) (acres)	3,606	5,600
Watershed area (surface area)	20:1	21:1

Land Use:

Land use in the PWW is predominantly forested lands (61.3 % for the Jail Lake subwatershed and 69.9% for the Kego Lake subwatershed), wetlands, shrub/scrub lands and open water (Table 3 of this Decision Document). Significant development is not expected in the PRW. The land use within the watershed is primarily forested and wetland areas and according to MPCA is expected to remain as such for the foreseeable future.

Table 3: Land Cover Type for Jail Lake and Kego Lake in the Pine River Watershed TMDLs (based on 2011 NLCD)

Land Cover Type	Jail Lake (18-0415-00)	Kego Lake (18-0293-00)
Cultivated Crops	2.4%	0.0%
Developed	2.1%	1.8%
Forest	61.3%	69.9%
Grassland / Herbaceous	1.2%	0.4%
Hay / Pasture	3.1%	0.3%
Open Water	10.5%	6.2%
Shrub / Scrub	4.3%	6.1%
Wetlands	15.1%	15.2%
TOTAL	100%	100%

Problem Identification:
Phosphorus TMDLs: Lakes identified in Table 1 of this Decision Document were included on the draft 2014 Minnesota 303(d) list due to excessive nutrients (phosphorus). Total phosphorus (TP), chlorophyll-*a* (chl-*a*) and Secchi depth (SD) measurements in the PRW indicated that Jail Lake and Kego Lake were not attaining their designated aquatic recreation uses due to excessive nutrients. Water quality monitoring within the PRW was completed at several locations and the data collected during those efforts was the foundation for BATHTUB modeling efforts and TMDL calculations.

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 and decreases in dissolved oxygen concentration 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:
The water bodies addressed by the PRW TMDLs were given a priority ranking for TMDL development due to: the impairment impacts on public health and aquatic life, the public value of the impaired water resource, the likelihood of completing the TMDL in an expedient manner, the inclusion of a strong base of existing data, the restorability of the water body, the technical capability and the willingness of local partners to assist with the TMDL, and the appropriate sequencing of TMDLs within a watershed or basin. Areas within the PRW are popular locations for aquatic recreation. Water quality degradation has led to efforts to improve the overall water quality within the PRW, and to the development of TMDLs for these water bodies. Additionally, MPCA explained that its TMDL development priorities were prioritized to align with its Statewide watershed monitoring approach and its 10-year Watershed Restoration and Protection Strategies (WRAPS) schedule.

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

Source Identification (point and nonpoint sources):

Point Source Identification: The potential point sources to the PRW are:

NPDES permitted facilities: MPCA determined that there are no NPDES permitted facilities within the PRW.

Municipal Separate Storm Sewer System (MS4) communities: MPCA determined that there are no MS4 communities within the PRW.

CSOs and SSOs: MPCA determined that the PRW does not have CSOs nor SSOs which contribute nutrients to the nutrient impaired segments of the PRW.

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 PRW must comply with the requirements of the MPCA's NPDES Stormwater Program. The NPDES program requires construction and industrial sites to create a Stormwater Pollution Prevention Plan (SWPPP) that summarizes how stormwater will be minimized from the site.

Concentrated Animal Feeding Operations (CAFOs): MPCA determined that there are no CAFOs within the PRW.

Nonpoint Source Identification: The potential nonpoint sources to the PRW are:

Internal loading: The release of phosphorus from lake sediments, the release of phosphorus from lake sediments via physical disturbance from benthic fish (rough fish, ex. carp), the release of phosphorus from wind mixing the water column, and the release of phosphorus from decaying curly-leaf pondweeds, may all contribute internal phosphorus loading to the lakes of the PRW. Phosphorus may build up in the bottom waters of the lake and may be resuspended or mixed into the water column when the thermocline decreases and the lake water mixes.

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 PRW. Storm events may mobilize phosphorus through the transport of suspended solids and other organic debris.

Illicit discharges from Subsurface Sewage Treatment Systems (SSTS) or unsewered communities: Failing septic systems are a potential source of nutrients within the PRW. 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.

Urban/residential sources: Nutrients, organic material and organic-rich sediment may be added via runoff from urban/developed areas near the lakes of the PRW. Runoff from urban/developed areas can

include phosphorus derived from fertilizers, leaf and grass litter, pet wastes, and other sources of anthropogenic derived nutrients.

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 PRW. Manure spread onto fields 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.

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.

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 PRW. Phosphorus can be bound to these particles which may add to the phosphorus inputs to surface water environments.

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. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and rural areas.

Future Growth:
MPCA outlined its expectations for potential growth in the PRW in Section 4.1.6 of the final TMDL document. MPCA anticipates that the population in the PRW will increase slightly in the coming years as recreational opportunities encourage development near lake areas (e.g., increases in lakeside homes). The wasteload allocation (WLA) and load allocations (LA) for the PRW 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 PRW TMDLs.

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 PRW TMDLs are designated as Class 2 waters for aquatic recreation use (fishing, swimming, boating, etc.) and aquatic life use. 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:
Numeric criteria for TP, chlorophyll-*a*, and Secchi Disk depth are set forth in Minnesota Rules 7050.0222. These three parameters form the MPCA eutrophication standard that must be achieved to attain the aquatic recreation designated use. The numeric eutrophication standards which are applicable to the PRW lake TMDLs are found in Table 4 of this Decision Document.

Table 4: Minnesota Eutrophication Standards for lakes within the Northern Lakes and Forests (NLF) ecoregion – Jail Lake (18-0415-00) and Kego Lake (18-0293-00)

Parameter	NLF Eutrophication Standards
Total Phosphorus (µg/L)	TP < 30
Chlorophyll-a (µg/L)	chl-a < 9
Secchi Depth (m)	SD > 2.0

In developing the lake nutrient standards for Minnesota lakes, MPCA evaluated data from a large cross-section of lakes within each of the State's ecoregions. Clear relationships were established between the causal factor, TP, and the response variables, chl-*a* and SD depth. MPCA anticipates that by meeting the TP concentration (30 µg/L) the response variables (chl-*a* and SD depth) will be attained and the lakes will achieve their designated beneficial uses. For lakes to achieve their designated beneficial use, the lake must not exhibit signs of eutrophication and must allow water-related recreation, fishing and aesthetic enjoyment. MPCA considers 'control of eutrophication' as those conditions where the lake endures minimal nuisance algal blooms and exhibits desirable water clarity.

Phosphorus TMDL criteria: MPCA employed TP criteria of 30 µg/L to address eutrophic conditions in the PRW because of the interrelationships between TP and chl-*a*, and TP and SD depth. Algal abundance is measured by chl-*a*, which is a pigment found in algal cells. As more phosphorus becomes available, algae growth can increase. Increased algae in the water column will decrease water clarity that is measured by SD depth. EPA finds the nutrient targets employed in the PRW lake TMDLs to be reasonable.

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:
MPCA used the U.S. Army Corps of Engineers (USACE) BATHTUB model to calculate the loading capacities for Jail Lake and Kego Lake TMDLs. BATHTUB is a model for lakes and reservoirs (surficial depressions with retention times greater than two weeks) to determine "steady-state water and nutrient mass balances in a spatially segmented hydraulic network". BATHTUB uses empirical relationships to determine "eutrophication-related water quality conditions".[1] The PRW TMDL employed BATHTUB to link observed phosphorus water quality conditions and modeled phosphorus loading to in-lake water quality estimates. BATHTUB can be a steady-state annual or seasonal model that predicts a lake's water quality. BATHTUB utilizes annual or seasonal time-scales which are appropriate because watershed nutrient loads are normally impacted by seasonal conditions.

BATHTUB has built-in statistical calculations which account for data variability and provide a means for estimating confidence in model predictions. BATHTUB employs a mass-balance total phosphorus model that accounts for water and total phosphorus inputs from tributaries, direct watershed runoff, the atmosphere, sources internal to the lake, outputs through the lake outlet, water loss via evaporation, and total phosphorus sedimentation and retention in the lake sediments. BATHTUB allows the user the choice of several different mass-balance total phosphorus models for estimating loading capacity. BATHTUB provides flexibility to tailor model inputs to specific lake morphometry, watershed characteristics and watershed inputs. The BATHTUB model also allows MPCA to assess impacts of changes in nutrient loading from the various sources.

The model equations were originally developed by the USACE from water quality data gathered in over 40 lakes. The model estimates in-lake phosphorus concentration by calculating net phosphorus loss (phosphorus sedimentation) from annual phosphorus loads as a function of inflow to the lake, lake depth, and hydraulic flushing rate. To estimate loading capacity, the Canfield Bachmann subroutine of BATHTUB was iteratively run, reducing current loading to the lake until the modeled result shows that in-lake total phosphorus would meet the applicable WQS.[2]

The loading capacity is the maximum phosphorus load which each of these water bodies can receive over an annual period and still meet the deep lake nutrient WQS. Loading capacities were calculated using the Canfield-Bachmann subroutine and then allocated to the WLA, LA and Margin of Safety (MOS). To simulate the load reductions needed to achieve the WQS, a series of model simulations were performed. Each simulation reduced the total amount of TP entering each of the water bodies during the

[1] BATHTUB Manual - http://www.wwwalker.net/bathtub/help/bathtubWebMain.html
[2] BATHTUB Manual - http://www.wwwalker.net/bathtub/help/bathtubWebMain.html

growing season (or summer season, June 1 through September 30) and computed the anticipated water quality response within the lake. The goal of the modeling simulations was to identify the loading capacity for each lake (i.e., the maximum allowable load to the system, while allowing it to meet WQS) from June 1 to September 30. The modeling simulations focused on reducing the TP to the system.

The time period of June 1 to September 30 was chosen by MPCA as the growing season because it corresponds to the eutrophication criteria, contains the months that the general public typically uses the five lakes for aquatic recreation, and is the time of the year when water quality is likely to be impaired by excessive nutrient loading. Loading capacities were divided by 365 to calculate the daily loading capacities. The daily load reduction targets in the Jail Lake and Kego Lake TMDLs were calculated from the current phosphorus budget for each lake. The budget is an average of several years of monitoring data, and includes both wet and dry years.

TMDL allocations assigned during the summer growing season will protect the PRW lakes during the worst water quality conditions of the year. MPCA assumed that the loading capacities established by the TMDL will be protective of water quality during the remainder of the calendar year (October through May).

Table 5: TMDL for Jail Lake (18-0415-00)

Allocation	Source	Existing TP Load		TMDL		Load Reduction	
		(kg/yr)	*(kg/day)[1]*	*(kg/yr)*	*(kg/day)[1]*	*(kg/yr)*	*(%)*
Wasteload Allocation	Construction Stormwater (MNR100001)	0.50	0.00137	0.50	0.00137	0	0%
	Industrial Stormwater (MNR50000)	0.50	0.00137	0.50	0.00137	0	0%
	WLA Totals	***1.00***	***0.0027***	***1.00***	***0.0027***	**--**	**--**
Load Allocation	Watershed runoff	167.70	0.459	117.1	0.321	50.6	30%
	Failing Septics	0.20	0.001	0.0	0.000	0	100%
	Internal Load	169.00	0.463	10.8	0.030	158.2	94%
	Atmospheric Deposition	20.00	0.055	20.0	0.055	0	0%
	LA Totals	***356.90***	***0.978***	***147.9***	***0.405***	***209.00***	**--**
Margin of Safety (10%)		--	--	16.5	0.045	--	--
Totals		**357.90**	**0.981**	**165.4**	**0.453**	**209.00**	**58%**

1 = Annual loads converted to daily loads by dividing by 365 days per year

Table 6: TMDL for Kego Lake (18-0293-00)

Allocation	Source	Existing TP Load		TMDL		Load Reduction	
		(kg/yr)	*(kg/day)[1]*	*(kg/yr)*	*(kg/day)[1]*	*(kg/yr)*	*(%)*
Wasteload Allocation	Construction Stormwater (MNR100001)	0.60	0.00164	0.60	0.00164	0	0%
	Industrial Stormwater (MNR50000)	0.60	0.00164	0.60	0.00164	0	0%
	WLA Totals	***1.20***	***0.0033***	***1.20***	***0.0033***	**--**	**--**
Load Allocation	Watershed runoff	209.40	0.574	169.5	0.464	39.9	19%
	Failing Septics	0.20	0.001	0.0	0.000	0	100%
	Internal Load	41.90	0.115	20.4	0.056	21.5	51%
	Atmospheric Deposition	32.10	0.088	32.1	0.088	0	0%
	LA Totals	***284***	***0.78***	***222***	***0.608***	***61.60***	**--**
Margin of Safety (10%)		--	--	24.8	0.068	--	--
Total		**284.80**	**0.780**	**248.0**	**0.679**	**61.60**	**22%**

1 = Annual loads converted to daily loads by dividing by 365 days per year

EPA supports the data analysis and modeling approach utilized by MPCA in its calculation of the WLA, LA, MOS and loading capacities for the PRW phosphorus 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 lake TMDLs based on the applicable WQS. MPCA recognized that LAs for each of the individual TMDLs addressed by the PRW TMDLs can be attributed to different nonpoint sources (Tables 5 & 6 of this Decision Document). These nonpoint sources included: watershed contributions from upstream watersheds, internal loading, NPS loading from septic systems and atmospheric deposition. MPCA calculated individual load allocations for each of these potential nonpoint source considerations where appropriate. MPCA estimated nonpoint source loading reductions necessary for Jail Lake and Kego Lake to meet their respective phosphorus TMDL, and found that the targets would require reductions from nonpoint sources to be 19% (for watershed runoff for Kego Lake) to 100% (for NPS loading for septic systems for both Jail Lake and Kego Lake).

MPCA calculated fairly significant reductions from internal loading for both Jail Lake and Kego Lake. MPCA recognizes that its load reduction goals for internal load are aggressive, but these goals are based on the best available information for the PRW TMDLs, and the reduction targets are within the range of

reductions required for other lakes in Minnesota. Once implementation actions are conducted to address both direct watershed loading (e.g., acquisition of land for conservation easements, shoreline buffer installation, addressing failing septics in the direct watershed) and internal loads (e.g., alum treatment or aeration) and additional water quality monitoring is completed to assess the progress, MPCA and local partners plan to revisit the reduction goals of the PRW phosphorus TMDLs. Through this adaptive management approach, MPCA and local partners will be able to decide whether further implementation actions are needed or if MPCA should consider a site-specific water quality standard.

EPA finds MPCA's approach for calculating the LA 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 calculated a portion of the WLA and assigned it to construction and industrial stormwater. For MPCA's calculation for the construction stormwater, the WLA was based on areal coverage of construction permits from January 1, 2007, to October 6, 2012 (Table 4-3 of the final TMDL document). These values were then area weighted based on area of the PRW within each county. The resulting area weighted percentage was then multiplied by a 'watershed runoff load component', which MPCA defined as the total TMDL (loading capacity) minus the sum of the non-watershed runoff load components (e.g., atmospheric load, internal load, upstream lakes, and MOS) (Section 4.1.3.1 of the final TMDL document). MPCA set the industrial stormwater WLA equal to the construction stormwater WLA.

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 best management practices (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 MPCA is responsible for overseeing industrial stormwater loads which impact water quality to lakes in the PRW. Industrial sites within these lake subwatersheds are expected to comply with the requirements of the State's NPDES/SDS Industrial Stormwater Multi-Sector General Permit (MNR50000) or NPDES/SDS General Permit for Construction Sand & Gravel, Rock Quarrying and Hot Mix Asphalt Production facilities (MNG490000). MPCA explained that if a facility owner/operator obtains coverage under the appropriate NPDES/SDS General Stormwater Permit and properly selects, installs and maintains all BMPs required under the 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 MNR50000 and MNG490000.

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 PRW TP 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, MNR50000 and MNG490000.

EPA finds the MPCA's approach for calculating the WLA for the PRW phosphorus 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 phosphorus TMDLs. The TMDLs employed an explicit MOS set at 10% of the loading capacity. The explicit MOS was applied by reserving 10% of the total loading capacity, and then allocating the remaining loads to point and nonpoint sources (Tables 5 & 6 of this Decision Document). MPCA explained that the explicit MOS was set at 10% due to the following factors:

- Environmental variability in pollutant loading;
- Variability in water quality data (i.e., collected water quality monitoring data); and
- The agreement between water quality models' predicted and observed values and confidence in the Canfield Bachmann subroutine.

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 PRW phosphorus TMDLs as described in Section 4.1.5 of the final TMDL document. Nutrient water quality criteria (i.e., TP < 30 µg/L, chl-a < 9 µg/L and Secchi Depth > 2.0 m) employed to set TMDL end goals for the Jail Lake and Kego Lake phosphorus TMDLs were based on the average nutrient values collected during the growing season (June 1 to September 30) and were calculated to meet the NLF 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 PRW phosphorus 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 summer time period is typically when eutrophication standards are exceeded and water quality within the PRW 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 PRW phosphorus TMDLs provide reasonable assurance that actions identified in the implementation section of the final TMDL (i.e., Section 5 of the final TMDL document), will be applied to attain the loading capacities and allocations calculated for the impaired reaches within the PRW. 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 PRW. Implementation practices will be implemented over the next several years. The following groups are expected to work closely with one another to ensure that pollutant reduction efforts, via BMPs, are being implemented within the PRW: the Pine River Watershed Alliance (PRWA), the Aitkin, Cass, Crow Wing and Hubbard Soil and Water Conservation Districts (SWCDs), Minnesota Department of Natural Resources (DNR), Natural Resource Conservation Service (NRCS), National Park Service (NPS) and U.S. Fish and Wildlife Service. It is anticipated that staff from the local SWCDs, local Minnesota Board of Soil and Water Resources (BWSR) offices, and other local watershed groups (e.g., the PRWA), will work together to reduce pollutant inputs to the PRW.

MPCA has authored a Pine River WRAPS document (draft April 2017) 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.[3]

[3] Pine River WRAPS document (draft April 2017).

The PRWA is a committed local group in the PRW which aims to take action to improve water quality in the watershed and bring local water issues to the forefront of discussions at the local government and community levels. The PRWA has ongoing programming which encourages local farmers to raise livestock (beef) in an environmentally responsible manner, advocates greater incorporation of sustainable farming practices and encourages riparian restoration of native plant communities. EPA acknowledges that there is significant local interest in preserving and restoring water quality in the PRW via efforts of the PRWA, lake associations and local SWCDs.

Reasonable assurance that the WLA set forth will be implemented is provided by regulatory actions. According to 40 CFR 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 some of 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 VRW 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 (MNR50000) 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 Watershed Restoration and Protection Strategies (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 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:
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 BMPs 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 final TMDL document outlines the water monitoring efforts in the Pine River watershed. 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., members of the PRWA or via citizen monitoring efforts coordinated with the Crow Wing SWCD or the Cass SWCD) as long as there is sufficient funding to support the efforts of these local entities. Additionally, volunteers may be relied on to complete monitoring in the lakes discussed within this TMDL. At a minimum, the PRW 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 PRW. 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 PRW.

Lake Monitoring:
The lakes of the PRW have all been periodically monitored by volunteers and staff over the years. Monitoring for some of these locations is planned for the future in order to keep a record of the changing water quality as funding allows. Lakes are generally monitored for TP, chl-a, and Secchi disk transparency. MPCA expects that in-lake monitoring will continue as implementation activities are

installed across the watersheds. These monitoring activities should continue until water quality goals are met. Some tributary monitoring has been completed on the inlets to the lakes and may be important to continue as implementation activities take place throughout the subwatersheds.

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 PRW TMDLs will be used to inform the selection of implementation activities as part of the Pine River 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 implementation strategies in Section 7 of the final TMDL document. MPCA outlined the importance of prioritizing areas within the PRW, education and outreach efforts with local partners, and partnering with local stakeholders to improve water quality within the watershed. Reduction goals for the phosphorus TMDLs may be met via components of the following strategies:

Internal Loading Reduction Strategies: Internal nutrient loads may be addressed to meet the TMDL allocations outlined in the PRW phosphorus TMDLs. MPCA recommends that before any strategy is put into action, an intensive technical review, to evaluate the costs and feasibility of internal load reduction options be completed. Several options will be considered to manage internal load inputs to each of the water bodies addressed in this TMDL.

- *Management of fish populations:* Monitor and manage fish populations to maintain healthy game fish populations and reduce rough fish (i.e. carp, bullheads, fathead minnows) populations.
- *Vegetation management:* Improved management of in-lake vegetation in order to limit phosphorus loading and to increase water clarity. Controlling the vitality of curly-leaf pondweeds via chemical treatments (herbicide applications) will reduce one of the significant sources of internal loading, the senescence of curly-leaf plants in the summer months.
- *Chemical treatment:* The addition of chemical reactants (ex. aluminum sulfate) to lakes of the PRW in order for those reactants to permanently bind phosphorus into the lake bottom sediments. This effort could decrease phosphorus releases from sediment into the lake water column during anoxic conditions.

Septic Field Maintenance: Septic systems are believed to be a source of nutrients to waters in the PRW. 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 on lakeshore properties or those 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 PRW.

Urban/Residential Nutrient Reduction Strategies: These strategies involve reducing stormwater runoff from lakeshore homes and other residences within the PRW. These practices would include; rain gardens, lawn fertilizer reduction, lake shore buffer strips, vegetation management and replacement of failing septic systems. Water quality educational programs could also be utilized to inform the general public on nutrient reduction efforts and their impact on water quality.

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.

Municipal activities: Municipal programs, such as street sweeping, can also aid in the reduction of nutrients to surface water bodies within the PRW. Municipal partners can team with local watershed groups or water district partners to assess how best to utilize their monetary resources for installing new stormwater BMPs (ex. vegetated swales) or retro-fitting existing stormwater BMPs.

Public Education Efforts: Public programs will be developed to provide guidance to the general public on nutrient reduction efforts and their impact on water quality. These educational efforts could also be used to inform the general public on what they can do to protect the overall health of lakes in the PRW.

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 8 of the final TMDL document. Throughout the development of the PRW 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 formed a steering committee to discuss goals of the TMDL, to strategize on approaches toward reducing pollutant inputs to waters in the PRW and to consider ongoing and future implementation efforts in the PRW. A full description of civic engagement activities associated with the TMDL process is available within in the PRW WRAPS report.

MPCA posted the draft TMDL online at (https://www.pca.state.mn.us/water/total-maximum-daily-load-tmdl-projects) for a public comment period. The 30-day public comment period was started on April 10, 2017 and ended on May 10, 2017. MPCA received four public comments on the PRW TMDL and PRW WRAPS documents during the public comment period. Two of the four public comments focused on the PRW WRAPS document (i.e., Commenter Raber and Commenter Brinks). Two commenters had questions on the PRW TMDLs (Commenter Peterson and Commenter Larson).

Heidi Peterson of the Minnesota Department of Agriculture (MDA) submitted comments on the TMDL and requested that MPCA clarify information within the draft TMDL related to updating land use information in Section 3.3 of the TMDL document, updating animal/wildlife count information in Table 3-5 and adding information about MDA's Cropland Grazing Exchange Program to the Technical Assistance sub-section of the Implementation discussion (Section 7 of the TMDL document). MPCA agreed with all of the comments submitted and updated the final TMDL document appropriately.

Loren Larson from Plymouth, Minnesota submitted comments to MPCA on the draft PRW TMDL. Mr. Larson's comments highlighted concerns that the TMDL document did not include the correct watershed boundaries, did not include properly account for all potentially sources which may be contributing nutrients to Jail Lake and Kego Lake, underestimated land uses which may contribute nutrient inputs to the lakes and did not fully capture all of the available water quality data available for TMDL development. Additionally, Mr. Larson communicated that he did not believe that MPCA offered opportunity for the general public to participate in the TMDL development process. MPCA acknowledged and answered all of Mr. Larson's concerns and revised the final PRW TMDL appropriately.

EPA believes that MPCA adequately addressed the comments from MDA and Mr. Larson and updated the final TMDL appropriately. MPCA submitted MDA's public comment and its response in the final TMDL submittal packet received by the EPA on October 18, 2017.

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 Pine River watershed TMDL document, submittal letter and accompanying documentation from MPCA October 18, 2017. 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 Pine River watershed TMDLs by MPCA satisfies the requirements of this twelfth element.

13. Conclusion

After a full and complete review, the EPA finds that the 2 nutrient (TP) TMDLs satisfy all elements for approvable TMDLs. This TMDL approval is for **two TMDLs**, addressing two different segments for aquatic recreational 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.