# DEPARTMENT OF NATURAL RESOURCES

## RECORD OF DECISION

**In the Matter of the Determination of the Need for an Environmental Impact Statement for the Gilmore Creek Stream Restoration Project in St. Louis County, Minnesota**

**FINDINGS OF FACT, CONCLUSIONS, AND ORDER**

## FINDINGS OF FACT

1. The proposed project is the result of a restoration plan developed to provide compensatory stream mitigation required by the U.S. Army Corps of Engineers as part of Clean Water Act Section 404 authorization for Northshore Mining Company's (NSM's) Peter Mitchell mine near Babbitt, MN. The MPCA also requires stream mitigation as part of the Clean Water Act Section 401 certification, which is needed for the 404 authorization. The loss of an unnamed stream at NSM's Babbitt mine will hereafter be referred to as "a/the separate action."

2. The proposed project would restore approximately 2,000 feet of an offsite degraded creek, Gilmore Creek, to its original plan and profile; reestablishing natural stream processes, improving floodplain connectivity, and stabilizing hydrology. The proposed project would be carried out by Northshore Mining Company.

3. The proposed project requires preparation of a State Environmental Assessment Worksheet (EAW) according to the rules of the Minnesota Environmental Quality Board (EQB); *Minnesota Rules,* chapter 4410.4300, Subp. 26, Stream Diversion; for a diversion, realignment, or channelization of any designated trout stream, or affecting greater than 500 feet of natural watercourse with a total drainage area of ten or more square miles.

4. The EQB transferred the Responsible Governmental Unit (RGU) duties for preparation and review of environmental documents related to the Gilmore Creek Stream Restoration project from St. Louis County to the Minnesota Department of Natural Resources (MDNR) on June 12, 2012, pursuant to *Minnesota Rules,* chapter 4410.0500, Subp. 6.

5. The MDNR prepared an EAW for the proposed project, pursuant to *Minnesota Rules,* chapter 4410.4300, Subp. 27.

6. The EAW is incorporated by reference into this Record of Decision on the Determination of Need for an Environmental Impact Statement (EIS).

7. The EAW was filed with the EQB and a notice of its availability was published in the EQB *Monitor* on July 8, 2013. A copy of the EAW was sent to all persons on the EQB Distribution List, to those persons known by MDNR to be interested in the proposed project, and to those persons requesting a copy. A press release announcing the availability of the EAW was sent to newspapers and radio and television stations statewide. Copies of the EAW were also available for public review and inspection at the MDNR Northeast Region Headquarters, the MDNR Library, the Minneapolis Public Library, Duluth Public Library, Cook Public Library, and the Chisholm Public Library. The EAW was also made available to the public via posting on MDNR's website.

8. The 30-day EAW public review and comment period began July 8, 2013 and ended August 7, 2013 pursuant to *Minnesota Rules*, chapter 4410.1600. The opportunity was provided to submit written comments on the EAW to the MDNR by U.S. Mail, by facsimile, or electronically.

9. During the 30-day EAW public review and comment period, the MDNR received four comment letters from the following agencies and individuals:

    Minnesota Pollution Control Agency (MPCA); Karen Kromar
    Minnesota Historical Society, State Historic Preservation Office (SHPO); Mary Ann Heidemann
    Dennis Good, member of the public
    David Holmbeck, member of the public

    Comments are included in the Record of Decision as Attachment A. Each comment submitted is summarized with MDNR's response following each comment.

10. The MPCA comment letter stated they have no comment at this time. The letter also reminded MDNR that it is the responsibility of the project proposer to secure any required permits and to comply with any requisite permit conditions.

    RESPONSE: The MDNR appreciates the time MPCA staff spent reviewing the Gilmore Creek Stream Restoration Project and will provide this reminder to the Proposer.

11. The SHPO comment letter suggested that an archaeological survey be completed.

    RESPONSE: As identified by the Minnesota Historical Society in Attachment C of the EAW, there are no known archaeological sites or historic structures within the proposed project area. The recommendation to complete an archaeological survey is a standard SHPO comment that accompanies nearly all proposed projects along water body edges, as the likelihood of discovering artifacts is higher near water bodies. The MDNR will provide this information to the proposer and permit authority. The MDNR appreciates the time SHPO staff spent reviewing and commenting on the EAW to ensure that the proposed project does not affect cultural and historic resources.

12. Several comments were received indicating that the EAW did not assess the degree to which the proposed project mitigates the effects of NSM's activities. (*Good*, *Holmbeck*)

    RESPONSE: The comments do not address the accuracy and completeness of information, potential impacts that warrant further investigation, or the need for an EIS for this project, but rather state that the project is not adequate mitigation for environmental effects from a separate action that is not part of this environmental review (as described in Findings of Fact No. 1). As RGU for the EAW, MDNR is mandated to evaluate the environmental effects of the proposed project, not whether or not the proposed project meets other regulatory requirements or mitigates the environmental effects of a separate action. The MDNR will provide this information to the U.S. Army Corps of Engineers and MPCA for their consideration as part of their regulatory authority of the separate action.

13. The commenter speculates that the reference and impact sites contain more fish than the mitigation site (i.e., proposed project site) and that the biological monitoring was conducted outside of the MPCA's biological monitoring index period (June-Sept). (*Good*)

    RESPONSE: More fish were found at the mitigation site (i.e., proposed project site) in each of the two surveys than were found in the impact or reference sites. This finding alone does not provide an indication of the relative quality of each site. It can be surmised that the biota represented across the three sites were typical for streams of these types, though probably in lower abundance than would be seen during the normal index period. It is also possible that additional species would have been collected from these streams if sampling had occurred in the summer months.

    The commenter is correct that the biological monitoring was conducted outside of the MPCA's biological monitoring index period, which ideally would occur during the months of June through September. MPCA performed the monitoring outside of the index period so that data could be collected from the impact site prior to its destruction. Data was collected at the mitigation (i.e., proposed project site) and reference sites at the same time so that the information would be comparable.

    When the MPCA rated the quality of the sites, they used biological survey data along with the collection of quantitative habitat information and water chemistry data. Because biological sampling was collected outside of the index period, MPCA decided to use the habitat data as the key piece of environmental data to consider when rating site quality. The biological data suggests that both tolerant and sensitive fish and invertebrates were using these streams during a portion of their life cycles, confirming that the habitat and water chemistry were at least sufficient.

The proposed project is intended to have Gilmore Creek function as a natural stable stream that would potentially be more biologically productive and maintain the diversity of habitats important to aquatic organisms and wildlife.

This comment appears to be directed at the question of whether or not the site needs restoration and does not identify potential environmental effects of the proposed project. The EAW has identified potential environmental effects to fisheries. The MDNR will provide this comment to the U.S. Army Corps of Engineers and MPCA for their consideration as part of their regulatory authority of the separate action.

14. Two comments letters from members of the public questioned the lack of public involvement surrounding the proposed project. (*Good, Holmbeck*)

    RESPONSE: The MDNR Environmental Policy and Review Unit has complied with all public involvement requirements to-date regarding the Gilmore Creek Stream Restoration EAW, as outlined in *Minnesota Rules,* chapter 4410. It is not standard operating procedure for MDNR to host public meetings when developing an EAW. MDNR does not hold responsibility for or authority over, what other agencies and organizations choose to do for public involvement. The North St. Louis County Soil and Water Conservation District has contacted local area township representatives and upstream and downstream landowners.

15. Two comments letters from members of the public requested a more detailed explanation of where and how Gilmore Creek is "disconnected from the floodplain". (*Good, Holmbeck*)

    RESPONSE: Gilmore Creek has been ditched from the upstream end of the proposed project site to the downstream end. Gilmore Creek is disconnected from the floodplain because the channel is deeply incised, in some places four to six feet below the adjacent ground level, and an estimated one to two feet below the channel's historical depth, with steep, abrupt banks. Under these conditions, water flowing in Gilmore Creek cannot reach the adjacent wetlands/floodplain except in extreme rain events.

    This comment appears to be directed at the question of whether or not the site needs restoration and does not identify potential environmental effects of the proposed project.

16. The commenter is concerned about future stages of development. (*Good*)

    RESPONSE: The reference to "if continued efforts were focused on Gilmore Creek…" states that this proposed project only restores a portion of Gilmore Creek, and that there are more reaches of the creek that could be restored. Although there have been discussions of future restoration, no basis of

expectation has been laid out for future development plans; therefore, there are no phased or connected actions that need to be evaluated with this proposal.

17. The commenter states that the Northern Pike spawning strategy of the proposed project contradicts current MDNR policy, which is to not focus on Northern Pike reproduction. (*Good*)

    RESPONSE: The goal of the Gilmore Creek Stream Restoration does not focus on Northern Pike spawning. The goals of the proposed project are outlined in Item 6c, located on page 7 of the EAW. The possibility of increasing Northern Pike spawning as a result of the project does exist, although it cannot be guaranteed. MDNR Fisheries does not have a policy that prohibits focusing on Northern Pike reproduction. Generally, MDNR Fisheries has a goal of managing for self-sustaining fisheries, which would require some level of Northern Pike reproduction. MDNR Fisheries has not expressed concern about the potential effects of Northern Pike. If information is developed that indicates that Northern Pike reproduction is unbalanced (too high or too low), MDNR can consider corrective treatment. The MDNR will consider the possibility of increased Northern Pike as part of the conclusions and order included in this document.

18. Two comments were received stating that beaver activity and beaver control are not discussed in the EAW. (*Good, Holmbeck*)

    RESPONSE: There has been no evidence of beaver activity since the initial mitigation site (i.e., proposed project site) visit in November 2011, but there is evidence of past beaver activity. Beaver are a natural component of stream ecosystems. The proposed project is unlikely to adversely affect beavers and beaver activity. During construction, beaver would likely avoid the area.

    Beaver activity in the construction area after construction, but before full site stabilization, may create additional maintenance needs. The U.S. Army Corps of Engineers Clean Water Act Section 404 permit outlines monitoring requirements and states the NSM will execute annual monitoring of the project for a minimum of five years. NSM has stated that monitoring and management of the restored stream would be conducted for a period of eight years. The stream mitigation plan does not call out beaver control, but NSM believes that any problem associated with beavers would be identified and responded to under the current monitoring and performance standards.

    Beaver activity in the area after site stabilization (i.e., vegetation established) is not expected to result in additional environmental effects from the project, nor would additional site or beaver management be necessary. The restoration plan includes the planting of trees that are not normally associated with beaver activity. The design dimensions also account for the expected dense vegetation and beaver impact found at this site by mimicking the channel metrics for a ‘stable’ channel

where dense vegetation and beaver exist. It is not anticipated that beaver would negatively impact the restoration.

19. The commenter states that information is missing on the existing width-to-depth ratios of the project reach, how much the existing channel is entrenched and how the channel is down-cut from pre-ditching conditions. (*Holmbeck*)

    RESPONSE: The commenter is correct that information is missing on the existing width-to-depth ratio of the project. The width-to-depth ratio is equal to the ratio of bankfull width over bankfull depth. Existing width-to-depth ratios were calculated at four points along the project reach and are as follows:

    STA 7+10: w/d ratio: 6.7
    STA 10+61: w/d ratio: 6.8
    STA 12+87 w/d ratio: 5.7
    STA 16+90 w/d ratio: 5.7

    As identified in EAW Item No. 12, the existing channel is entrenched (i.e., incised) approximately four to six feet below the adjacent ground levels, and an estimated one to two feet below the historical channel. There is no record of how deeply entrenched the channel was prior to ditching; however, channelization of streams typically results in deeper entrenchment of the stream in the channel.

    This comment appears to be directed at the question of whether or not the site needs restoration. This information of existing conditions does not provide information for consideration of potential environmental effects of the proposed project.

20. The commenter questions whether or not the historical gradient/slope of Gilmore Creek has supported or will support the riffle to pool sequence frequency as shown in Figure 7 of the EAW. (*Holmbeck*)

    RESPONSE: A reference was chosen with similar valley slopes to the mitigation site therefore the riffle pool sequencing applied to the mitigation site design should be appropriate.

    This comment appears to be directed at the question of whether or not the site needs restoration and does not identify potential environmental effects of the proposed project.

21. The commenter states that insufficient detail was provided about the "Regional Curve" on which the proposed channel dimensions were described. (*Holmbeck*)

    RESPONSE: It was determined from the reference reach data that the watershed in question matched fairly well with the eastern Minnesota regional curve in terms of bankfull cross sectional area versus watershed area. The channel dimensions (i.e., cross-sectional area, channel width, etc.) and discharge all fall within the

range of a naturally 'stable' channel for this region of the State. The design dimensions also account for the expected dense vegetation and beaver impact found at this site by mimicking the channel metrics for a 'stable' channel where dense vegetation and beaver exist. The design discharge is 40 cubic feet per second (CFS) and based on the U.S. Geological Survey (USGS) regression equation, using a 1.5 year recurrence interval, for a six square mile drainage area. This derived discharge was validated using various discharge equations which produced a range of discharges between 31 CFS to 106 CFS. This range of discharges is common due to many variables and computation methods but does include the USGS discharge of 40 CFS. Once constructed and vegetated, this design is expected to convey its contributing water and sediment without changing its form (i.e., channel dimension) over time.

This comment appears to be directed at the question of whether or not the site needs restoration and does not identify potential environmental effects of the proposed project.

22. The commenter states that the project has potential to flood or increase flooding on neighboring lands. (*Holmbeck*)

    RESPONSE: One of the goals of the proposed project is to reconnect Gilmore Creek to the floodplain and act as a more natural system. Connecting Gilmore Creek to the floodplain would reduce downstream flooding impacts. Upstream water in the creek would be slowed and could overflow the bank. The nearest residences to the project are approximately 1,100 feet away. It is not anticipated that flooding would negatively impact neighboring lands.

23. The commenter questions why the DNR as RGU for the EAW was not consulted in the choice of Gilmore Creek. (*Holmbeck*)

    RESPONSE: MDNR representatives from the Divisions of Fish and Wildlife, Forestry and Ecological and Water Resources were consulted, allowed a chance to provide feedback on the project, and invited to visit the proposed site. The consulted group of MDNR area team staff expressed general support of the project.

    The comment does not identify potential environmental effects of the proposed project. As RGU for the EAW, MDNR is mandated to evaluate the environmental effects of the proposed project.

24. The commenter states that no statistical analyses were done to show the difference in biota among the mitigation site (i.e., proposed project site), reference site, and the unnamed tributary to the Dunka River, and therefore, before and after benefits could merely be perceived as chance. (*Holmbeck*)

RESPONSE: The commenter is not commenting on environmental effects of the project, as it appears that they are questioning the benefits of the proposed project as appropriate mitigation for a separate action that is not part of this environmental review. As RGU for the EAW, MDNR is mandated to evaluate the environmental effects of the proposed project, not whether or not the proposed project meets other regulatory requirements or mitigates the environmental effects of a separate action. The MDNR will provide this information on to the U.S. Army Corps of Engineers and MPCA for their consideration as part of their regulatory authority of the separate action.

25. The commenter has concerns about the use of chemicals to control reed canary grass. (*Holmbeck*)

RESPONSE: The use of chemicals to control reed canary grass is not a potential conflict. As stated in EAW Item No. 11a on page 11 of the EAW, "Chemical treatment should be applied before work is conducted, unless the patches are big. Since the patches of reed canary grass at the project location are considered large, other methods of invasive species minimization must be used." Specific guidelines are required for use of pesticides on state lands.

MDNR-recommended mechanical methods of control of reed canary grass include consecutive annual burns, spring or fall; mowing mid-June and October to reduce seed and encourage native species; and frequent cultivation followed by fall seeding.

26. The commenter suggests alternative project sites and mitigation techniques. (*Holmbeck*)

RESPONSE: The commenter is suggesting alternative mitigation project sites and mitigation techniques for offsite mining impacts. As RGU for the EAW, MDNR is mandated to evaluate the environmental effects of the proposed project, not whether or not the proposed project meets other regulatory requirements or mitigates the environmental effects of a separate action. The State EAW process does not evaluate project alternatives. If the project is determined to have potentially significant environmental effects, the MDNR will order an EIS and then evaluate potential project alternatives. The MDNR will provide the suggested alternative mitigation project sites and mitigation techniques to the proposer and mitigation authority.

27. Based upon the information contained in the EAW the MDNR has identified the following potential environmental effects associated with the project:

    a. Construction activities
    b. Fish, wildlife, and ecologically sensitive resources
    c. Invasive species
    d. Physical impacts to water resources
    e. Water use

f. Erosion and sedimentation
g. Water quality
h. Cumulative effects

Each of these environmental effects is discussed in more detail below.

**a. Construction activities.** This topic was addressed in EAW Item No. 6, EAW Item No. 11, EAW Item No. 12, EAW Item No. 16, EAW Item No. 17, EAW Item No. 20, EAW Item No. 22, and EAW Item No. 24.

The proposed Gilmore Creek restoration plan would utilize existing historical meanders and additional excavation to reestablish a channel alignment that is longer and more sinuous than the existing, channelized alignment.

The project is proposed entirely on Gilmore Creek within a parcel containing 160 acres owned by the State of Minnesota and managed by MDNR Division of Forestry. It is anticipated that a maximum of five acres (80'-150' width over a 2,000' length) would be disturbed within the project boundaries including excavated areas and locations of temporary stockpiles. The construction areas would be accessed from the south end of the site with the area of high ground within the south construction limits utilized for equipment and material staging.

Project construction is expected to take approximately three to four weeks, and is proposed for construction during late-summer low-flow conditions. However, it may need to be constructed in the winter due to the wet, soft soil conditions in the project area. Stream restoration construction would be sequenced to limit the area of open soil disturbance during construction, typically completing construction of each component of the project by the end of each day.

Construction would generally be started from the upstream end working downstream because the base level of the stream would be raised, thereby raising the water level upstream. The primary exception is that a rock riffle structure planned at the downstream end of the project would be constructed first to capture sediment during construction. Excavation of new channel sections would not be connected to the flowing stream until all vegetative restoration features are completed. Stream reaches that are planned to be filled would not be completed until that reach is disconnected from the active, flowing stream. Where the restoration construction frequently crosses the existing channel, the contractor would be required to pump the flow around the active work area until all restoration and site stabilization is completed within that reach. Pumped discharges would be discharged downstream utilizing a flat flow-spreading device (e.g., geotextile sheet with rock) to dissipate the flow velocities and discharge over a larger area to minimize erosion in the channel.

Perimeter controls are not planned for the entire construction limits, only around temporary soil storage areas. All soil storage areas would be confined within the

construction limits. Fill would be obtained by using the native, existing material removed by creating the new channel. It is expected that no off-site fill material would be needed other than rock.

The new stream meanders that are not coincident with the existing channel would be excavated first and maintained offline from the existing flows. After construction work within the planned meanders is completed and stabilized, those meanders would be sequentially reconnected to Gilmore Creek when fully stabilized. Soil excavated within the floodplain and for establishment of the new stream meanders would be utilized to fill the existing channel to the proposed floodplain elevations, thereby maintaining those areas as wetland. With the reestablishment of each meander connection, the adjacent, existing stream segment would be abandoned by filling the channel downstream of the connection point and proceeding with the restoration plans in each of those segments after streamflow has ceased. Grade control stream riffles would be constructed at the upstream end of the project and downstream of the project to establish and maintain the thalweg through the project area and prevent headcutting within and upstream of the project.

Approximately 19 riffle/pools would be constructed/established at the bends in the restored stream channel. Pool edges would be stabilized with logs and branches held in place by excavated fill and covered by approximately one foot of natural sod obtained from the construction site. The logs and branches would protect the streambank from erosion and promote scour along the toe of the bank to create habitats for fish.

Environmental effects from construction activities that would only occur during construction operations, and are therefore temporary in nature, include the following: Petroleum fuels, oils, and lubricants would be used by earthmoving equipment during construction of the proposed project. Accidental fuel spillage from tanks or during refueling, and leakage reaching the ground may occur, and is limited to construction machinery. The NPDES Construction Site permit requires a site specific Stormwater Pollution Prevention Plan (SWPPP) to be completed for construction. This SWPPP is required to include pollution prevention management measures for solid waste and hazardous material spills that occur during construction. Refueling would be conducted away from surface waters and equipment would be regularly inspected and repaired to prevent inadvertent loss of fuels, oils, or other hazardous fluids. Any spills would be reported to the Minnesota Pollution Control Agency, the Minnesota Duty Officer, and St. Louis County.

Air emissions would be generated by the use of construction equipment, including an excavator, dump truck, bull dozer, or skid-steer and other construction vehicles transporting construction materials or involved in work at the site. These emissions would be local in nature and minimal effects are anticipated. Also, equipment would not all be in operation at the project site at the same time.

The use of heavy equipment including an excavator, skid-steer, bulldozer, and dump truck during construction would generate temporary noise, and potentially dust. Construction noise would be generated by a diesel excavator. Some dust may result, but this site is generally very moist due to the close proximity of groundwater, so dust during construction should be reduced. Typical metal on metal, rock on metal, back-up warning beepers, and diesel engines would be the nature of noise effects during construction. Construction times would be limited to daylight hours during a three to four week construction period. There are no known sensitive receptors in the vicinity of this site. The nearest residences to the proposed project area are approximately 1,100 feet away.

**b. Fish, wildlife, and ecologically sensitive areas.** This topic was addressed in Item No. 11a of the EAW.

At a landscape scale, Quaking aspen is the dominant tree species in the Gilmore Creek project area. The Ecological Classification System Subsection consists of three primary habitats, including Forest-Upland Deciduous (Aspen), Forest-Lowland Coniferous, and Shrub/Woodland-Upland (Jack pine woodland). The floodplain within the project area is currently dominated by reed canary grass (*Phalaris arundinacea*), a MDNR listed invasive species.

The Natural Heritage Information System (NHIS) was referenced and no known occurrences of rare features were found within one mile of the proposed project area boundary. MPCA staff characterized the aquatic habitat of the proposed project area in the April 2012 Northshore Mining Expansion and Mitigation Stream Inventory Report. The MPCA biologists found poor to fair habitat conditions in the proposed project area. Macroinvertebrates were collected from undercut banks and from woody debris. The April 2012 MPCA survey identified 36 unique taxa, 96-percent of the taxa identified were insects, primarily flies (Diptera), but also mayflies (Ephemeroptera) and caddisflies (Trichoptera). The remaining 4-percent of the species found were non-insect species, including fingernail clams, crayfish and snails. Species that are sensitive to habitat stressors, including mayfly, caddisfly and chironomids, made up approximately 29-percent of the taxa observed.

Although current conditions are poor to fair habitat for aquatic organisms, the possibility exists for direct impacts from in-stream construction activities. The temporary impacts from operating construction equipment, such as increased levels of noise and air pollution, would affect behavior and movement of local wildlife. The project's proposed sedimentation and erosion control measures, as well as the short construction period and planned sequencing of activities, would minimize impacts to downstream fish and wildlife. Disturbances to resting or nesting wildlife could increase, potentially causing some animals to leave the project area. Wildlife that can adapt to human presence would likely continue to

use the area. The overall condition of the stream for supporting wildlife should remain relatively intact, or be improved.

A positive effect of the proposed project is that the biological diversity and species abundance would likely increase in Gilmore Creek from an increase in a diversity of habitats. Naturally functioning, stable stream systems promote the diversity and availability of habitats. The project is designed to enhance the natural ecological function of Gilmore Creek and improve the habitat for fish and wildlife species. The proposed project is intended to have Gilmore Creek function as a natural stable stream to not just reduce sediment and reconnect floodplains, but also to be more biologically productive and maintain the diversity of habitats important to aquatic organisms and wildlife.

Planted tamarack and spruce trees would enhance the diversity of vegetation and habitats for wildlife, and in the future would provide shade to the stream to maintain cool temperatures required by many aquatic organisms.

**c. Invasive species.** This topic was addressed in Item No. 11b of the EAW.

The floodplain within the proposed project area is currently dominated by reed canary grass (*Phalaris arundinacea*), a MDNR listed invasive species. No other aquatic or terrestrial invasive species have been documented in the project area. Reed canary grass is a major threat to natural wetlands. It's thick, mat-like root structure, called rhizomes, make it difficult for other species to establish, thus creating a monoculture of grass. Invasion of reed canary grass is associated with disturbances, such as ditch building, stream channeling, sedimentation, and intentional planting. Research suggests the most effective method of eradication is applying a chemical treatment late in the fall. However, since the patches are big, other methods of invasive species control must be used.

The contractor would ensure that equipment brought onto the site is cleaned prior to entering the site to prevent introducing additional non-native or invasive species. When possible, the contractor would work first in uninfested sections of the work zone, transitioning into infested sites. Any soil removed from the site would not contain sod that may contain reed canary grass to prevent the spread elsewhere. Prior to removing equipment from the site, the contractor would clean all equipment to avoid the spread of invasive species seed elsewhere. The contractor would also inspect the site daily for invasive plants that are germinating from contaminated soil that was washed off. It is best to treat infestations quickly after their presence has been detected. All seed and mulch used on the project would be certified weed free. All disturbed, open soil areas within the project area, but outside of the streambed, would be seeded with a cover crop and native seed mix within seven days of completion of work to prevent the establishment of invasive species. Tree planting would occur after the flow is directed to the new channel. Any soil or rock material brought onto the site would be free of weed seeds. Ongoing monitoring and management of invasives would also be conducted.

The project would improve conditions for native species in the adjacent floodplain. The existing reed canary grass monoculture would be replaced by a native grass and forb mixture that is better forage for wildlife, and has a better root structure for stabilizing streambanks. Planted tamarack and spruce would enhance the diversity of vegetation and habitats for wildlife, and in the future would provide shade to the stream to maintain cool temperatures.

**d. Physical impacts on water resources**. This topic was addressed in Item No. 12 and Item No. 16 of the EAW.

The length of the existing channel in the restoration reach is 1,384 feet. The proposed channel length for this reach is 2,004 feet with a planned sinuosity of 1.4. Most of the additional length would be achieved by directing the restored channel to historical and new meanders that were cut off when Gilmore Creek was straightened. The elevation of the new stream bed would be approximately one to two feet higher than the existing stream bed elevation and would be established by installing grade-control rock riffles within the channel at the upstream and downstream ends of the project and at three riffle sections in between. The new channel would generally have a bankfull width of approximately 13 feet wide.

Approximately 19 riffle/pools would be constructed/established at the bends in the restored stream channel. Pools would generally be four feet deep on the outside of the bend rising at about a 3H:1V slope to the inside of the bend.

The majority of the proposed construction activities would not take place in the actively-flowing stream. Two exceptions to this would occur when the riffles at the beginning and end of the project area are constructed, and when a newly-constructed stream meander is ready to be re-connected to the creek. In these instances, there would be a brief need to perform in-water work. Portions of the new channel would be constructed within portions of the old/remnant stream channel. Riffles would be added in these areas. Flow would be pumped around the active channel during construction of these riffle areas.

The overall soil excavation and fill quantities are expected to be balanced on the site. In general, excavated soils would either be utilized to fill portions of the existing channel or sod mats would be utilized in stabilizing the new streambank slopes. If excess soil is generated during the project, it would be placed in an upland location and would be seeded to stabilize the soils. The project would require that gravel and rock be brought in for the riffles. Pool edges would be stabilized with logs and branches held in place by excavated fill and covered by approximately one foot of natural sod obtained from the construction site. The logs and branches would protect the streambank from erosion and promote scour along the toe of the bank to create habitats for fish.

There are 12 wetland basins within 1,000 feet of the proposed project area. The total area of these wetlands is approximately 88 acres. The proposed project construction area lies within wetlands immediately adjacent to the existing channel. As such, temporary wetland impacts would occur as a result of construction activities. These activities include excavating a new channel, filling the existing channel, material stockpiling, grading, and movement of construction equipment and could result in up to 3.4 acres of temporary wetland impact. Project construction would disturb floodplain wetland adjacent to the Gilmore Creek, primarily as a result of shallow scraping of floodplain soils and excavation of the new channel. All disturbed floodplain wetlands would be seeded with a native wet meadow seed mix.

The stream restoration would also restore the natural hydrologic regime to approximately seven acres of floodplain wetland along Gilmore Creek. Connecting Gilmore Creek to the floodplain and allowing it to flood would reduce downstream flooding impacts. Upstream water in the creek would be slowed and could overflow the bank. No permanent wetland impacts are anticipated.

**e. Water use.** This topic was addressed in Item No. 13 of the EAW.

During construction, at locations where the restoration frequently crosses the existing channel, the contractor would be required to temporarily pump the flow around the active work area until all restoration and site stabilization is completed within that reach. Pumped discharges would be discharged downstream utilizing a flat flow-spreading device (e.g., geotextile sheet with rock) to dissipate the flow velocities and discharge over a larger area to minimize erosion in the channel. The anticipated MDNR Public Water Permit would include a provision that pump intake(s) be screened to preclude entrapping animals; and that screening is practical and a typical best management practice (BMP) for pumping intakes.

**f. Erosion and sedimentation.** This topic was addressed in Item No. 16 of the EAW.

Project construction would require disturbing soils and excavation or placement of soils and rock in direct contact with flowing water, resulting in soil erosion and suspension of sediment in the stream. Project construction methods and sequencing would be planned to minimize the potential for erosion and downstream sedimentation to the extent practicable. The overall construction is planned during the summer low flow period when the potential for erosion and sedimentation are reduced.

Construction methods would include measures to limit erosion and disturbed areas. A rock riffle structure is planned at the downstream end of the project to capture sediment that may be generated during construction and limit downstream impacts. Sediment levels in the downstream filter dike/riffle structure would be monitored throughout the project and would be cleaned out before sediment

overtops the structure. Any temporary soil stockpiles that would not be utilized within three days of placement would be protected from erosion and sedimentation by placing silt fence around the stockpile.

Down-gradient perimeter control would contain sediment, and the new channels would act as sediment basins until they are connected to flow. Soil stockpiles would be contained by perimeter control, such as silt fence, rock or wood-chip wattles, and would be temporarily stabilized with hydromulch and seeded when no longer being actively worked. All disturbed areas within the project boundary would be seeded with a cover crop and native seed mix within seven days or less of completion of work to provide cover and root structure. Outside bends of some stream banks would also be planted with live stakes of red osier dogwood or willow after new channels are excavated.

The majority of the proposed construction activities would not take place in the actively flowing stream. Two exceptions to this would occur when the riffles at the beginning and end of the project area are constructed, and when a newly constructed stream meander is ready to be reconnected to the creek. In these instances, there would be a brief need to perform in-water work. Also, portions of the new channel would be constructed within portions of the old/remnant stream channel. Riffles would be added in these areas. Flow would be temporarily pumped around the active channel during construction of these riffle areas. Excavation of new channel sections would not be connected to the flowing stream until all vegetative restoration features are installed.

A Stormwater Pollution Prevention Plan (SWPPP) would be developed and submitted to the MPCA following the environmental review process as part of the National Pollution Discharge Elimination System (NPDES) Permit administered by the MPCA. The SWPPP would contain details of measures to be used for erosion and sediment control during project construction.

**g. Water quality.** This topic was discussed in Item No. 17 of the EAW.

Project construction would temporarily remove vegetation and disturb soils, creating the potential for erosion and sedimentation of Gilmore Creek that may increase turbidity and sediment deposition in downstream reaches. Runoff from the site flows into Gilmore Creek. Gilmore Creek flows into the Sturgeon River which is currently listed as impaired for mercury, causing a fish consumption advisory. The proposed project would not alter atmospheric mercury deposition within the watershed, nor would it create a point source of mercury. Therefore, the proposed restoration project would not contribute to the current mercury impairment in the Sturgeon River.

Additional sediment load during construction would be mitigated by creating the downstream connection between the existing and restored channel segments prior to the upstream connection. A rock riffle structure would be placed at the

downstream end of the project to capture sediment that may be generated during construction; this structure would be monitored regularly and cleaned out as need to avoid downstream impacts. Best management practices, including sequencing construction to limit exposed soil area, would be implemented during construction to further minimize erosion and sedimentation affects. Temporary sediment impacts are anticipated to be localized and would not affect water quality in downstream reaches of Gilmore Creek or in the Sturgeon River.

A Stormwater Pollution Prevention Plan (SWPPP) would be developed and submitted to the MPCA following the environmental review process as part of the NPDES Permit administered by the MPCA. The SWPPP would include BMPs to limit soil erosion.

Due to the nature of the project, water quality parameters are anticipated to improve. Better connectivity with adjacent emergent wetlands would allow nutrients found in runoff to be deposited before they reach the channel, thereby reducing nutrient loading into the channel. Additionally, re-meandering the channel and providing better floodplain connectivity would reduce channel velocity during periods of high flows, in turn reducing sediment loads and the potential for the channel to become incised. Monitoring of the Gilmore Creek restoration would provide water chemistry data to document changes in water quality once the restoration is completed.

**h. Cumulative effects.** This topic was addressed in Item No. 29 of the EAW.

The main potential effect from this project may be the short-term introduction of eroded materials into downstream areas during construction causing temporary water quality effects. Eroded materials from this project site could combine with material contributed in stormwater and material eroded from streambank erosion at other sites in the watershed to degrade habitat conditions in the Gilmore Creek. Effects on downstream receiving waters due to erosion during construction of this project would be minimized as a result of erosion control practices being implemented. Stream channel design and habitat features would be constructed to also minimize erosion potential.

In locations where the restoration construction frequently crosses the existing channel, the contractor would be required to temporarily pump the flow around the active work area until all restoration and site stabilization is completed within that reach. The possibility of erosion resulting from water discharged from the reconstruction project is likely to occur. Pumped discharges would be discharged downstream utilizing a flat flow-spreading device (e.g., geotextile sheet with rock) to dissipate the flow velocities and discharge over a larger area to minimize erosion in the channel. The anticipated MDNR Public Water Permit would include a provision that pump intake(s) be screened to preclude entrapping animals; and that screening is practical and a typical BMP for pumping intakes.

Cumulative environmental effects for future projects are assessed by evaluating

the effect on the environment resulting from the incremental effects of the project under review plus similar effects from certain future projects that overlap spatially or temporally with the proposed project.

Consultation with St. Louis County Department of Planning and Community Development and with MDNR Division of Forestry indicates that there are no known projects in the Gilmore Creek watershed that are currently underway or planned in the foreseeable future that would have impacts on the Creek.

28. The MDNR requested and was granted a 15-day extension for making a decision on the needs for an EIS as provided under the provision of *Minnesota Rules*, chapter 4410.1700 Subp. 2.b.

29. The following permits and approvals are needed for the project:

| Type of government | Type of application | Status |
|---|---|---|
| MDNR | Public Waters Work Permit | Application to be submitted |
| MDNR | Dewatering Permit | Application to be submitted if dewatering becomes necessary |
| MDNR | Wetland Conservation Act | If needed |
| MPCA | NPDES General Construction Stormwater Permit | Application to be submitted |
| U.S. Army Corps of Engineers | Clean Water Act Section 404 | Existing permit to be amended |
| MPCA | Clean Water Act Section 401 | Existing permit to be amended |

## CONCLUSIONS

1. The Minnesota Environmental Review Program Rules, *Minnesota Rules*, chapter 4410.1700, subparts 6 and 7 set forth the following standards and criteria, to which the effects of a project are to be compared, to determine whether it has the potential for significant environmental effects.

   *In deciding whether a project has the potential for significant environmental effects, the following factors shall be considered:*

   a. *type, extent, and reversibility of environmental effects;*
   b. *cumulative potential effects of related or anticipated future projects;*
   c. *extent to which the environmental effects are subject to mitigation by on-going regulatory authority; and*
   d. *the extent to which environmental effects can be anticipated and controlled as a result of other environmental studies undertaken by agencies or the project proposer, including other EISs.*

2. *Type, extent, and reversibility of environmental effects*

Based on the Findings of Fact above, the MDNR concludes that the following potential environmental impacts, as described in Finding No. 27, will be limited in extent, temporary, or reversible:

a. Construction activities
b. Fish, wildlife, and ecologically sensitive resources
c. Invasive species
d. Physical impacts to water resources
e. Water use
f. Erosion and sedimentation
g. Water quality
h. Cumulative effects

Based on the Findings of Fact above, the MDNR concludes the following potential environmental effects of the project, as described in Finding No. 27 will be beneficial:

Completed enhancement projects effects on fish, wildlife, water resources and water quality

3. *Cumulative potential effects of related or anticipated future projects.*

The effects of all past projects comprise the existing conditions of the project area. Cumulative environmental effects add to the existing condition the proposed project and future projects.

Cumulative environmental effects for future projects are assessed by evaluating the effect on the environment resulting from the incremental effects of the project under review plus similar effects from certain future projects that overlap spatially or temporally with the proposed project.

Consultation with St. Louis County Department of Planning and Community Development, and with MDNR Division of Forestry indicates that there are no known projects in the Gilmore Creek watershed that are currently underway or planned in the foreseeable future that would have impacts on the Creek.

4. *Extent to which environmental effects are subject to mitigation by on-going public regulatory authority.*

Based on the information in the EAW and Findings of Fact above, the MDNR has determined that the following environmental effects, as described in Finding No. 27, are subject to mitigation by ongoing public regulatory authority:

Physical impacts on water resources including creation of new stream channel alignment with instream habitat features are subject to regulatory authority by the MDNR Public Waters Work permit and the U.S. Army Corps of Engineers Section 404 permit. Effects related to water use are subject to regulatory authority by the MDNR Dewatering Permit.

Wetland effects include excavation of the new stream channel, grading, stockpiling, and compaction from construction equipment. Wetland Conservation Act (WCA) and Clean Water Act, Section 404 approval will be required prior to initiation of this project.

Erosion, sedimentation, and water quality from construction-related activity and new channel construction are subject to regulatory authority by the MPCA General Construction Stormwater NPDES/SDS Permit and Clean Water Act 401 Water Quality Certification.

5. *Extent to which environmental effects can be anticipated and controlled as a result of other environmental studies undertaken by public agencies or the project proposer, or other EISs.*

The MDNR has completed or developed with other entities a number of river and stream habitat improvement projects and prepared associated EAWs during the environmental review process. Post-construction monitoring is a standard component of these projects. The effects and benefits of prior projects are used in planning and developing other similar projects such as the proposed Gilmore Creek Stream Restoration Project. The information gained on the effects and results of past projects provides part of the basis for predicting the effects of similar future projects, such as the proposed Gilmore Creek Stream Restoration Project.

In addition, in early 2005, MDNR completed an Environmental Assessment Worksheet and the environmental review process for a stream restoration project, the Mill Creek Trout Stream Habitat Restoration Project, in the City of Chatfield and Olmsted County. In late 2005 and early 2006, the MDNR completed an Environmental Assessment Worksheet and the environmental review process for a stream restoration project, the Old Mill Stream Tributary Habitat Restoration Project, in the City of Marine on St. Croix in Washington County. In 2006, the MDNR completed an Environmental Assessment Worksheet and the environmental review process for a stream restoration project, Valley Creek Stream Habitat Restoration Project, in the City of Afton in Washington County. In 2006, the Department completed an Environmental Assessment Worksheet and the environmental review process for a stream restoration/habitat improvement project for Wisel Creek in Newburg Township, Fillmore County, Minnesota. In 2007, the Department completed an Environmental Assessment Worksheet and the environmental review process for a trout stream restoration project, Dark River Trout Stream Restoration Project, in St. Louis County, Minnesota. In 2008, the Department completed an Environmental Assessment Worksheet and the environmental review process for a lake sturgeon spawning habitat enhancement project on the St. Louis River in Carlton and St. Louis Counties. In 2009, the Department completed an Environmental Assessment Worksheet and environmental review process for a dam removal stream enhancement project on Rush Creek in the City of Rush City. In 2009, the Department completed an Environmental Assessment Worksheet and environmental review process for a habitat enhancement project, Lawndale Creek Habitat Enhancement Project, in Wilkin County, Minnesota. In 2010, the Department completed an Environmental Assessment Worksheet and environmental review process for a river rehabilitation project, Vermillion River Habitat Rehabilitation Project in Dakota County, Minnesota. In 2013, the Department completed an Environmental Assessment Worksheet and environmental review process for a park development project, Lake Vermilion and Soudan Underground Mine

State Park project in St. Louis County, Minnesota.

6. The MDNR has fulfilled all the procedural requirements of law and rule applicable to determining the need for an environmental impact statement on the proposed Gilmore Creek Stream Restoration Project.

7. Based on considerations of the criteria and factors specified in the Minnesota Environmental Review Program Rules (*Minnesota Rules*, chapter 4410.1700, subpart 6 and 7) to determine whether a project has the potential for significant environmental effects, and on the Findings and Record in this matter, the MDNR determines that the proposed Gilmore Creek Stream Restoration Project does not have the potential for significant environmental effects.

**ORDER**

Based on the above Findings of Fact and Conclusions:

The Minnesota Department of Natural Resources determines that an Environmental Impact Statement is not required for the Gilmore Creek Stream Restoration Project in St. Louis County, Minnesota.

Any Findings that might properly be termed Conclusions and any Conclusions that might properly be termed Findings are hereby adopted as such.

Dated this 19th day of September, 2013.

**STATE OF MINNESOTA**
**DEPARTMENT OF NATURAL RESOURCES**

Barb Naramore
Assistant Commissioner