



Nine Mile Creek Discovery Point
12800 Gerard Drive

Eden Prairie, MN 55346

(952) 835-2078

www.ninemilecreek.org

MEMO

TO: Nine Mile Creek Watershed District Board of Managers
FROM: Randy Anhorn
DATE: May 11, 2020
RE: Edina Streambank Restoration Project Maintenance Plan with the City of Edina

Background

As part of completing the Edina Streambank Restoration Project, staff and the City of Edina have been working a maintenance plan which spells out inspection and reporting schedules, a 50/50 cost-share for agreed upon maintenance and repairs and transfer of the executed private maintenance easements to the city.

Request

Approve the maintenance plan for the Edina Streambank Restoration Project.

Maintenance Plan
Nine Mile Creek Restoration Project
City of Edina & Nine Mile Creek Watershed District
April 2020

The City of Edina (City) has agreed to assume primary responsibility for inspection and maintenance of the Nine Mile Creek Restoration Project (Project). The streambank stabilization measures are shown in the attached as-built drawings of the completed Project (incorporated herein as Exhibit A). This maintenance plan sets out inspection and maintenance procedures that constitute 'routine maintenance,' in accordance with the terms of the March 15, 2017, cooperative agreement (Exhibit B) for the Project between the City and Nine Mile Creek Watershed District.

MAINTENANCE DURING VEGETATION ESTABLISHMENT PERIOD

The Nine Mile Creek Watershed District (District) included a two-year vegetation maintenance and establishment period in the construction contract for the Project. The contract requires regular maintenance and replacement of vegetation during this period. Following the two-year period, the City will assume the inspections and maintenance of the streambank stabilization measures and associated vegetation.

The vegetation maintenance and establishment period for Phase 1 is scheduled to be complete in the fall of 2020; and the maintenance and establishment period for Phase II is scheduled to be complete in the spring of 2021.

At the end of each vegetation maintenance and establishment period, District and City staff will complete a joint inspection of the Project to review the state of the creek and surrounding area(s) and establish baseline conditions. The joint inspection of Phases I and 2 will occur in the spring of 2021.

INSPECTIONS AND MAINTENANCE FOLLOWING VEGETATION ESTABLISHMENT

Streambank Stabilization Measure Inspections

After it assumes routine maintenance responsibilities, the City will conduct an inspection of the Project once every two years. Every fourth year, the City and the District will perform a joint inspection of the Project. In addition, streambank erosion issues often develop following high flow events; therefore the inspection tasks listed below should also be performed by the City following storm events exceeding a 10-year return period for storm events with durations of 12 hours or greater, as defined by Atlas 14 and as recorded at the

National Weather Service station in Chanhassen. These inspections and project maintenance shall occur for 20 years after substantial completion of the Phase II of the Project. (Some property owners have retained the right to revoke access to their properties after a certain term – a minimum of five years.¹ The City’s responsibility to conduct maintenance on any such properties endures only as long as the right to access the property is not revoked.) Either the City or the District may request a modified inspection schedule based on the results of previous inspections.

Inspections will include:

- Inspect the condition of each of the streambank protection locations throughout the Project area. Criteria to note include, but are not limited to, the following:
 - For areas with riprap protection, the City should note:
 - The general condition of the riprap.
 - Displacement of riprap material.
 - For areas with rock vanes and cross vanes for bank protection, the City should note:
 - Displacement of boulders used to construct the vanes.
 - Potential undermining of the vanes due to scour immediately downstream of the vanes.
 - Flow patterns that appear to be eroding around the vane.
 - Any bank erosion within approximately 10 feet of the vane.
 - For areas with root wads and toe wood used for bank protection, the City should note:
 - The general condition of the root wads.
 - Any bank erosion within approximately 10 feet of the root wad.
 - For areas with re-established vegetation, the City should note:
 - The general condition of seeded areas and vegetative plantings.
 - The survival rates of vegetative plantings.
 - The percent cover by grasses and forbs in seeded areas.
 - Intrusion of non-native and/or undesirable vegetation.

¹ The owners, properties and periods after which revocation is possible are: Wolff & Knych, 5300 70th Street West (10 years); Excelsior Arms, 7125 Ohms Lane (five years); International Dairy Queen, 7505 Metro Boulevard (15 years); Chin, 6801 Limerick Lane (10 years); Russell, 6623 Londonderry Drive (10 years).

-
- Document significant bank erosion locations, defined as areas with bare, unvegetated banks greater than approximately three feet tall and with bank angles steeper than approximately 45 degrees.
 - Note any observed changes in the stream flow pattern or direction throughout the Project, and note other locations where bank protection may be required;
 - Examine storm sewer outlets for undermining, blockage and scour at the outlet and erosion;
 - Record location of accumulated debris, downed trees and branches that may adversely redirect the stream flow into the streambanks;
 - Take photographs to document the inspection findings in the preceding inspection tasks.

The inspection results shall be summarized in a brief report as described in the below section - BIENNIAL REPORT.

Streambank Stabilization Measure Maintenance

The City shall be responsible for completing maintenance to address erosion or streambank scour to impact the success of the Project. Typical maintenance activities will be conducted every three years and/or as necessary and include removal of fallen trees that may impede the flow of water, mowing native grass areas to prevent woody species establishment revegetating exposed soils, replacement of boulders for cross vanes, and repair of displaced riprap. Annual maintenance will consist of activities required to ensure that the flow of water is not impeded.

Prior to the commencement of measures needed to repair bank erosion, the City and District will agree on the scope of the work to be completed and a preliminary cost for the work. The City will provide the District with a cost breakdown of work completed and a request for reimbursement. The City will acquire all necessary permits prior to completing the repair work. The City will complete the necessary stabilization measures needed to repair bank erosion, and will document inspections and maintenance in a brief report. The District administrator will be notified and the City will acquire all necessary permits prior to completing the repair work. The District may observe and review work in progress; and notify the City in writing of any areas or improvements observed to be in need of maintenance. Routine maintenance of the Project must include, at a minimum:

- Removal of fallen trees that are causing bank erosion;
- Replacement of cross vane boulders and repair of displaced riprap.
- Grading and bank repair of areas less than 50 linear feet of streambank and require disturbance of less than 50 cubic yards of material.

Vegetation Inspections

Vegetation inspection, maintenance, and performance standards apply to vegetation restoration areas as noted in the as-builts (Exhibit A).

Inspection will include:

- Inspect the condition of each of the stream reaches throughout the Project area. Criteria to note include, but are not limited to, the following:
 - For areas with re-established vegetation, the City should note:
 - The general condition of seeded areas and plantings.
 - The survival rates of plantings including woody trees and shrubs.
 - The percent cover by native grasses and forbs in seeded areas.
 - Intrusion of non-native and/or non-desirable vegetation.

The inspection results shall be summarized in a brief report as described in the below section - BIENIAL REPORT.

Vegetation Maintenance

Maintenance activities will occur every 4-6 weeks during the growing season (May – October) and be overseen by a qualified native restoration ecologist selected by the City and District. A vegetation inspection report for each site will be provided by the City to the District and will include, as direct by the selected ecologist:

- Issues with vegetation establishment such as invasive species encroachment.
- Proposed management activities.
- Schedule of management activities.

The native restoration ecologist may determine the most appropriate technique to achieve performance metrics based on site conditions. Techniques may include mowing, herbicide treatment, supplemental seeding and planting, prescribed burning, or other industry-standard techniques.

Vegetation Performance Standards

- The goal is for restored areas to have 95% vegetative cover, 75% native cover, and less than 10% invasive or noxious weeds present.
- Mowing, when determined to be necessary, will occur when the vegetation reaches a height of approximately 20 inches. Vegetation will be mown down to a height of six to eight inches.

- All vegetation on the MN Noxious Weed List will be managed as per the weed designation category of the list i.e.; eradicate or control. No noxious weed shall be allowed to go to seed at any point. Contractor shall cut, bag, and dispose of any noxious weed that may have gone to seed.
- Only Minnesota-licensed Pesticide Applicators will apply herbicides. The following species are considered unacceptable and shall be managed with herbicide: Garlic Mustard – *Alliaria petiolata*, Buckthorns – *Rhamnus* spp., Honeysuckles – Exotic *Lonicera* spp., Motherwort – *Leonurus cardiac*, Narrowleaf Bittercress – *Cardimine impatiens*, Purple Loosetrife – *Lythrum salicaria*, Cattails, *Typha* spp., Reed Canary Grass – *Phalaris arundinacea*, Smooth Brome – *Bormus inermis*, Crown Vetch-Coronilla varia, Bird’s Foot Trefoil – *Lotus corniculatus*, Yellow Sweet Clover – *Melilotus officinalis*, White Sweet Clover – *Melilotus alba*, Canada Thistle – *Cirsium arvense*, Curly Dock – *Rumex crispus*, Giant Ragweed – *Ambrosia trifida*, Common Ragweed – *Ambrosia artemisiifolia*, Foxtail – *Setaria* spp., Leafy Spurge – *Euphorbia esula*, Japanese Knotweed – *Polygonum cuspidatum*, Mulberry – *Morus alba*.
- Re-seeding will occur in areas of open ground 25 square feet or larger. Areas continually impacted by maintenance activities (traffic areas) will not be reseeded, but weeds will be managed.
- Prescribed burning shall comply with state and local notification requirements.
- In consultation with the District, the City will provide additional woody trees and shrubs as necessary.

BIENNIAL REPORT

A brief Project inspection and maintenance report will be submitted to the District on or before January 31 of each odd-numbered year, starting in 2023. The report will contain the following information:

- A summary of the inspection, including the presence or absence of any and all items specifically mentioned in the Streambank Stabilization Measures Inspections and Vegetation Inspections sections above.
- A record of the location and quantity of any debris or fallen trees removed from Nine Mile Creek.
- List the type and quantities of materials used to repair bank protection at any repair locations stabilized.
- A record of the location, date and activity for vegetation maintenance including all herbicide applications as required by State law.
- Describe any maintenance activities completed for the previous 24-month period ending December 31, including dates and actions.
- A tabulation of costs for all labor, materials, and equipment involved in any maintenance activities for the previous 24-month period ending December 31.

MAINTENANCE PLAN TERM

Final plantings for both Phase I and Phase II of the Project were completed in 2018, so final inspection and maintenance activities are expected to end in 2038. In 2028, the parties will jointly assess and, as necessary, adjust the terms of this Maintenance Plan.

FINANCIAL RESPONSIBILITY

On receipt of the biennial report described above and documentation of the costs of inspection, maintenance and repair work conducted in accordance with this Maintenance Plan, NMCWD will reimburse the City 50 percent of such undisputed costs within 35 days.

EXHIBIT A

Nine Mile Creek Streambank Restoration Project
As-Built Drawings

EXHIBIT B
Cooperative Agreement
Nine Mile Creek Restoration Project