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April 1, 2026

RE: City of Bloomington
Nine Mile Creek Corridor Renewal Project
SEH No. BLMGT 179178 14.00

Joshua Prosoki
Pollution Control Agency
Water Quality Certification Coordinator
520 Lafayette Road North
St Paul, MN 55155

Sent via email to: *401certification.pca@state.mn.us, Joshua.Prososki@state.mn.us*

Dear Josh:

On behalf of the City of Bloomington, we are submitting the enclosed Antidegradation Assessment materials for the Nine Mile Creek Corridor Renewal Project. This submittal follows the 401 Water Quality Certification (WQC) prefiling request submitted on March 2, 2026, and the subsequent coordination meeting held with Minnesota Pollution Control Agency staff on March 13, 2026, as well as recent coordination with the U.S. Army Corps of Engineers regarding applicable Nationwide Permit pathways. As discussed with agency staff, the project components addressed in this submittal fall under Nationwide Permits 13 (Bank Stabilization) and 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities). Based on USACE guidance, portions of the work, including Repair Area A-05, are being advanced under NWP 13 due to the extent of stabilization and associated conversion of wetland to tributary. As a result, these activities are being incorporated into a single Individual 401 WQC review, consistent with agency direction.

The purpose of this submittal is to support MPCA's review of the project and to provide the necessary information to evaluate whether a waiver of the Individual 401 WQC may be appropriate given the nature and outcomes of the proposed work. As discussed during the prefiling meeting, the project is designed and implemented as a restoration and stabilization effort that results in a net improvement to water quality, aquatic habitat, and recreational use, rather than degradation of surface waters.

The Antidegradation Assessment focuses on two project components: Repair Area A-05 (Major Embankment Stabilization) and the Nine Mile Creek Remeander.

Repair Area A-05 addresses a failing embankment that is an active and substantial source of sediment to the creek. Stabilization will eliminate ongoing toe erosion and slope failure, resulting in a permanent reduction in sediment inputs. The Nine Mile Creek Remeander restores a previously straightened and entrenched channel to a more natural planform and profile, reducing flow velocities and shear stress, increasing floodplain connectivity, and promoting sediment retention within the system. Together, these improvements represent a process-based, long-term solution to improving water quality and aquatic habitat conditions.

The enclosed Antidegradation Assessment demonstrates that the project is consistent with Minnesota's antidegradation standards by protecting existing uses and improving surface water quality. The project results in a net gain of aquatic resource function, sustained reductions in sediment loading, and enhanced ecological integrity. Temporary construction-related impacts are expected to be minor and short-term and will be effectively managed through standard erosion and sediment control practices and sequencing. While we understand that an Individual 401 WQC review is being initiated based on USACE coordination, the City of Bloomington respectfully requests that MPCA consider whether a waiver remains appropriate given the net beneficial, restoration-focused nature of the project and the absence of long-term adverse water quality impacts.

We appreciate MPCA's coordination and guidance to date and look forward to continued collaboration as the project moves forward. Please do not hesitate to contact us if additional information is needed to support your review.

Please contact me directly with any questions or to schedule a pre-filing meeting via e-mail (rbeduhn@sehinc.com) and phone (651-470-6027).

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

Rebecca Beduhn
Sr. Wetland Scientist

c: Samantha Coungeris, USACE Project Manager

Enclosures:

1. Antidegradation Assessment
2. Section 401 Water Quality Certification Required Submittal Information

Attachments:

1. Alternatives Analysis
2. Project Description and Preferred Alternative
3. Table: Existing Uses and Level of Water Quality Necessary to Protect Uses
4. Project Location

Attachment 1 – Alternatives

This antidegradation analysis is limited to the **Nine Mile Creek Remeander** and **Repair Area A-05 (Major Embankment)**.

Alternative 1 – No-Build Alternative

Under the no-build alternative, the straightened channel within the remeander reach would remain entrenched with elevated velocities and shear stress, continuing to drive erosion, sediment loading, and loss of floodplain connectivity. At Repair Area A-05, ongoing toe erosion and slope failure along the valley wall would continue, increasing sediment delivery to Nine Mile Creek and posing a risk to adjacent infrastructure. This alternative would not meet project objectives and would result in continued degradation of water quality and aquatic habitat.

Alternative 2 – Structural Armoring Without Channel Realignment

An alternative using continuous hard armoring (e.g., riprap) without channel realignment was evaluated. While this approach could reduce localized erosion, it would increase flow velocities, reduce habitat complexity, and disconnect the channel from the floodplain. Long-term maintenance costs would be higher, and overall aquatic function would be reduced compared to a geomorphically stable, natural channel design.

Attachment 2 – Project Description/ Preferred Alternative

Project Description

The Nine Mile Creek Corridor Renewal Project includes targeted restoration and stabilization activities focused on two critical areas of degradation: **Repair Area A-05 (Major Embankment)** and the **Nine Mile Creek Remeander**. These project components address long-standing channel instability, excessive erosion, and altered hydrologic conditions resulting from historic land use, stormwater inputs, and extreme flood events. Together, they are intended to reduce sediment loading, improve channel and floodplain function, protect adjacent infrastructure, and enhance long-term aquatic habitat and water quality.

Repair Area A-05 – Major Embankment Stabilization

Repair Area A-05 is located along an outer bend of Nine Mile Creek where the channel runs directly along the toe of a steep valley wall. Geotechnical evaluation indicates the slope consists primarily of sandy soils at an approximate slope of 1 vertical to 1 horizontal. Active erosion at this location is occurring through two primary mechanisms: continued scour of the slope toe by stream flows and surface erosion originating from stormwater runoff from an apartment complex located at the top of the bluff. These combined forces have resulted in significant bank failure and sloughing extending high up the valley wall.

The existing soils are poorly cohesive and not conducive to natural vegetation establishment, increasing the likelihood that erosion will continue to migrate upslope if left unaddressed. Ongoing toe erosion would further undermine the upper slope, posing an increasing risk to nearby infrastructure and contributing excessive sediment to Nine Mile Creek. Due to the scale of the failure and the risk to public and private infrastructure, a robust stabilization approach is required.

The proposed stabilization includes reconstructing and stabilizing the entire length of the embankment along the valley wall until the creek alignment naturally bends away from the slope. Fill material will be placed to rebuild eroded areas and armored with non-carbonate, rounded field stone consistent with MnDOT Class III riprap. Riprap sizing was selected based on its ability to withstand modeled velocities of approximately 7.8 feet per second during the 100-year flow event. A buried toe footing will be installed one foot below the channel bottom to prevent undermining, with the toe backfilled using salvaged native streambed material to maintain a natural channel substrate.

The reconstructed embankment will be graded to a 3H:1V slope, which is the steepest slope recommended based on geotechnical analysis of the existing soils and riprap configuration. Riprap above the ordinary high water level will be top-dressed with topsoil

and seeded with native vegetation, while live stakes will be installed below the OHWL to promote long-term stabilization. Channel realignment and excavation on the opposite bank will offset fill volumes, achieving a no-rise condition. The inner bank will be stabilized using natural erosion control blankets and native vegetation.

Nine Mile Creek Remeander

The Nine Mile Creek Remeander is located downstream of Harrison Park within a broad valley area that historically functioned as a reservoir upstream of a now-removed dam. This reach has a long history of channel migration, with multiple historic alignments documented in aerial imagery. The existing channel was formed during the July 1987 “superstorm,” when more than ten inches of rainfall caused rapid channel relocation and entrenchment. Since that event, the channel has remained relatively straight, deeply incised, and hydraulically disconnected from its floodplain.

The straightened channel currently conveys high storm flows at elevated velocities, contributing to erosion, habitat simplification, and encroachment toward adjacent infrastructure and trails. Upstream stormwater outfalls and watershed development have increased peak discharge rates beyond natural conditions, further exacerbating channel instability. Although wetlands exist within the remeander reach, they are primarily remnant oxbows that have filled with sediment and organic material, with limited floodplain interaction.

The primary goal of the remeander project is to restore a more natural channel alignment that is better suited to current hydrologic conditions while reestablishing floodplain connectivity. The proposed design relocates the channel into a historically active meander corridor, increasing channel length and allowing flows exceeding the bankfull condition (approximately the 1- to 2-year event) to spill onto the floodplain. This reduces in-channel velocities and shear stresses, promoting long-term stability and improved aquatic habitat.

Design development was informed by regional stream gage data, watershed and hydraulic modeling, and site-specific soil borings. The restored channel will include riffles, pools, and a defined thalweg, along with natural bank stabilization measures such as brush toe and toewood constructed from salvaged site vegetation. Adjacent floodplain areas will be graded to increase flood storage capacity and promote formation of wet meadow habitat. Construction will be sequenced to maintain flow in the existing channel until the new channel is complete, after which flows will be diverted and the existing channel filled and stabilized.

Preferred Alternative

Preferred Alternative – Repair Area A-05 (Major Embankment)

The preferred alternative for Repair Area A-05 stabilizes a failing embankment along the valley wall where chronic toe erosion and slope instability are contributing significant sediment to Nine Mile Creek. This alternative directly addresses one of the most substantial sources of localized sediment loading in the project corridor by arresting active bank failure and preventing continued upslope sloughing.

The design includes realigning the channel away from the valley wall, reconstructing the embankment using engineered fill, and armoring the slope with MnDOT Class III non-carbonate riprap sized to withstand modeled high-flow velocities. A buried toe footing set below the channel bottom prevents future undermining, while salvaged native streambed material is used to maintain a natural channel substrate. Vegetation establishment above and below the ordinary high water level further enhances long-term stability and sediment control.

By eliminating ongoing bank erosion and stabilizing a highly vulnerable reach, the preferred alternative will substantially reduce fine sediment inputs, improve water clarity, and support attainment of water quality goals for Nine Mile Creek. This approach minimizes long-term degradation while protecting adjacent infrastructure and maintaining hydraulic capacity under existing flood conditions.

Preferred Alternative – Nine Mile Creek Remeander

The preferred alternative for the Nine Mile Creek Remeander restores a previously straightened and entrenched reach of channel to a more natural, geomorphically stable alignment. This alternative is specifically designed to improve water quality by reducing channel velocities, lowering shear stress, and reconnecting the creek to its floodplain, thereby addressing the root causes of erosion and sediment transport in this reach.

The restored meandered channel increases channel length and allows flows exceeding the bankfull condition to access the floodplain, dissipating energy that is currently concentrated within the channel. Floodplain grading increases storage capacity and promotes sediment deposition during high-flow events, reducing downstream sediment transport. In-stream habitat features such as riffles, pools, and a defined thalweg improve hydraulic diversity and support aquatic life, while natural bank stabilization using brush toe and toewood promotes long-term resilience as vegetation becomes established.

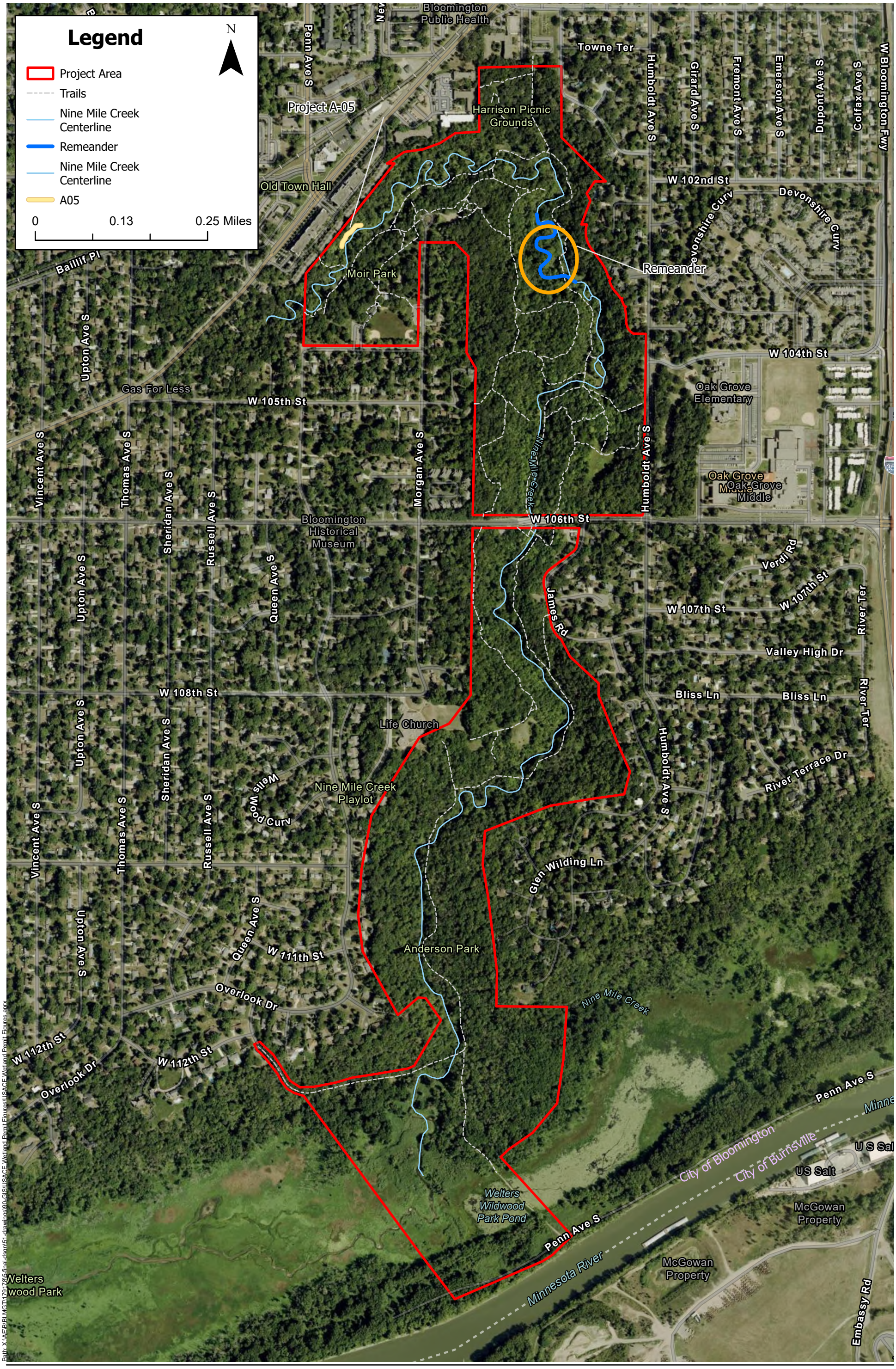
Construction sequencing ensures that flow is maintained during implementation, after which the existing straightened channel will be filled and stabilized. Overall, the remeander will result in a net gain of channel length and volume, reduced erosive forces, increased floodplain connectivity, and improved water quality through sustained reductions in sediment loading and enhanced ecological function.

Summary of Preferred Alternative

Together, the Repair Area A-05 stabilization and Nine Mile Creek remeander represent the least degrading prudent and feasible alternative for the project area. This combined approach prioritizes long-term water quality improvement by addressing active sediment sources, restoring natural hydraulic processes, and improving channel and floodplain function, while also protecting infrastructure and maintaining compliance with no-rise floodplain requirements.

Question 5 - Existing uses and level of water quality necessary to protect uses

Name of surface water/Waterbody	Waterbody Identification Number (AUID)	Use Classification	Existing use	Existing Water Quality
Nine Mile Creek	07020012-809	2Bg, 3, 4A, 4B, 5 and 6	Aquatic life, wildlife habitat, Recreation	Turbidity
Minnesota River	07020012-505	2Bg, 3, 4A, 4B, 5 and 6	Aquatic life, wildlife habitat, Recreation	Fecal coliform
Sylvia Mae Marsh	27-1074-00	2B, 3, 4A, 4B, 5 and 6	Flood prevention, stormwater retention, wildlife habitat	not listed
Unnamed Lake/wetland	27-1075-00	2B, 3, 4A, 4B, 5 and 6	Flood prevention, stormwater retention, wildlife habitat	not listed
Unnamed Lake/wetland	27-1076-00	2B, 3, 4A, 4B, 5 and 6	Flood prevention, stormwater retention, wildlife habitat	not listed
Delineated Wetlands (see attached map)	N/A	2B, 3, 4A, 4B, 5 and 6	Flood prevention, stormwater retention, wildlife habitat	not listed



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Project Number: BLMGT 179178
Print Date: 3/24/2026

Map by: cferguson
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Bloomington, USGS, NRCS, MNDNR, USFWS, USDA

Nine Mile Creek Corridor Renewal Project
Bloomington, Minnesota

ATTACHMENT 4
Project Location and Overview

Attachment 4 - Project location

Monitoring and Management of Discharges

Construction and post-construction activities associated with the Repair Area A-05 embankment stabilization and Nine Mile Creek Remeander will be implemented using measures designed to prevent, minimize, and monitor discharges that could affect water quality. Temporary discharges during construction will be controlled through erosion and sediment control best management practices (BMPs) consistent with MPCA requirements and project-specific permit conditions.

Construction-Phase Monitoring and Controls

During construction, erosion and sediment control measures will be installed prior to ground disturbance and maintained throughout the duration of work. These measures may include silt fence, sediment barriers, stabilized construction entrances, temporary channel diversion measures, and staged construction sequencing to limit exposed soils. In-channel work will be performed during appropriate flow conditions to minimize turbidity, and disturbed areas will be stabilized as soon as practicable.

Visual monitoring of in-stream conditions will be conducted during active construction to identify excessive turbidity, sediment releases, or BMP failures. If elevated turbidity or sediment transport is observed, work practices will be adjusted and additional controls implemented as necessary to prevent further discharge. Construction sequencing for the remeander will maintain flow in the existing channel until the new channel is fully constructed, reducing the potential for uncontrolled discharges.

Post-Construction Water Quality Protection

Following construction, permanent stabilization measures will provide long-term control of discharges and improvements to water quality. At Repair Area A-05, reconstructed embankments armored with riprap, buried toe footings, and established native vegetation will eliminate ongoing sediment inputs from bank failure. At the remeander, restored channel geometry, floodplain connectivity, and in-stream features will reduce velocities and shear stress, promoting sediment deposition within the floodplain rather than downstream transport.

Vegetation establishment will be monitored following construction to ensure successful stabilization of banks, floodplain areas, and filled channel segments. Areas that do not meet vegetation performance expectations will be repaired or reseeded as necessary to ensure long-term erosion control and water-quality protection.

Long-Term Effectiveness

The combined stabilization and restoration measures are designed to function as passive, long-term water-quality controls by eliminating active sediment sources and restoring natural hydraulic and geomorphic processes. By reducing chronic erosion, improving sediment retention, and reconnecting the channel to its floodplain, the project will result in sustained reductions in sediment loading and improvements in overall water quality in Nine Mile Creek.