



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

REPLY TO ATTENTION OF

WW-15J

June 29, 2022

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 (TMDL) for segments within the Duluth Area Beaches (DAB) study area, including supporting documentation. The DAB TMDLs address impaired Duluth area beach waters in St. Louis and Carlton Counties in northeastern Minnesota and includes portions of the St. Louis River watershed, the Lake Superior South watershed, and developed areas near Duluth. The DAB TMDLs address impaired aquatic recreation use due to excessive bacteria.

The DAB 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 five (5) bacteria 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 we look forward to future TMDL submissions by the State of Minnesota. If you have any questions, please contact Ms. Christine Urban, at 312-886-3493 or urban.christine@epa.gov.

Sincerely,

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Date: 2022.06.29
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Tera L. Fong
Division Director, Water Division

Cc: Lindsey Krumrie, MPCA

wq-iw10-15g

DECISION DOCUMENT FOR THE APPROVAL OF THE DULUTH AREA BEACHES, MINNESOTA TMDL

Section 303(d) of the Clean Water Act (CWA) and EPA’s implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable TMDLs. Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb “must” below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term “should” below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable. These TMDL review guidelines are not themselves regulations. They are an attempt to summarize and provide guidance regarding currently effective statutory and regulatory requirements relating to TMDLs. Any differences between these guidelines and EPA’s TMDL regulations should be resolved in favor of the regulations themselves.

1. Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the waterbody as it appears on the State’s/Tribe’s 303(d) list. The waterbody should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the waterbody and specify the link between the pollutant of concern and the water quality standard (see section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the NPDES permits within the waterbody. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA’s review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

- (1) the spatial extent of the watershed in which the impaired waterbody is located;
- (2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
- (3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
- (4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment

facility); and
(5) an explanation and analytical basis for expressing the TMDL through *surrogate measures*, if applicable. *Surrogate measures* are parameters such as percent fines and turbidity for sediment impairments; chlorophyll-a and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:

Location Description/Spatial Extent

The Duluth Area Beaches (DAB) TMDLs were submitted by the Minnesota Pollution Control Agency (MPCA) and address five Duluth urban area beaches in northeastern Minnesota impaired by *E. coli*. Table 1 in this Decision Document lists the five Duluth area beaches addressed in the TMDL and the initial year they appeared on Minnesota's Section 303(d) list (Section 1.2 of the final TMDL document). The beaches in the DAB TMDL are on Minnesota's 2022 303(d) list for recreational use impairments due to due to high concentrations of *E. coli* bacteria. They are also part of the Beach Closings and Body Contact Restrictions Beneficial Use Impairment (BUI #7) within the St. Louis River Area of Concern (AOC).

The 5 five *E. coli* impaired beaches addressed in the DAB TMDL report are located within the St. Louis River Watershed (Hydrologic Unit Code [HUC] 04010201) and the Lake Superior South Watershed (HUC 04010102) (Table 1 of this Decision Document). The impaired beaches located within the St. Louis River Area of Concern (AOC) are designated under the United States and Canada Great Lakes Water Quality Agreement in 1987. The MPCA applied the CWA's Coastal Waters definition as well as the Federal Beaches Environmental Assessment and Coastal Health (BEACH) Act water quality standards to all bacteria monitoring sites on the Lake Superior shoreline and in the mouths of tributaries that are representative of shoreline/Lake Superior conditions (Section 2.3 of the final TMDL document).

The Fond du Lac dam divides two St. Louis River assessment units and is the upstream boundary for the TMDL. In 2021 the St. Louis River area above the dam was assessed as not impaired due to *E. coli*. Detailed information for boundary conditions is found in Section 4.1.4 of the final TMDL document.

Minnesota describes all the beaches as located within the larger Duluth Urban Area Watershed (DUAW). A TMDL was previously approved for *E. coli* and total suspended solids DUAW by EPA Region 5 on November 11, 2020. Additional details about relationship of the DUAW and the DAB are provided in the surrogate flows discussion in Section 3.3 of the final TMDL document.

Table 1. Duluth Area Impaired Beach TMDLs Addressed and 303(d) Listing Year

Major Watershed	Waterbody Name	AUID	Nearby Tributary	Listing Year
Lake Superior – South	Leif Erikson Beach	04010102-C21	Chester Creek	2014
St. Louis River	Minnesota Point 15th Street Harbor Side Beach	04010201-A90	Harbor	2014
St. Louis River	Park Point 20th Street/ Hearing Island Canal Beach	04010201-A89	Harbor	2014
St. Louis River	Park Point Sky Harbor Parking Lot Beach	04010201-A87	Harbor	2016
St. Louis River	Boy Scout Landing Beach	04010201-A92	Sargent Creek	2020

Beach Delineations and Drainage Areas

In Section 3.1 of the final TMDL document, Minnesota describes how the beach areas and drainage areas for the TMDL were delineated. Direct drainage areas were determined by geographical delineated beaches using beach start and end points provided by the MPCA field staff and coastline feature lines from the National Hydrography Dataset. The MPCA field staff used public property, public access, specific beach characteristics, and best professional judgement to define the beach start and end points. Beach characterization was based on in-field observations, results of beach surveys conducted by the South St. Louis Soil and Water Conservation District (SSLSWCD) in 2019 and 2020, and Core Team input during the TMDL development process. With the exception of Leif Erickson Park Beach, direct drainage areas to each of the beaches were delineated based on topographic data and field observations and include the drainage area from the land surface only. The drainage area to Leif Erickson Park Beach was delineated from City of Duluth storm sewer data and includes the drainage area to Chester Creek and nearby storm sewer outfalls.

Land Use

In Section 3.2 of the final TMDL document, MPCA describes historical land use in the Duluth area as being dominated by hardwood and evergreen forests as well as significant areas of marsh and wetland. Development has increased in the area. Table 2 of this Decision Document shows current land use in the direct drainage area for Park Point and Boy Scout Landing impaired beaches. Air photos were used by MPCA to interpret and differentiate the areas. The entire Sargent Creek Watershed drains to Boy Scout Landing Beach and a portion of the City of Duluth is contributing to Leif Erickson Park Beach; land cover and land use data for those two beaches were determined using land cover/land use data and are provided in Table 3 of this Decision Document.

Table 2. Land use in the Park Point and Boy Scout Landing impaired beach drainage areas.

Water body name (AUID)	Beach drainage area (acres)	Percent of watershed (%)			
		Green space/park	Residential	Road	Other Impervious parking lot, paved walkways)
Minnesota Point 15th Street Harbor Side Beach (04010201-A90)	12.88	68	21	4	7
Park Point 20th Street/Hearing Island Canal Beach (04010201-A89)	0.19	93	0	0	7
Park Point Sky Harbor Parking Lot Beach (04010201A87)	10.53	81	0	19	0
Boy Scout Landing (04010201-A92)	0.12 ^a	50	0	0	50

a. Beach drainage area does not include subwatershed of Sargent Creek (see Table 3).

Table 3. Land cover/land use in Sargent Creek Watershed and Leif Erikson Park Beach drainage area.

Land cover/land use	Percent of area (%)	
	Sargent Creek	Leif Erikson Park
Forested	82	41
Wetlands	4	2
Managed/Natural Grass	3	1
Lakes/Ponds/Rivers	0	11
Hay and Pasture	1	2
0 – 25% Impervious	1	19
26 – 50% Impervious	3	13
51 – 75% Impervious	3	7
76 – 100% Impervious	3	4
Total watershed area	1,964 acres	6,141 acres

Pollutant of Concern

The pollutant of concern for the DAB TMDLs is *E. coli*. The impairments caused by bacteria are found on the Clean Water Act Section 303(d) list of impaired water bodies as listed in Table 1 of this in this Decision Document. The DAB TMDL contains a total of 5 *E. coli* TMDLs addressing bacteria impairments.

Problem Identification

In Section 3.3 of the final TMDL document, MPCA assessed five beaches in the Duluth area identified as impaired by *E. coli* in the DAB TMDL report. MPCA identified both point and nonpoint sources as contributing to the impairment at the beaches.

Point Sources: MPCA discussed permitted sources in Section 3.6.1 of the TMDL.

National Pollutant Discharge Elimination Systems (NPDES) permitted facilities: NPDES permitted facilities may contribute bacteria loads to surface waters through discharges of treated wastewater. Permitted facilities must discharge wastewater according to their NPDES permit. MPCA identified the Western Lake Superior Sanitary District (WLSSD) as a potential source of bacteria in the watershed (Section 3.6.1 of the final TMDL document). The WLSSD wastewater treatment facility is a large (average wet weather design flow of 48.4 million gallons per day (MGD)) regional facility that provides wastewater and solid waste services and oversight for the region around Duluth, Minnesota that includes the City of Duluth and several surrounding cities (Figure 37 in the final TMDL document). WLSSD’s regional system and the facilities connected to it eventually discharge to the Duluth-Superior Harbor.

Municipal Separate Storm Sewer Systems (MS4s): MS4s are defined as the conveyance systems owned or operated by an entity such as a state, city, township, county, district, or other public body having jurisdiction over management of stormwater. Stormwater from MS4s can transport bacteria to surface water bodies during or shortly after storm events. MPCA identified ten MS4 permittees which were assigned a portion of the WLA for the bacteria TMDLs (Figures 38-39 and Section 3.6.1.2 of the final TMDL document; Table 4 of this Decision Document).

Table 4. Regulated MS4s in the TMDL area

Regulated MS4	Beach name (AUID)				
	Leif Erikson Park Beach (04010201-C21)	Minnesota Point 15th Street Harbor Side Beach (04010201-A90)	Park Point 20th Street/Hearing Island Canal Beach (04010201-A89)	Park Point Sky Harbor Parking Lot Beach (04010201-A87)	Boy Scout Landing Beach (04010201-A92)
Duluth City (MS400086)	✓	✓	✓	✓	✓
Hermantown (MS400093)		✓	✓	✓	
Midway Township 6 (MS400146)		✓	✓	✓	✓
Proctor 6 (MS400114)		✓	✓	✓	
Thomson Township (MS400280)		✓	✓	✓	✓
Rice Lake 6 (MS400151)	✓				

University of Minnesota Duluth (MS400214)	✓	✓	✓	✓	
Lake Superior College (MS400225)		✓	✓	✓	
St. Louis County (MS400158)	✓	✓	✓	✓	
MnDOT* Outstate District (MS400180)	✓	✓	✓	✓	✓

* MnDOT – Minnesota Department of Transportation

Sanitary Sewer Overflows (SSOs): Properly designed, operated, and maintained sanitary sewer systems collect and transport the sewage that flows into them to a publicly owned treatment works. SSOs are releases of untreated sewage into the environment and are illegal under the Clean Water Act.

MPCA noted in Section 3.6.2 of the final TMDL document that Duluth has had SSO discharges along Park Point intermittently during late fall from 2017 to 2019. These overflows were typically a result of high winds that push lake water into the sanitary sewer system, causing pressurized conditions. Record high and near record high lake water levels in recent years also potentially contributed to sanitary sewer overflows. These sanitary sewer overflows are actively being addressed by the City of Duluth and no overflows occurred during 2020.

Nonpoint Sources

As shown in Figures 38 and 39 of the TMDL, the TMDL watershed is essentially covered by MS4 areas. However, the collection systems for the MS4 do not extend completely throughout the TMDL watershed. Therefore, there are some sources that are not discharged through a MS4 system.

Septic Systems: Although the majority of the drainage areas to impaired beaches are urbanized and wastewater is treated by a regional treatment plant, septic systems can still be found in the less developed areas, and also within the developed portions where homes are not connected to regional sewer services. Septic systems that function properly do not contribute *E. coli* to surface waters. Failing septic systems that discharge untreated sewage to the land surface are considered an imminent public health threat and can contribute *E. coli* to surface waters. There are no data on the number of septic systems within the impaired beach drainage areas or their failure rate. However, clay soils, shallow depth to bedrock, and high groundwater levels found in the City of Duluth and surrounding areas can increase the likelihood of failing septic systems. MPCA also noted that some of the beaches have portable restrooms.

Unregulated Stormwater runoff: Stormwater runoff that is not part of the MS4 collection system can transport *E. coli* from multiple sources to surface waters. Impervious surfaces such as roads and parking lots can directly connect the drainage areas for impaired beaches to surface waters.

Wildlife and Pets: MPCA identified wildlife and pets as sources of bacteria in the TMDL watershed (Section 3.6.4 of the final TMDL document). Gulls, geese, ducks, raccoons, and other wildlife are often present on the beaches, and can contribute bacteria. Pets such as dogs are also common in the beach areas. Pet waste can contribute bacteria to the beaches if not properly disposed of.

Priority Ranking: As explained in Section 1.5 of the final TMDL document, the TMDLs are prioritized to align with the watershed approach and the state’s 10-year cycle for completing a Watershed Restoration and Protection Strategy (WRAPS). The MPCA developed Minnesota’s TMDL Priority Framework Report, describing how Minnesota would meet EPA’s national measures under EPA’s Long-Term Vision for Assessment, Restoration, and Protection under the CWA Section 303(d) Program. The MPCA schedule for TMDL completions is contained in Minnesota’s Section 303(d) impaired waters list, and reflects water quality impaired segments that Minnesota commits to addressing with TMDLs by 2022.

Future growth: MPCA considered future growth from new or expanding permitted MS4 WLA transfer process and new or expanding wastewater dischargers in Section 5.1 and 5.2 of the final TMDL Document. As shown in Figure 39 of the final TMDL document, much of the watershed is already urbanized, and therefore the overall land use is unlikely to change. The WLA and load allocations (LA) for the DAB 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 DAB TMDLs.

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

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy. (40 C.F.R. §130.7(c)(1)). EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

Comment:

Designated Use:

Typically, waters in the State of Minnesota are subject to the requirements of the Minnesota water quality rules (Minn. R. ch. 7052). However, these beaches are located on Lake Superior, and thus subject to the requirements of the Federal Beaches Environmental Assessment and Coastal Health (BEACH) Act (Section 2.3 of the final TMDL document). Routine beach monitoring to quantify *E. coli* bacteria levels is conducted by the Minnesota Department of Health (MDH) and partners at various locations in the Lake Superior basin to assess water quality. These waters are protected for the aquatic recreation use.

Numeric Criteria:

The *E. coli* numeric standard is applied during Minnesota’s aquatic recreation season (April 1 through October 31). The applicable *E. coli* numeric criteria and target concentration for these TMDLs are noted in Table 5 below:

Table 5: Bacteria Water Quality Standards Applicable to the DAB TMDLs

Parameter	Units	Water Quality Standard
<i>E. coli</i> ¹	# of organisms / 100 mL	The geometric mean of a minimum of 5 samples taken within any calendar month may not exceed 126 organisms
		No more than 10% of all samples collected during any calendar month may individually exceed 235 organisms

¹ = Standards apply only between April 1 and October 31

Bacteria TMDL Targets: The bacteria TMDL targets employed for the DAB bacteria TMDLs are the *E. coli* standards as stated in Table 5 of this Decision Document. The focus of the DAB TMDL is on the 126 organisms (orgs) per 100 mL (126 orgs/100 mL) geometric mean portion of the standard. MPCA believes that using the 126 orgs/100 mL portion of the standard for TMDL calculations will result in the greatest bacteria reductions within the DAB and will result in the attainment of the 235 orgs/100 mL portion of the standard. While the bacteria TMDLs will focus on the geometric mean portion of the water quality standard, attainment of both parts of the water quality standard is required.

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

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a waterbody for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. §130.2(f)).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. §130.2(i)). If the TMDL is expressed in terms other than a daily load, e.g., an annual load, the submittal should explain why it is appropriate to express the TMDL in the unit

of measurement chosen. The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for stream flow, loading, and water quality parameters as part of the analysis of loading capacity. (40 C.F.R. §130.7(c)(1)). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

Comment:

E. coli TMDL Approach:

MPCA determined that a concentration-based TMDL would be most appropriate for the DAB TMDLs (Section 4.1 of the final TMDL document). Typically, load calculations require a concentration multiplied by a flow or volume of water. Since these TMDLs address beaches on a lake, flow or volume are difficult to determine, as lake levels change, and internal flows vary. Therefore, MPCA applied the *E. coli* WQS as the TMDL loading capacity. MPCA's concentration-based TMDL approach develops DAB *E. coli* TMDLs at beaches where no flow or water volume data are available to calculate loads for the five impaired beaches (Section 4.1 of the TMDL). In concentration-based TMDLs, the loading capacity and all of the allocations are concentrations. The loading capacity for *E. coli* is based on the monthly geometric mean standard (**126 org/100 mL**). MPCA assumed that practices that are implemented to meet the geometric mean standard will also address the individual sample standard (235 org/100 mL). MPCA noted that while the focus is on the geometric mean portion of the WQS, attainment of both parts of the water quality standard is required.

Assessment:

TMDLs can be expressed in various ways, including in terms of toxicity, which is a characteristic of one or more pollutants, or by some "other appropriate measure" (40 C.F.R. §130.2(i)). The loading capacities as defined in the TMDL are set at levels which assure WQS will be met (criteria at point of discharge). The loading capacity is based on the water quality criteria for each waterbody. If all sources of pathogens are at or below the water quality criteria, then it follows that the receiving water will meet the water quality standards. Attainment of the concentration-based loading capacity will achieve water quality criteria for both dry and wet weather and for all storm events whenever they occur (i.e., on any given day). Estimated loading capacity percent reductions needed to reach the water quality target for each watershed are provided in the TMDL summaries in Appendix 1 of this Decision Document. The EPA is neither approving nor disapproving the percent reductions.

EPA's November 15, 2006 guidance entitled "Establishing TMDL 'Daily' Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA, *et al.*, No.05-5015, (April 25, 2006) and Implications for NPDES Permits," recommends that TMDL submittals express allocations in terms of daily time increments. MPCA expresses loading capacity targets on a daily basis. The water quality targets apply on any given day whenever the water quality standards are in effect.

In summary, the targets are directly linked to Minnesota's water quality standards' bacteria criteria to achieve the designated uses of the waterbodies. In addition, EPA concludes that the loading capacity targets address critical conditions and are consistent with EPA guidance on the daily time increment.

Summary tables for the five beaches in the DAB TMDL study area are provided in Appendix 1 of this Decision Document.

Additional Data:

MPCA used *E. coli* concentration monitoring data from 2009 through 2018 to develop the TMDL and to assess flow duration intervals to identify priority sources to support the TMDL source assessments and implementation (Section 3.3 of the final TMDL document). Data collected after 2018 was considered as part of the source assessment only. Microbial Source Tracking (MST) data were not used to develop TMDLs or allocations.

Boundary Conditions:

Boundary conditions are provided for each impaired beach TMDL (Figure 39 of the final TMDL document) to account for upstream sources of *E. coli* that are not explicitly addressed in the TMDL. Waters flowing across the boundaries are considered to be meeting WQS, and therefore the TMDLs only address the loadings controlled by Minnesota. Boundary conditions were developed using the TMDL target concentration. Two boundary conditions include: the St. Louis River at the Fond du Lac dam which is an upstream boundary condition accounting for *E. coli* sources in the St. Louis River upstream of the dam; and State of Wisconsin; this state line boundary condition accounts for all *E. coli* sources in Wisconsin that drain to the St. Louis River and Estuary and the Duluth-Superior Harbor. MPCA noted that the St. Louis River upstream of the Fond du Lac Dam has been assessed and is meeting the appropriate WQS (Section 4.1.4 of the final TMDL document). Figure 40 of the final TMDL document shows the portions of the watershed under Minnesota jurisdiction.

Critical Conditions: MPCA stated that in concentration based TMDLs, the loading capacity equals the standard. Seasonal variations and critical conditions occur during the months that the uses of the waterbody are most likely to result in opportunities and pathways for exposure, and result in a risk to public health, which coincide with the season when the water quality standard applies (April 1 through October 31). Critical conditions occur as recreation at the beaches increases during the warmer months, especially from Memorial Day through Labor Day. Additionally, extremes in precipitation (low to high) result in summer storm high flows and lower flow dry conditions, especially in urbanized areas. Pathogens from the watershed are transported to the beaches and pathogens can persist in stagnant waters (Section 4.1.8 of the TMDL).

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

4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

Comment:

The LA is allocated to existing or future nonpermitted pollutant sources (Section 4.1.5. of the final TMDL document). The LAs are concentration-based and like the loading capacity, the LA is equal to the water quality standard (i.e., geometric mean standard (126 org/100 mL)). MPCA assumes that practices that are implemented to meet the geometric mean standard will also address the individual sample standard (235 org/100 mL). The non-permitted pollutant sources vary for each impaired beach TMDL. The loading capacity is provided in the TMDL summary tables for each impaired beach in Appendix 1 in this Decision Document. Contributing drainage areas for each beach are discussed in Section 3.1 of the final TMDL document and summarized by MPCA:

- **Leif Erikson Park Beach:** The impairments are derived from local sources within the direct drainage to the beach, storm sewer-sheds along the northshore east and west of the impaired beach, and the Chester Creek Watershed. The source assessment did not support the contributions of loading from the St. Louis River and Nemadji River Watersheds and Lake Superior contributing to impairment at Leif Erikson Park Beach.
- **Boy Scout Landing Beach:** The impairments are derived from sources within the direct drainage to the beach, the Sargent Creek Watershed, and the St. Louis River Watershed between the Fond du Lac Dam and the impaired beach. Sources within Wisconsin are accounted for by the state border boundary condition (the boundary sources are set at the standard concentration as the condition for Wisconsin with Wisconsin sources to achieve at the boundary). Sources in the Nemadji River Watershed or Duluth-Superior Harbor are not expected to contribute to the impairment at Boy Scout Landing Beach.
- **Park Point Beaches (3 beaches):** The impairments are derived from sources within the direct drainage to each beach, the St. Louis River Watershed downstream of Fond du Lac Dam, the Duluth-Superior Harbor, and the Nemadji River Watershed. Sources within Wisconsin are accounted for by the state border boundary condition.

For all impairments addressed in this study, natural background sources are implicitly included by MPCA in the LA portion of the TMDL. TMDL reductions focus on the major anthropogenic sources identified in the source assessment.

EPA finds MPCA's approach for calculating the LA to be reasonable and consistent with EPA guidance. EPA finds that the TMDL document submitted by MPCA satisfies all requirements concerning this fourth element.

5. Wasteload Allocations (WLAs)

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

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

Comment:

WLAs based on Minnesota's *E. coli* concentration-based TMDL approach and can be found in the TMDL Summary Tables in Appendix 1 of the TMDL.

Wastewater Treatment Facilities: MPCA determined that a WLA are required for the WLSSD. For WLSSD, the WLA is the WQS of 126 org/100 mL (geometric mean) and 235 orgs/100mL (not-to-exceed). As noted in Section 1 of this Decision Document, WLSSD is required to disinfect their wastewater during the summer recreational season.

MS4s: MPCA identified 10 regulated MS4s that receive WLAs in the DAB TMDL area (Table 4 of this Decision Document). All or portions of the 10 are in the watersheds draining to the St. Louis River and Estuary downstream of the Fond du Lac dam, Nemadji River (in Minnesota), and Duluth-Superior Harbor. The remaining MS4s receiving WLAs are permitted point sources are in the direct drainage subwatersheds of the impaired Beaches. For Boy Scout Landing and the Park Point impaired beaches, MS4 permittees were assigned a WLA if they had regulated

area within (1) the subwatershed draining to the impaired beach, or (2) an upstream subwatershed within the study area (Section 4.1.6 of the final TMDL document). Permittees were assigned a WLA for Leif Erickson Beach if they had regulated area within the Chester Creek Watershed. The MS4 regulated area for Proctor, Rice Lake, and Midway Township is totally within urban and platted areas within their jurisdictions. The MS4 regulated area for St. Louis County and MnDOT is road right of way within the Census defined urban area. The MS4 wasteload allocation in each impaired watershed is presented in the TMDL Summary Tables in Appendix 1 of this TMDL Decision Document.

As the TMDLs are concentration-based, the WLA is equal to the water quality standard (i.e., geometric mean standard concentration (126 org/100 mL). It is assumed by MPCA that practices that are implemented to meet the geometric mean standard will also address the individual sample standard maximum (235 org/100 mL).

Other sources: MPCA did not identify any Concentrated Animal Feeding Operations (CAFOs) in the TMDL area. MPCA explained that permitted construction and industrial stormwater sources are not expected to be sources of *E. coli* and did not receive WLAs (Section 4.1.6 of the final TMDL document).

EPA finds MPCA's approach for calculating the WLA to be reasonable and consistent with EPA guidance. EPA finds that the TMDL document submitted by MPCA satisfies all requirements concerning this fifth element.

6. Margin of Safety (MOS)

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

Comment:

MPCA provided an implicit MOS in the DAB TMDLs for *E. coli*. The TMDLs did not account for the die-off of pathogens during their transport from sources (for example, regulated treatment plants, MS4s and domestic or wild animal waste sites) that are located near or upstream of the impaired beaches. Following precipitation events, pathogens from these and other sources can be transported by overland flow and runoff to area waterways eventually reaching TMDL study area beaches. Pathogen die-off during transit from sources to impaired beaches due to a number of factors including, but are not limited to, increased microorganism predation of pathogens, low turbidity (high light penetration into the stream), salinity, nutrient deficiencies, and cold water

temperatures.¹ Generally, die off increases as the bacteria travels further from sources of impairments.

MPCA also described its approach to developing the WLA and LA targets. Minnesota applied the *E. coli* standard concentrations as the targets for the WLA and LA and as daily maximums, as a more conservative approach than to simply apply the State's WQS of concentration of 126 orgs/100 mL as a 30-day geometric mean, and the 235 orgs/100 mL in 90% of samples (for the April-October recreational season). This is a more conservative approach than to simply apply the State's numeric water quality standard concentration because this value must be met at all times under all environmental conditions.

EPA finds MPCA's approach for calculating the MOS to be reasonable and consistent with EPA guidance. EPA finds that the TMDL document submitted by MPCA satisfies all requirements concerning this sixth element.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).

Comment:

Minnesota discusses seasonal variation along with critical conditions in Section 4.1.8 of the final TMDL document. In concentration-based TMDLs, the loading capacity equals the WQS concentration which applies generally during the ice-out season April 1 through October 31. Recreation at beaches typically occurs during warmer months, when people are more likely to be exposed in the water from Memorial Day through Labor Day. Summer storms, lower flow conditions, transport of pathogens from watershed beaches and pathogens productivity and survival during this season are all examples of how seasonal variation is accounted for in the TMDL

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

8. Reasonable Assurance

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

¹ EPA's Protocol for Developing Pathogen TMDLs (EPA 841-R-00-002)

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 DAB TMDLs for *E. coli* 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 DAB watershed. 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 states in Section 6 of the final TMDL document that many factors add to the reasonable assurance that the TMDL reductions will occur. There are restoration efforts led by the SLSWCD, counties, state agencies, local communities and residents, watershed groups such as the Regional Stormwater Protection Team, Lake Superior Streams, the Weber Stream Restoration Initiative, the Minnesota Sea Grant, the Natural Resources Research Institute and the University of Minnesota-Duluth.

The MPCA's NPDES permit program and its stormwater program are regulatory activities providing reasonable assurance that implementation activities are initiated, maintained, and consistent with WLAs assigned in this study.

WWTF: The WLSSD wastewater treatment facility is the only individually permitted source in the project area that is discharging *E. coli*. WLSSD's permit limit contains a limit equal to the water quality standard. A WLA is assigned to the WLSSD in conformance with this TMDL.

In addition, the City of Duluth has proposed to conduct a comprehensive evaluation of sanitary sewer infrastructure within the impaired reaches of Chester Creek and in locations of past sanitary sewer overflows. If additional sanitary sewer overflows, which are prohibited, are identified, the city can mitigate them. This evaluation will help ensure that additional point source bacteria loads do not contribute to the impairments in Chester Creek and Leif Erikson

Park Beach. The City of Duluth restores urban waters through improving stream crossings and leaking wastewater infrastructure, as well as conducting ongoing monitoring.

MS4s: The DAB final TMDL document assigns *E. coli* WLAs to permitted MS4s in the project area (Table 4 of this Decision Document). The MPCA oversees stormwater management accounting activities for the MS4 entities listed in the final TMDL document. The Small MS4 General Permit [Minn.R. 7090] requires regulated municipalities to implement best management practices (BMPs) to reduce pollutants in stormwater. Owners or operators of a regulated MS4 conveyance must develop a Stormwater Pollution Prevention Program (SWPPP) to address requirements such as: public education and outreach, public participation, illicit discharge detection and elimination, construction site runoff controls, post-construction runoff controls, pollution prevention and municipal good housekeeping measures.

Minn. R. 7090 requires that Permittees must document the approved TMDL study WLA in their future NPDES/SDS permit application and provide an outline of the BMPs to be implemented that address needed reductions. Owners or operators submit their application and corresponding SWPPP document to the MPCA for an adequacy review. The MPCA places all application materials on 30-day public notice and comment period. Permittees must implement and report on the activities in the issued NPDES/SDS permit (See Section 6.1 in the final TMDL document for specifics on the 2020 Small MS4 General Permit).

Current and future restoration projects are listed in detail in Section 6 of the TMDL, including projects in the contributing watersheds of most of the impaired waterbodies. The projects in the Duluth Urban Area are in the planning phases, as well as some that are completed. Projects for future restoration include channel stabilization, provision of trout habitat, stabilization of streams to reduce sediment, removal of damaged dams that impede fish passage, increase resilience to future flooding, demonstration of stormwater BMPs, and stormwater management plan development. Minnesota listed completed runoff reduction projects, erosion control projects, and evergreen planting to reduce runoff and reduce water temperatures in Section 6.

MPCA provided several examples of ongoing activities in the DAB TMDL watershed (Section 6.2 of the final TMDL document). The City of Duluth has set aside approximately \$300,000 total, or \$4,000 per lateral, to help owners off-set the cost of lining or repairing private sewer services that have been identified as contributing to the sanitary system on Park Point. The City also invested in lining the public sanitary sewers on Park Point; this work is expected to continue for another two to four years.

Additional efforts include:

- Portable bathroom installation/upgrade and maintenance
- including concrete pad and proper grading
- Plan design, and construct small scale stormwater management practices
- Extensive sanitary survey and longitudinal sampling
- Increased signage, trash receptacles, and pet waste stations

- Vegetative management for wildlife control/installation of vegetated shoreline buffers

Funding: MPCA’s reasonable assurance also includes a list of potential funding sources: Minnesota’s Lake Superior Coastal Program grants; local government cost-share and loan programs; federal grants and technical assistance programs (e.g., National Fish and Wildlife Foundation, U.S. Forest Service); federal Section 319 program for watershed improvements; Great Lakes Restoration Initiative; and Great Lakes Commission grants.

The Clean Water Legacy Act (CWLA) was passed in Minnesota for the purposes of protecting, restoring, and preserving Minnesota water and includes protocols and practices to be followed 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.

The State of Minnesota has adopted a watershed approach to address the state’s 80 major watersheds, denoted by an 8-digit HUC. This watershed approach incorporates water quality assessment, watershed analysis, public participation, planning, implementation, and measurement of results into a 10-year cycle that addresses both restoration and protection. The scientific findings regarding water quality conditions and strategies for addressing them are incorporated into a WRAPS report. The Duluth Urban Area WRAPS Report was completed in October 2020 and addresses the impaired beaches that are the subject of this TMDL study. This document was developed over a multi-year process with extensive stakeholder engagement.

Cooperative efforts would likely include informal and formal agreements to jointly use technical, educational, and financial resources. To attain its 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).

<https://www.pca.state.mn.us/sites/default/files/wq-ws4-03.docx>). 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 action. MPCA has developed guidance on what is required in the WRAPS. Section 6 of the final TMDL document also states that a WRAPS is currently being developed to outline future implementation and BMPs to achieve TMDL goals. Progress may be tracked at: <http://www.lakesuperiorstreams.org/communities/duluthWRAPS/index.html>. 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 (http://bwsr.state.mn.us/cwf_programs).

EPA finds that the TMDL document submitted by MPCA satisfies all requirements concerning this eighth element.

9. Monitoring Plan to Track TMDL Effectiveness

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

Comment:

Section 7 of the final TMDL document describes both new and increased stream monitoring efforts in the Duluth Area to further assess sources and to focus implementation activities. The MPCA discusses the need for sampling throughout the impaired watersheds to further assess potential sources. Through the Minnesota Lake Superior Beach Monitoring Program, the MDH will continue to monitor beaches for excess levels of bacteria to determine if standards are met, and track trends and progress towards changing impairment status. Sampling is conducted at least once a week at the impaired beaches in this TMDL, except for Park Point 20th Street/Hearding Island Canal Beach, (Section 7 of the TMDL). MDH maintains a website for information related to Lake Superior Beach Monitoring Program <https://www.mnbeaches.org/>. The Minnesota Lake Superior Beach Monitoring Program has also developed nowcast models that predict current water quality conditions at Lake Superior beaches.

In addition to MDH's routine beach monitoring, to better evaluate sources and the effectiveness of implementation activities, MPCA recommends the following sampling:

Leif Erikson Park Beach

- Longitudinal *E. coli* from the mouth of Chester Creek to the beach to Clarify Chester Creek's impacts.
- Sanitary survey within the Leif Erikson Park Beach drainage area, including watershed synoptic sampling to identify *E. coli* hotspots and local sources.
- Comprehensive MST study in the project area impacting Leif Erikson Park Beach and Chester Creek.

Boy Scout Landing Beach

- Longitudinal *E. coli* along Sargent Creek specifically upstream and downstream of Hwy 23.
- Sanitary survey within the BSL Beach drainage area, including watershed synoptic sampling to identify *E. coli* hotspots and local sources.
- Comprehensive MST study in the project area impacting BSL Beach.

- Increase BSL sampling events to twice a week.
- Monitor sediment *E. coli* levels in and at the outlet of Sargent Creek and explore costs.
- Monitoring Sargent Creek as recommended in the Duluth Urban Area Streams TMDL.

Park Point Harbor Side Beaches (MN Point 15th Str. Harbor Side Beach, Park Point 20th Str/ Hearing Island Canal Beach, and Park Point Sky Harbor Parking Lot Beach)

- Additional *E. coli* monitoring within the Duluth-Superior Harbor during both the recreational season and nonrecreational seasons.

All beaches

- Additional transect monitoring (from the beach into the harbor and along the shoreline) of *E. coli* to understand potential areas of influence during high winds and seiche events.
- Paired transect monitoring (i.e., collected concurrently) with beach sampling.
- Synoptic monitoring of *E. coli* at regular intervals along the St. Louis River and Estuary and within the Duluth-Superior Harbor with varying flows to evaluate migration and die off.
- *E. coli* reference sampling in St. Louis River and Estuary and Duluth-Superior Harbor.

EPA finds that the TMDL document submitted by MPCA satisfies all requirements concerning this ninth element.

10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

Comment:

Implementation strategies for the impaired beaches are similar to the recommendations provided in the EPA-approved Duluth Area Streams TMDL and WRAPS, and include addressing discharge of untreated wastewater (e.g., failing septic systems, leaky wastewater infrastructure, lack of restrooms in strategic locations), stormwater management, land use planning and ordinance development, education and outreach activities, and pet and wildlife waste management. If current MS4 permit requirements for bacteria WLAs remain similar in the next MS4 general permit (expected to be issued in 2025), MS4s would be required to maintain a written or mapped inventory of bacteria sources, as well as a prioritization plan to reduce those bacteria sources.

Implementation strategies are outlined in Section 8 of the final TMDL document. For planning purposes MPCA states that it considers the Duluth Area Beaches final TMDL document be similar to an addendum to the Duluth Urban Area Streams TMDL. The MPCA presented a

variety of possible implementation activities which could be undertaken within the watersheds.

Urban/residential stormwater reduction strategies: Several of the watersheds have significant amounts of urban/suburban land. MPCA anticipates that controls on stormwater will be needed to attain and maintain WQS. As noted in Section 5 of this Decision Document, the SWPPPs will be reviewed and revised as needed. Inflow and Infiltration of and leak prevention will be identified and addressed in the distribution system. Disconnecting impervious cover and reducing runoff will be important in reducing both pollutants in the watersheds.

Riparian Area Management Practices (i.e., buffer strips): Protection of streambanks within the watershed through planting of vegetated/buffer areas with grasses, shrubs or trees will mitigate pollutant inputs into surface waters. These areas will filter runoff before the runoff enters the creeks.

Septic System Control: Improvements to existing septic systems, as well as improvements at restroom facilities in parks and beaches will reduce bacteria loads in several of the watersheds. MPCA will be working with local organizations to improve signage and facilities.

Public Education Efforts: Public programs will be developed to provide guidance to the general public on pollutant 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 the waterbodies.

EPA reviews, but does not approve, implementation plans. EPA finds that the TMDL document submitted by MPCA satisfies all requirements concerning this tenth element

11. Public Participation

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

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

Comment:

To assist in developing the TMDL, a "Core Team" of local, state, and federal resource management agency staff was formed by MPCA. The Core Team provided input on TMDL

issues as well as implementation activities in the region (Executive Summary and Section 9 of the final TMDL document). A virtual Core Team meeting for the DAB TMDL was held on December 21, 2020. Subsequently, Core Team members were able to review and provide input on the results of the *E. coli* source assessment, the concentration-based TMDL approach, and recommended implementation activities. Following this input substantial revisions were made. A key revision to the TMDL approach included expanding the number of regulated MS4s with WLAs for the impaired beaches to include those with an upstream subwatershed within the study area (i.e., streams impaired for *E. coli* that discharge near the impaired beach) in addition to the subwatershed draining directly to the impaired beach.

An opportunity for public comment on the draft TMDL report was provided via a public notice in the State Register from January 31, 2022 through March 2, 2022. There were two official comment letters received, one from St. Louis County, and one from the Minnesota Department of Transportation (MnDOT).

The comments raised by St. Louis County focused on minor wording changes and clarifications. MPCA identified where language changes were made in their response to the county. The comments from MnDOT also focused on clarifications on language in the TMDLs, as well as suggesting more explicit language on how the source areas for each beach were defined. MnDOT noted that the TMDL had expanded the pollutant source areas (and subsequent WLAs calculations) to include not only the direct drainage area for each beach, but also upstream areas. MPCA clarified the change in the source contribution areas, and that the WLAs included more MS4s and the WLSSD. MPCA also identified where additional clarifications had been made in the TMDL language to address the other comments from MnDOT.

The EPA carefully reviewed the comments submitted during the public notice period, as well as the responses from MPCA. The EPA agrees that MPCA appropriately addressed the comments and revised the TMDL document as appropriate. 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 waterbody, and the pollutant(s) of concern.

Comment:

The EPA received the final Duluth Area Beaches TMDL document, submittal letter and accompanying documentation on May 31, 2022. In the submittal letter, MPCA states that the submission includes the final TMDLs for *E. coli* for the Duluth Area Beaches and were being submitted to EPA pursuant to Section 303(d) of the Clean Water Act for EPA review and

approval. The submittal also contained the names of the watersheds as they appear 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.

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

13. Conclusion

After a full and complete review, EPA finds that the *E. coli* TMDLs for the Duluth Urban Area Beaches TMDL report satisfies all the elements of approvable TMDLs. The TMDLs address impaired aquatic recreation use due to excessive bacteria and 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 **five (5)** bacteria TMDLs for Duluth Area Beaches.

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

APPENDIX 1
Duluth Area Beaches *E. coli* TMDL Summaries
Tables 17- 22 (from the final TMDL document)

Table 17. *E. coli* TMDL summary, Leif Erikson Park Beach (04010102-C21).

- 303(d) listing year: 2014
- Baseline year: 2011
- Numeric target used to calculate TMDL: 126 org/100 mL
- TMDL and allocations apply Apr 1 –Oct 31

TMDL Parameter		<i>E. coli</i> (org/100 mL)
WLA	Duluth City MS4 (MS400086)	126
	Rice Lake (MS400151)	
	St. Louis County MS4 (MS400158)	
	MnDOT Outstate District MS4 (MS400180)	
	University of Minnesota Duluth (MS400214)	
	Total WLA	
LA	Total LA	
TMDL		
Maximum calendar month geometric mean (org/100 mL)		131
Overall estimated percent reduction^a		4%

Note – the WLA and LA are not additive, each allocation receives the same concentration (i.e., 126 org/mL). MOS is implicit (see discussion in Section 4.1.7). Attainment of both the geometric mean and single sample parts of the water quality standard is required.

a. Calculated by comparing the highest observed (monitored) calendar month geometric mean concentration from the months that the standard applies to the geometric mean standard, as a concentration, $([\text{monitored} - \text{standard}]/\text{monitored})$. Observed *E. coli* data are from 2009 through 2018.

Table 18. *E. coli* TMDL summary, Minnesota Point 15th Street Harbor Side Beach (04010201-A90).

- **303(d) listing year:** 2014
- **Baseline year:** 2011
- **Numeric target used to calculate TMDL:** 126 org/100 mL
- **TMDLs and allocations apply Apr 1 –Oct 31**

TMDL Parameter		<i>E. coli</i> (org/100 mL)
Boundary conditions	St. Louis River at Fond du Lac dam	126
	State of Wisconsin	
WLA	WLSDD WWTP (MN0049786)	
	Duluth City MS4 (MS400086)	
	Hermantown (MS400093)	
	Midway Township (MS400146)	
	Proctor (MS400114)	
	Thomson Township (MS400280)	
	University of Minnesota Duluth (MS400214)	
	Lake Superior College (MS400225)	
	St. Louis County (MS400158)	
	MnDOT Outstate District (MS400180)	
	Total WLA	
LA	Total LA	
Loading Capacity		
Maximum calendar month geometric mean (org/100 mL)		259
Overall estimated percent reduction ^a		51%

Note – the WLA and LA are not additive, each allocation receives the same concentration (i.e., 126 org/mL). MOS is implicit (see discussion in Section 4.1.7). Attainment of both the geometric mean and single sample parts of the water quality standard is required.

a. Calculated by comparing the highest observed (monitored) calendar month geometric mean concentration from the months that the standard applies to the geometric mean standard, as a concentration, $([\text{monitored} - \text{standard}]/\text{monitored})$. Observed *E. coli* data are from 2009 through 2018.

Table 19. *E. coli* TMDL summary, Park Point 20th Street/Hearing Island Canal Beach (04010201-A89).

- 303(d) listing year: 2014
- Baseline year: 2011
- Numeric target used to calculate TMDL: 126 org/100 mL
- TMDL and allocations apply Apr 1 –Oct 31

TMDL Parameter		<i>E. coli</i> (org/100 mL)
Boundary conditions	St. Louis River at Fond du Lac dam	126
	State of Wisconsin	
WLA	WLSSD WWTP (MN0049786)	
	Duluth City MS4 (MS400086)	
	Hermantown (MS400093)	
	Midway Township (MS400146)	
	Proctor (MS400114)	
	Thomson Township (MS400280)	
	University of Minnesota Duluth (MS400214)	
	Lake Superior College (MS400225)	
	St. Louis County (MS400158)	
	MnDOT Outstate District (MS400180)	
	Total WLA	
LA	Total LA	
Loading Capacity		
Maximum calendar month geometric mean (org/100 mL)		784
Overall estimated percent reduction^a		84%

Note – the WLA and LA are not additive, each allocation receives the same concentration (i.e., 126 org/mL). MOS is implicit (see discussion in Section 4.1.7). Attainment of both the geometric mean and single sample parts of the water quality standard is required.

a. Calculated by comparing the highest observed (monitored) calendar month geometric mean concentration from the months that the standard applies to the geometric mean standard, as a concentration, $([\text{monitored} - \text{standard}]/\text{monitored})$. Observed *E. coli* data are from 2009 through 2014.

Table 20. *E. coli* TMDL summary, Park Point Sky Harbor Parking Lot Beach (04010201-A87).

- 303(d) listing year: 2016
- Baseline year: 2011
- Numeric target used to calculate TMDL: 126 org/100 mL
- TMDL and allocations apply Apr 1 –Oct 31

TMDL Parameter		<i>E. coli</i> (org/100 mL)	
Boundary conditions	St. Louis River at Fond du Lac dam	126	
	State of Wisconsin		
WLA	WLSSD WWTP (MN0049786)		
	Duluth City MS4 (MS400086)		
	Hermantown (MS400093)		
	Midway Township (MS400146)		
	Proctor (MS400114)		
	Thomson Township (MS400280)		
	University of Minnesota Duluth (MS400214)		
	Lake Superior College (MS400225)		
	St. Louis County (MS400158)		
	MnDOT Outstate District (MS400180)		
	Total WLA		
	LA		Total LA
Loading Capacity			
Maximum calendar month geometric mean (org/100 mL)		331	
Overall estimated percent reduction ^a		62%	

Note – the WLA and LA are not additive, each allocation receives the same concentration (i.e., 126 org/mL). MOS is implicit (see discussion in Section 4.1.7). Attainment of both the geometric mean and single sample parts of the water quality standard is required.

a. Calculated by comparing the highest observed (monitored) calendar month geometric mean concentration from the months that the standard applies to the geometric mean standard, as a concentration, $([\text{monitored} - \text{standard}]/\text{monitored})$. Observed *E. coli* data are from 2009 through 2018.

Table 21. *E. coli* TMDL summary, Boy Scout Landing Beach (04010201-A92).

- 303(d) listing year: 2020
- Baseline year: 2011
- Numeric target used to calculate TMDL: 126 org/100 mL
- TMDL and allocations apply Apr 1 –Oct 31

TMDL Parameter		<i>E. coli</i> (org/100 mL)
Boundary conditions	St. Louis River at Fond du Lac dam	126
	State of Wisconsin	
WLA	Duluth City MS4 (MS400086)	
	Midway Township MS4 (MS400146)	
	Thomson Township (MS400280)	
	MnDOT Outstate District MS4 (MS400180)	
	Total WLA	
LA	Total LA	
Loading Capacity		
Maximum calendar month geometric mean (org/100 mL)		
Overall estimated percent reduction ^a		48%

Note – the WLA and LA are not additive, each allocation receives the same concentration (i.e., 126 org/mL). MOS is implicit (see discussion in Section 4.1.7). Attainment of both the geometric mean and single sample parts of the water quality standard is required.

a. Calculated by comparing the highest observed (monitored) calendar month geometric mean concentration from the months that the standard applies to the geometric mean standard, as a concentration, $([\text{monitored} - \text{standard}]/\text{monitored})$. Observed *E. coli* data are from 2009 through 2018.