MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Antidegradation assessment

Water Quality Certification Applicants

401 Certification

Doc Type: 401 Certification

Instructions: This form provides general guidance on information that may be necessary for antidegradation review. The Minnesota Pollution Control Agency (MPCA) reserves the right to request information from the applicant in addition to that provided in this form.

Section 401 of the Clean Water Act requires any applicant for a federal license or permit that authorizes an activity that may result in a discharge to Waters of the United States to obtain certification from the state or tribe in which the discharge originates to ensure compliance with applicable water quality standards. In addition to completing the Joint Application Form, https://bwsr.state.mn.us/joint-application-form, applicants whose proposed projects may require an MPCA Individual 401 Water Quality Certification for work in aquatic resources must also provide the information necessary to demonstrate compliance with the Minnesota antidegradation water quality standards (Minn. R. 7050.0265, https://www.revisor.mn.gov/rules/7050.0265/). Applicants should review the antidegradation requirements in Minn. R. 7050.0285 (https://www.revisor.mn.gov/rules/7050.0285/) prior to completing this form.

The purpose of the antidegradation requirements is to achieve and maintain the highest possible quality in surface waters of the state. To accomplish this purpose, antidegradation requires:

A. The protection of existing uses and the level of water quality necessary to protect existing uses;
B. The minimization of degradation of high water quality, and only to extent necessary to accommodate important economic or social development;
C. The protection of outstanding resource value waters; and
D. Consideration of thermal discharges.

Applicant information

Applicant name/Project name/USACE ID number: John Lenczewski / South Branch Root River Enhancement / MVP-2026-00204-SSC

Date submitted (mm/dd/yyyy): 03/06/2026

1. Environmental Assessment Worksheet (EAW)/Environmental Impact Statement (EIS)

Note: The MPCA cannot make any certification decision until the Environmental Review process is complete.

Is environmental review (Environmental Assessment Worksheet, Environmental Impact Statement, Categorical Exclusion (Catex), etc.) **required** for this project? X No

If yes, include the date record of decision (ROD) / finding of fact (FOF) was completed and the decision: _____

For responses for questions 2 through 12, if you are referencing other documents, please attach them and provide an exact citation to where the information can be found. If the project manager cannot find it, the antidegradation may be sent back as incomplete.

2. Analysis of alternatives to project design that avoid or minimize degradation

(This does not include the Preferred Alternative discussed below.)

Describe your analysis of at least two prudent and feasible alternative project designs that would avoid or minimize degradation and avoid or minimize net increases in loading of pollutants or other causes of degradation to surface water (such as wetlands, lakes, stream, etc.). The analysis of each alternative must include a description of how impacts to surface waters are avoided and/or minimized; information on any design considerations and constraints; expected performance, construction, operation, and maintenance costs; and reliability for each alternative. If one of the alternatives is no build, an explanation must be provided why that is not feasible. Minn. R. 7050.0280, subp. 2

Alternative 1: Conduct a partial project that only removes invasive trees and shrubs. This approach would address concerns of invasive species in the project site and allow for increased sunlight to reach the herbaceous layer in the floodplain to help protect eroding channel banks. This alternative was not advanced since it would not address channel incision and existing eroding river banks or reconnect the channel with the floodplain. Not addressing the eroding banks directly would continue to impact water resources (contributing to TSS loads in the river).

Alternative 2: No build. Not building the proposed project would prevent all proposed impacts to existing river banks and vegetation. This alternative was not considered since it would not address the existing eroding banks and subsequent sediment impacts to the resource nor improve floodplain connectivity. This alternative would not enhance degraded wetlands near the channel and would not remove woody and herbaceous invasives species in the project area.

3. Preferred alternative project design:

Describe the analysis of your preferred alternative project design that avoids or minimizes net increases in loading of pollutants or other causes of degradation. The analysis must include a description of how impacts to surface waters are avoided and/or minimized; information on any design considerations and constraints; expected performance, construction, operation, and maintenance costs; and reliability for each alternative. In addition, the analysis must verify that the preferred alternative is the least degrading prudent and feasible alternative for surface water. If the preferred alternative is not the least degrading alternative, then you must provide an explanation of the constraints. Explanation of least impacts should also include pollutant loading. For example: hard-armoring a stream bank might reduce TSS, but could increase velocity and create downstream erosion or loss of habitat for aquatic organisms. Minn. R. 7050.0280, subp.2

The proposed design of the South Branch Root River enhancement project is based on an ecological reference condition within the project reach and further supported by regional curve data in the Root River watershed. Existing conditions within the project reach indicate degradation of aquatic and riparian habitat that is in contrast to an ecologically functional “reference” reach. Degradation identified in the project site includes riverbank sloughing and erosion, channel incision and floodplain abandonment, lateral bank migration, marginal trout spawning habitat, and riparian vegetation dominated by invasive species including Siberian elm, white mulberry, reed canary grass, common buckthorn, invasive bush honeysuckle, garlic mustard, Dame’s rocket, creeping charlie, and wild parsnip. These conditions have negatively affected aquatic habitat for coldwater dependent macroinvertebrates, brown trout, and suckermouth minnow, a species of special concern documented in the project reach. In addition, channel incision has impacted floodplain hydrology which has resulted in degraded wetland hydrology and riparian vegetation.

The ecological reference condition identified in the project area includes a river channel with a connected floodplain at the bankfull discharge. The riverbanks are well vegetated and show little sign of erosion, and coarse substrates occur in both riffle and pool areas. The channel dimensions of this reference reach were surveyed to develop the proposed dimensions for the project reach. These dimensions were then compared to regional curve data collected in southeast MN to verify proposed channel widths and bankfull estimates in the project reach.

Specific inputs of the proposed design include installing toewood and logs to provide cover and forage opportunities for trout, and to support macroinvertebrates and amphibians that utilize woody structure for basking, protection, and feeding. Proposed riffle enhancements will emulate natural riffles and will include installation of small gravel within the glides to support fish spawning. The materials used in channel narrowing include boulder and cobble material that is anticipated to slowly break down over time and provide additional gravel in the active channel. Long-term bank stability will be provided by the native riparian vegetation proposed on the floodplain and bankfull benches, and the native seed mixes proposed include species that occur in riparian areas in this part of the state (e.g., State Mix 34-261 Riparian South & West and Wet Prairie Mix). The native seed mixes selected for the project include 86 species of native grasses, sedges, and forbs to support pollinator habitat and forage for birds, mammals, and insects.

4. Water quality parameters of concern

List the water quality parameters of concern for the project. These parameters should relate to the proposed project or activity type. *Examples*: *Total Suspended Solids (TSS), Dissolved Oxygen (DO), Mercury (Hg), Temperature, PCBs, flow volume, velocity, etc.*

Total suspended solids and E. Coli

5. Existing uses and level of water quality necessary to protect uses

Antidegradation requires the protection of existing uses and the protection of the water quality necessary to protect those uses (Minn. R. 7050.0265, subp. 2). Existing use is defined as *those uses actually attained in the surface water on or after November 8, 1975* (Minn. R. 7050.0255 subp. 15).

Example 1: A surface water is in pristine condition on November 28, 1975, but development or other impacts have degraded that same water and it is no longer a high quality surface water. The existing use is the pristine water.

Example 2: A stream is highly degraded for several decades until it is restored to a trout stream in 1990. The existing use is the restored trout stream.

In the table below:

Identify all streams, rivers, wetlands and lakes within a mile radius of the project location by Waterbody Identification Number (WID). WIDs, and other information, can be found by using the map at: EDA: Surface water data. Identify the use classification and existing use for **all** surface waters potentially impacted by this project. Include surface waters that are not directly within the project area but may be *potentially impacted even if they are more than one mile away*. Review Minn. R. 7050.0415 – 7050.0430 for the use classification that fits the waters potentially impacted by your project. Use classifications are also located at https://www.revisor.mn.gov/rules/?id=7050.

Also, identify the existing water quality of each surface water for the water quality parameters of concern. The methods for determining existing water quality are found in Minn. R. 7050.0260.

Streams and rivers
If the waterbody is a stream/river and not listed in *Beneficial use designations for stream reaches* the beneficial uses are 2Bg, 3, 4A, 4B, 5 and 6.

Lakes and wetlands
To find beneficial use designations for lakes and wetlands, check Minn. R. 7050.0470. Waterbodies described in both documents are arranged by major watershed basins in this document. If the waterbody is a wetland and not listed in Minn. R. 7050.0470, the unlisted default beneficial uses are 2D, 3, 4A, 4B, 5 and 6. If the waterbody is a lake and not listed in Minn. R. 7050.0470 the beneficial uses are 2B, 3, 4A, 4B, 5 and 6.

Exceptions: Water bodies in the Boundary Waters Canoe Area Wilderness and in Voyageurs National Park **that are not listed**, may have different Use Classifications (Beneficial use designations).

Name of surface water/Waterbody and Waterbody Identification Number (AUID), if applicable.	Use classification	Existing use (highest quality attained from November 28, 1975 to present)	Existing water quality
Root River, South Branch 07040008-550	1B, 2Ag	Impaired trout stream	Impaired for AQL (TSS) & AQR (E.coli) and one or more TMDLs approved
Wetland #1 (EOR delineated)	2D, 3, 4A, 4B, 5 and 6	Fresh (Wet) Meadow (Disturbed Subtype), PEMA	Not assessed
Wetland #3 (EOR delineated)	2D, 3, 4A, 4B, 5 and 6	Fresh (Wet) Meadow (Disturbed Subtype), PEMB	Not assessed

6. Water quality comparison before and after project

For each surface water listed in Section 5, describe the anticipated water quality after the project is fully complete and operational. If any portion of the surface area of a water resource will be permanently impacted, a Mitigation Plan will be required (see Section 12). If water quality improvements are anticipated, please provide calculations or a detailed explanation of how you came to this conclusion.

Name of surface water/Waterbody and Waterbody Identification Number (AUID), if applicable.	Anticipated Water Quality
Root River, South Branch 07040008-550	Impaired for AQL (TSS) & AQR (E.coli) and one or more TMDLs approved (but the proposed project is expected to reduce TSS loading by preventing further bank erosion within the project site)
Wetland #1 (EOR delineated)	Similar to existing but with restored native wetland vegetation
Wetland #3 (EOR delineated)	Similar to existing but with restored native wetland vegetation

7. Impaired waters and Total Maximum Daily Loads (TMDL)

Identify ALL surface waters listed in Section 5 that are listed on the Minnesota Impaired Waters List (https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list). List the impairment for each surface water identified and state whether or not a total maximum daily load study (TMDL) has been completed for the waterbody.

Name of waterbody	Impairment	TMDL completed? (Y/N)
Root River, South Branch 07040008-550	TSS & E.coli	☒ Yes ☐
		☐ Yes ☐ No
		☐ Yes ☐ No

8. Physical alterations of surface waters

Identify ALL surface waters listed in Section 5 that are listed on the Minnesota Impaired Waters List (https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list). List the physical alteration including hydraulic impacts such as volume, inundation and velocity and the extent/volume of the alteration, also state if the alteration will be permanent (longer than one year) or temporary.

See next page for table.

Waterbody Identification Number (AUID), if applicable.	Aquatic Resource Name/Type (wetland, lake, tributary etc.)	Type of Impact (fill, excavate, drain, or remove veg)	Duration of Impact Permanent (P) or Temporary (T)[1]	Size of Impact
Wetland #1 (EOR delineated)	Wetland	Fill (covering existing riprap on wetland fringe with soil and reseeding)	P	225 LF, 0.03 ac.
Wetland #3 (EOR delineated)	Wetland	Remove vegetation	T (30 days)	450 LF, 0.05 ac.
Root River, South Branch 07040008-550	Tributary	Fill	P	3100 LF, 0.51 ac.

9. Indirect impacts

For all surface waters where partial physical alteration of the function or acreage of the surface water will occur, describe the potential indirect impacts to the remaining surface water and the potential indirect impacts to nearby surface waters. For all surface waters where physical alteration will affect the entire function or acreage of the surface water, describe the potential indirect impacts to nearby surface waters. Indirect impacts may include changes in water source chemistry, timing, water quality (including temperature), water volume or velocity, aquatic species health or population, impervious surfaces and chemical runoff (chloride, petroleum products, etc), vegetation or macroinvertebrate (bug) populations, etc.

Indirect impacts from the proposed project will include attenuation of peak flood flows (flows over bankfull discharge) and subsequent reduction of discharge to downstream receiving waters (Root River). The proposed project includes reconnecting the river channel to the floodplain and adjacent wetlands, thereby flood events are anticipated to spill out over the floodplain. The attenuation of flood water within the floodplain should improve the water quality of the river by reducing sediment, flow volume, and nutrient discharge from the project site. The reduction in sediment & nutrient loading by reshaping the riverbanks and connecting the floodplain will benefit existing resources downstream of the project by reducing sediment smothering of macroinvertebrate habitat and fish spawning areas and also reduce excessive algal growth by reducing available nutrients (phosphorus).

10. Loading and degradation to surface waters

For all surface waters where physical alterations are proposed, describe all anticipated net increases in loading at the project site and downstream. Include all potential causes of degradation expected in each surface water when your preferred alternative project design is fully implemented.

Example 1: Filling of a wetland that causes another wetland to backup and inundate, (the inundated wetland can be on or off the project site).

Example 2: A discharge from the project site that increases flow to another surface water on or off the project site.

Example 3: Upsizing a culvert can increase downstream velocity and may increase flooding and erosion or require additional disturbance to the stream to replace downstream culverts or infrastructure being negatively impacted.

Construction of the proposed project is anticipated to temporarily release minor sediment and nutrient discharge during installation of the proposed bank protection practices (e.g., vegetated boulder toe). To limit sediment and nutrient discharge during construction, erosion control practices that will be utilized will include rapid soil stabilization, use of hydromulch and crimped straw with a tackifier to hold the straw to the soil, biologs on slopes, and geomorphic position (flat floodplain benches to intercept sediment). However, the project will result in overall reduction in sediment and nutrient discharge by preventing further river bank erosion and attenuation of flood water on the floodplain that will in turn reduce flood volume downstream of the project.

11. Comparison of existing and expected economic conditions and social services

Provide a comparison of existing and expected economic conditions and social services when the proposed project (preferred alternative) is fully implemented. Include a description of economic gains or losses attributable to the proposed activity; contribution to social services; prevention/remediation of environmental or public health threats; climate change considerations, trade-offs between environmental media; the value of the water resources; and other relevant environmental, social, and economic impacts of the proposed activity. Minn. R. 7050.0265, subp. 5(B)

When the proposed project is fully implemented, it is anticipated the project will help achieve TMDL reduction goals for the Root River (TSS & E.coli) as described in #10 above through attenuation of flood water on the floodplain & subsequent reduction in sediment & bacteria release. The ecological benefits of the project include improved water quality & clarity of the Root River which is a popular river for tubers, kayakers, and trout anglers. The proposed project includes flat floodplain benches along the river that will significantly improve recreational access to the river (currently very steep slopes) and provide greater establishment of native riparian vegetation that will directly and indirectly benefit terrestrial and aquatic biota in the area. The project will also help mitigate the effects of climate change by attenuating peak flows through the town of Lanesboro, thereby reducing total flow and subsequent potential for erosion of the channel bed and riverbanks downstream of the project site.

12. Description of the Compensatory Mitigation Plan Minn. R. 7050.0285, subp. 2 (A-E)

The applicant may propose to mitigate the project's permanent wetland impacts through an approved wetland bank if the proposed mitigation is for the same resource quality type surface water ("type-for-type") AND the proposed mitigation is located in the same major watershed (https://www.pca.state.mn.us/water/watersheds). The applicant may propose to mitigate other surface water resource types with on-site, project-specific mitigation if the mitigation is of the same resource type as the impacted water resource.

Describe any proposed permanent surface water impacts. Include the name of the surface water and AUID if appropriate, the type of impact, and the extent of the impact.

No compensatory mitigation is proposed. See Attachment B in Joint Application.

Describe mitigation proposed for permanent surface water impacts.

For each surface water listed above, describe how the proposed compensatory mitigation will replace existing uses and maintain the current level of water quality at the proposed project site (e.g., wetland types, replacement ratio, water monitoring data if available).

Describe how the compensatory mitigation will be maintained and the monitoring activities that will be conducted to ensure the proposed mitigation is viable over the long-term. Include a timeline for reporting progress and an intervention/remediation plan to be implemented if the mitigation fails.

Applicant Signature

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Date: 05/07/2026

Signature: