DEPARTMENT OF NATURAL RESOURCES

RECORD OF DECISION

In the Matter of the Determination of the Need for an Environmental Impact Statement for the Minnesota Falls Dam Removal Project in Yellow Medicine and Chippewa Counties, Minnesota

FINDINGS OF FACT, CONCLUSIONS, AND ORDER

FINDINGS OF FACT

1. Northern States Power Company (NSP) proposes to remove the Minnesota Falls Dam located on the Minnesota River within Yellow Medicine and Chippewa Counties, Minnesota. The dam is classified as a high hazard dam that no longer serves its original purpose. The dam has several potential structural deficiencies that would need to be repaired if the dam is not removed.

2. The proposed project requires preparation of a State Environmental Assessment Worksheet (EAW) according to the rules of the Minnesota Environmental Quality Board (EQB) and the Minnesota Environmental Review Program for projects that change the course, current, or cross-section of one or more acres of any public water.

3. The EQB transferred the Responsible Governmental Unit duties for preparation and review of environmental documents related to the Minnesota Falls Dam Removal project from Yellow Medicine and Chippewa Counties to the Minnesota Department of Natural Resources (MDNR) on September 16, 2010, pursuant to *Minnesota Rules* part 4410.0500 Subpart 6.

4. The MDNR prepared an EAW for the Project, pursuant to *Minnesota Rules* part 4410.4300, subpart 27.

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

6. The EAW was filed with the EQB and a notice of its availability was published in the EQB *Monitor* on June 27, 2011. 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 Southern Regional Office, the MDNR library, and the Montevideo/Chippewa

County Library. The EAW was also made available to the public via posting on the MDNR's website.

7. The Minnesota State government shut down from July 1, 2001 to July 20, 2011 preventing access to the MDNR website or to request additional copies of the EAW for a substantial period during the 30 day review and comment period.

8. The EAW public review and comment period was extended on July 25, 2011. Notice of the extended comment period 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 extended review and comment period was sent to newspapers, and radio and television stations, statewide. Notice of the extended review and comment period was provided to the MDNR Southern Regional Office, the MDNR library, the Montevideo/Chippewa County Library, and was posted on the MDNR website. Notice of the extension was filed with the EQB and was published in the EQB *Monitor* that was published one day late on July 26, 2011, which extended the comment period for one additional day ending on August 25, 2011.

9. The extended 59-day EAW public review and comment period began June 27, 2011 and ended August 25, 2011, exceeding the EAW public review and comment period pursuant to *Minnesota Rules*, part 4410.1600. The opportunity was provided to submit written comments on the EAW to the MDNR by U.S. Mail, by facsimile, or electronically.

10. During the 59-day EAW public review and comment period, the MDNR received thirteen comments from the following individuals:

    Robin and Karon Spaude
    David Reimer
    Dick and Janet Wambeke
    Jane Remiger of the Yellow Medicine County Historical Society
    Mary Ann Heidemann of the State Historic Preservation Office
    Mark Herwig
    Duane Ninneman of CURE
    Dick Wambeke of the Yellow Medicine County Board of Commissioners
    Annah Gardner and Lois Norrgard of The Sierra Club North Star Chapter
    Karen Kromar of the Minnesota Pollution Control Agency
    David Smiglewski of the City of Granite Falls
    Mike Enstad
    Carl Imes

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

11. Comments submitted by Robin and Karon Spaude:

COMMENT: Commenters allege that the dam does act as flow control during high water events and slows down the effects of flooding downstream.

RESPONSE: The dam does control flow but this is diminished as flows increase. At high flows the amount of flow control at the dam is so minimal that in the dam's absence there would be no measurable change in downstream flooding.

COMMENT: Commenters allege that navigation of the river will be more difficult due to sand bars, mud flats, and granite boulders.

RESPONSE: This issue was addressed in response to EAW Item No.15. The approximately 3.25 miles upstream of the dam would change from an impounded water surface that is similar to a lake to a water body that more typical of a naturally flowing river. Navigation in the area is already limited to small watercraft due to existing navigation hazards in the area. River navigation does have the potential for additional navigation hazards. This is especially true for larger boats that are designed to be more suitable for lake navigation. Navigation within this 3.25 mile area will be similar to other areas on the Minnesota River downstream of the dam.

COMMENT: Commenters are concerned about trespassers on newly created shoreline.

RESPONSE: Trespass is not an environmental issue. The proposed removal of the dam would not make trespass any more likely than the current situation. Recreational use of the area will likely be similar to current conditions with the exception of larger lake style boats are not as likely to be using the river, where as they can sometimes use the impounded reservoir with the dam present.

COMMENT: Commenters are concerned about the spread of noxious weeds.

RESPONSE: Newly exposed shoreline will become colonized with vegetation. Certain problematic invasive species, such as reed canary grass, are likely to become established. The type of vegetation that becomes established is dependent on the seed bank that is present in the exposed soil. The seed bank likely consists of both native and invasive plant species. The estimated 36 acres of exposed shoreland area will become established with a mix of native and invasive plant species.

If native floodplain plant species such as willows and cottonwood trees become established first, they will limit the establishment of the invasive reed canary grass that can be problematic in these situations. The shade from the native plants will prevent reed canary grass growth. It is likely that the native plant species will establish without any planting or seeding as a mitigation measure. However, it is also likely that reed canary grass could become established first, which would limit the establishment of native plant species. It would be much more difficult, time consuming and expensive to try to get native plant species established after the invasive reed canary grass has been established. Potential measures to address this issue would be assess the exposed areas after dam removal and plant native willows or an annual cover crop on areas that that would be

susceptible to invasive plant species. Potential difficulties associated with actively planting vegetation include the willingness of private landowners and the potential that disruption of the soil could result in establishment of invasive species rather than the desired native species. Publically owned areas such as Memorial Park and the Yellow Medicine County Museum property are likely locations for active vegetation management. NSP will develop a vegetation management plan to be submitted with the MDNR Work in Public Waters Permit application. The plan will include a monitoring schedule, triggers for additional action, and potential measures to minimize invasive plant species and encourage native plant species. Implementation of this plan will be incorporated as part of the Work in Public Waters Permit.

COMMENT: Commenters are concerned about effects to aesthetics of the area due to reduction of open water, odor from exposed shoreline, and loss of cooling effect from mist coming off the dam.

RESPONSE: Reduction in the amount of open water and the loss of cooling effect from mist coming off the dam are permanent environmental changes that would occur if the dam is removed. Odor from exposed mudflats is a temporary environmental effect that will be addressed by establishment of vegetation on the exposed shoreline. The temporary effects from dam removal will gradually be reduced as the area naturally restores to a more typical free flowing riverine environment. Other portions of the Minnesota River downstream from the Minnesota Falls dam exhibit the free flowing riverine environment and can assist in anticipating what the condition of the 3.25 mile riverine environment upstream of the dam if it is removed. In general this area will regain the chemical, physical, and biological processes of riverine ecosystem that has been altered by the presence of the Minnesota Falls dam.

Although some individuals may perceive the loss of the dam and associated reservoir as a negative environmental effect to aesthetics, other individuals may consider the restoration of a natural river channel as a positive environmental effect to aesthetics. This portion of the Minnesota River is designated under the Wild and Scenic River Act as a recreational river district. Recreational river districts can have some impoundments or diversions that would prevent designation as a scenic or wild river district, but not to degree that would prevent management to further the purposes of the Wild and Scenic River Act. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from the scenic value of the river. Under this act it is reasonable to anticipate that the removal the impounded area would likely increase the scenic value of the area. There are no scenic easements in the area that would be affected by the dam removal.

COMMENT: Commenters allege that removal of the dam could result in larger slabs of ice flowing downstream at ice out causing ice dams and flooding downstream.

RESPONSE: The dam did cause ice to break up. Without the dam there will not be a reservoir so ice development behind the dam will be decreased. In addition the natural bedrock outcropping that will remain will act to break up ice as well. Both of these

factors together help to offset the potential for increased ice dams downstream as a result of dam removal.

COMMENT: Commenters are concerned about domestic well interference from blasting and loss of reservoir.

RESPONSE: The distances between the proposed dam demolition and domestic wells limit the possibility of blasting or other demolition activities affecting the wells. The technology of using explosives as part of structure demolition is a precise operation to focus the blast on the structure. It is extremely unlikely that such an operation would structurally alter bedrock geology in the area.

Any wells that are relying on the reservoir will be affected. Depending on the degree of dependence the wells have with the reservoir, some wells could require additional development to better access the aquifer. NSP intends to address well monitoring requirements as part of the MDNR Work in Public Waters Permit.

COMMENT: Commenters are concerned about MDNR authority to remove the dam.

RESPONSE: The MDNR is not proposing to remove the dam. NSP is proposing to remove the dam. MDNR has regulatory authority over the proposed removal and was assigned as the Responsible Government Unit for completing the environmental review process.

COMMENT: Commenters are concerned for changes to the Wild and Scenic River designation of the Minnesota River and if other regulatory agencies will consider the designation during consideration of permit applications.

RESPONSE: Although some individuals may perceive the loss of the dam and associated reservoir as a negative environmental effect to aesthetics, other individuals may consider the restoration of a natural river channel as a positive environmental effect to aesthetics. This portion of the Minnesota River is designated under the Wild and Scenic River Act as a recreational river district. Recreational river districts can have some impoundments or diversions that would prevent designation as a scenic or wild river district, but not to degree that would prevent management to further the purposes of the Wild and Scenic River Act. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from the scenic value of the river. Under this act it is reasonable to anticipate that the removal the impounded area would likely increase the scenic value of the area. There are no scenic easements in the area that would be affected by the dam removal. The draft management plan prepared for the Minnesota River Wild and Scenic River designation did not identify any resources associated with the reservoir that would be affected by the proposed dam removal. The one possible exception would be the affects to the existing water access at Memorial Park that was identified in the plan as an access point, rest area, and campground.

The MPCA considers outstanding resource waters as part of permitting activities. Wild and Scenic Rivers are included as outstanding resource waters. Federal agencies may or may not consider the Wild and Scenic River designation as part of permit application consideration.

COMMENT: Commenters allege that the EAW does not address that the City of Granite Falls originally started developing a few hundred feet away from the Minnesota Falls dam site.

RESPONSE: The commenter references a book by Carl and Amy Narvestad as verification that that the City of Granite Falls began near the dam. This book is the same document referenced by NSP cultural resource contractors that identified the City of Minnesota Falls as an early community in the area of the dam. The EAW did identify the City of Minnesota Falls was established near the dam site, but was destroyed in a flood. The EAW identifies that the area near the dam and upstream has high potential for historical resources. The physical removal of the dam will minimize disturbance to the area by using existing access roads. There will be a need an additional construction access point between and existing field road and the South bank of the river. The project will need to meet the requirement of the Minnesota Field Archaeology Act, the Minnesota Historic Sites Act and Section 106 of the National Historic Preservation Act.

COMMENT: Commenters questioned how dam removal will affect other wildlife in the area besides fisheries?

RESPONSE: The EAW indicated the proposed dam removal would support the management objectives of Minnesota Comprehensive Wildlife Management Strategy, which includes all wildlife species of greatest conservation need. Specifically the potential for additional cliff/bedrock habitat would benefit wildlife other than fisheries. The EAW also acknowledges that wildlife within the area will be affected during dam demolition and afterward until the area above the dam is re-established with vegetation and natural river flow. The temporary effects from dam removal will gradually be reduced as the area naturally restores to a more typical free flowing riverine environment. Other portions of the Minnesota River downstream from the Minnesota Falls dam exhibit the free flowing riverine environment and can assist in anticipating what the condition of the 3.25 mile riverine environment upstream of the dam if it is removed. In general this area will regain the chemical, physical, and biological processes of a riverine ecosystem that has been altered by the presence of the Minnesota Falls dam.

COMMENT: Commenters are concerned about effects to local businesses that appropriate water from the river and wastewater discharges to the river.

RESPONSE: The EAW identified that the City of Granite Falls has two discharge locations within the potentially affected area of the river. The effluent discharge limits of this facility require water quality standards to be met at the end of the discharge pipe. There are no mixing zones associated with the facility so changes in the river will not

affect the discharge requirements. One of the discharge pipes may need to extended or secured to minimize maintenance of the discharge location.

Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

COMMENT: Commenters questioned why dam safety issues were not made clearly and publicly in 2004 when NSP was notified.

RESPONSE: The dam safety deficiencies were provided to the dam owner. It is not common practice to develop a public participation process for routine dam safety inspections. The deficiencies of the Minnesota Falls dam are not an imminent threat, but do need to be addressed so that an imminent safety threat does not occur. As part of notifying NSP of the dam safety deficiencies the MDNR required NSP to develop a plan for addressing the deficiencies. NSP looked at several options and determined that dam removal was the option they would pursue.

COMMENT: Commenters suggested alternatives to dam removal.

RESPONSE: The EAW process does not evaluate project alternatives. The purpose of an EAW is to assess if a proposed project has significant environmental effects. If a project is determined to have the potential for significant environmental effects an EIS is ordered for the project and alternatives are evaluated in the EIS. Under the Minnesota Environmental Policy Act, alternatives area only evaluated when a project has been determined to have the potential significant environmental effects.

12. Comments submitted by David Reimer:

COMMENT: Commenter is concerned about changes in water level affecting public water basin 87-131P that is used for irrigation of Granite Run Golf Course. This public water basin is connected to the Minnesota River via a culvert and the irrigation water for the golf course is pumped out of the public water basin.

RESPONSE: Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this

change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

The EAW does identify the potential environmental effect of lowering the water level within public water basin 87-131P. It is likely that the ordinary high water level of the basin will be lowered resulting in less open water. These changes will be toward a more natural condition that existed prior to dam construction.

COMMENT: Commenter is concerned about changes in water level affecting public water basin 87-38P associated with Memorial Park.

RESPONSE: This issue is identified in response to EAW Item No. 12. Removal of the dam would result in the potential environmental effect of lowering the water level within public water basin 87-38P. It is likely that the ordinary high water level of the basin will be lowered resulting in less open water. These changes will be toward a more natural condition that existed prior to dam construction.

COMMENT: Commenter requests preparation of an environmental and economic assessment of benefits (industrial, recreational, residential, and tourism) compared to the damage from dam failure.

RESPONSE: An EAW does not evaluate economic considerations. A socio-economic evaluation similar to what is suggested would only be included as part of an EIS if the project was determined to have the potential for significant adverse environmental effects.

13. Comments submitted by Dick and Janet Wambeke:

COMMENT: Commenters are concerned about economic effects to Granite Falls Energy and Granite Run Golf Course due to water levels on the Minnesota River affected water appropriation infrastructure for those businesses.

RESPONSE: Removal of the Minnesota Falls dam would result in the loss of the Impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal

of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

COMMENT: Commenters are concerned about effects to Memorial Park, specifically the lowering of the public water basin and effects to the Minnesota River public water access within the park.

RESPONSE: This issue is identified in response to EAW Item No. 12. Removal of the dam would result in the potential environmental effect of lowering the water level within public water basin 87-38P. It is likely that the ordinary high water level of the basin will be lowered resulting in less open water. These changes will be toward a more natural condition that existed prior to dam construction.

The Minnesota River public water access may be affected in two different ways. The boat ramp may no longer reach the water and the type of boats that can easily navigate the river will be reduced. Larger deeper draft boats that are more suitable for lake navigation, which were able to use the reservoir, would be unlikely to use the boat landing after dam removal and the area restores to a more typical riverine environment.

COMMENT: Commenters are concerned about affects to aesthetics and recreational fishing associated with the Yellow Medicine County Museum property located along the Minnesota River in the City of Granite Falls south of the U.S. Highway 212 bridge and along Prentice Street in Granite Falls adjacent to the flood wall.

RESPONSE: The shoreline in this area would change as result of dam removal. This section of the river has higher gradient that will likely restore to a bedrock, boulder, cobble substrate that would provide excellent fish habitat. Fishing from the shoreline in this area will still be possible. After dam removal the shoreline will have areas devoid of vegetation. This will be a temporary situation until vegetation is established in these areas. The flowing river would be a different aesthetic experience. Although some individuals may perceive the loss of the dam and associated reservoir as a negative environmental effect to aesthetics, other individuals may consider the restoration of a natural river channel as a positive environmental effect to aesthetics. This portion of the Minnesota River is designated under the Wild and Scenic River Act as a recreational river district. Recreational river districts can have some impoundments or diversions that would prevent designation as a scenic or wild river district, but not to degree that would prevent management to further the purposes of the Wild and Scenic River Act. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from

the scenic value of the river. Under this act it is reasonable to anticipate that the removal the impounded area would likely increase the scenic value of the area. There are no scenic easements in the area that would be affected by the dam removal.

COMMENT: Commenters are concerned about accuracy of water level estimates after dam removal. Commenter alleges that water level in the area dropped 3 to 4 feet when the pool was drawn down 5 to 6 feet at the dam to accommodate construction of the Granite Falls Energy water intake structure.

RESPONSE: The water level estimates in the EAW were developed using hydraulic models that were originally created to develop Flood Rate Insurance Maps for the area. These models were updated with recent bathymetry data collected in 2009. As with any model, there is some uncertainty as to how well the model results will match the actual situation, however the modeling conducted by Barr Engineering was a good faith effort to estimate post dam removal water levels. Regardless of the accuracy of the water level estimates, the environmental effects of dam removal are relatively well understood. The river water level will be lower and this effect is greater during low water periods; Nearby public water basins will be lowered and potentially reduced in size; The exposed shoreline will be subject to erosion and colonization by native and invasive plant species; The river in this area will look very different, especially during low water periods and the area will eventually return to the free flowing riverine environment that it was over one hundred years ago before the dam was constructed.

COMMENT: Commenters suggested alternatives to dam removal.

RESPONSE: The EAW process does not evaluate project alternatives. The purpose of an EAW is to assess if a proposed project has significant environmental effects. If a project is determined to have the potential for significant environmental effects an EIS is ordered for the project and alternatives are evaluated in the EIS. Under the Minnesota Environmental Policy Act, alternatives are only evaluated when a project has been determined to have the potential significant environmental effects.

14. Comments submitted by Jane Remiger of the Yellow Medicine County Historical Society:

COMMENT: Commenter is concerned that the area of the Minnesota River adjacent to the Yellow Medicine County Museum will be converted from a flowing river to a wetland.

RESPONSE: The area adjacent to the Yellow Medicine County museum will not be converted to a wetland. The Minnesota River will still flow through the area. The shoreline in this area would change as a result of dam removal and some of that shoreland area could convert to wetland, but the river will still flow through the area and will do so as a naturally flowing river rather than an impounded river. The river is relatively narrow in the vicinity of the Yellow Medicine County Museum and a deep scour hole exists at

the sharp bend; although the water level will be lowered the scour hole will remain and the river will not have a large reduction in width under normal flow conditions.

COMMENT: The commenter alleges that the reduction in surface water area from 123.6 acres to 86 acres would have negative effects on transportation, parks, residential and limited commercial uses.

RESPONSE: It is not clear from the comment what the specific negative effects would be. There are no anticipated effects to transportation or residential uses in the area. There are no environmental effects to commercial uses, although the water intake systems of Granite Falls Energy and Granite Run Golf Course will likely need to be modified if the dam is removed and the reservoir restores to a riverine environment. Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

There are potential effects to the public water basin and boat landing within Memorial Park. These effects are identified in response to EAW Item No. 28.

COMMENT: The commenter alleges that removal of the dam will interfere with brown bullhead habitat that was only found upstream of the dam and to fish species found only below the dam.

RESPONSE: The EAW did not state that removal of the dam would interfere with brown bull head habitat. The EAW states that as part of MDNR fish sampling only the brown bullhead was found exclusively upstream of the dam, while fifteen fish species were found exclusively downstream of the dam. This statement is provided to show that the number of species below the dam is substantially higher than the number above the dam. Brown bullhead is present in other areas of the lower Minnesota River watershed and is not a species of high concern. However, many of the species that are found only downstream of the MN Falls dam are species of high concern that would benefit from habitats that would become accessible if the dam were removed.

COMMENT: Commenter suggested alternatives to dam removal.

RESPONSE: The EAW process does not evaluate project alternatives. The purpose of an EAW is to assess if a proposed project has significant environmental effects. If a project is determined to have the potential for significant environmental effects an EIS is ordered for the project and alternatives are evaluated in the EIS. Alternatives are only evaluated when a project has been determined to have the potential for significant environmental effects.

15. Comments submitted by Mary Ann Heidemann of the State Historic Preservation Office (SHPO):

COMMENT: The commenter noted that it appears several archeological investigations have been conducted, but without having reviewed the reports SHPO cannot provide comments at this time. In addition SHPO is unaware of any concurrence with the 1996 study that concluded the site was eliminated from consideration for the National Register of Historic Places.

RESPONSE: The project proposer was unable to provide a concurrence letter from SHPO for the 1996 Evaluation of the National Register Eligibility of the Minnesota Falls Dam study. MDNR provided SHPO with the 1996 study and the 2010 Cultural Resources Scoping Memorandum. SHPO reviewed these documents and provided an August 25, 2011 letter concurring that the Minnesota Falls Dam is not eligible for the National Register of Historic Places. SHPO also concurred with the recommendations in the Cultural Resources Scoping Memorandum for an additional survey under low water conditions.

COMMENT: The project will need to meet the requirements of the Minnesota Field Archaeology Act, the Minnesota Historic Sites Act and Section 106 of the National Historic Preservation Act.

RESPONSE: SHPO's review of the 1996 Evaluation of the National Register Eligibility of the Minnesota Falls Dam study and the 2010 Cultural Resources Scoping Memorandum have satisfied the requirements of the Minnesota Field Archaeology Act and the Minnesota Historic Sites Act, provided that the low water survey is carried out and the report provided to SHPO for review. The project proposer will need to work with the U.S. Army Corps of Engineers as part of their permitting process to meet Section 106 requirements. This requirement will be included in the record of decision and be provided to the project proposer.

16. Comments submitted by Mark Herwig:

COMMENT: The commenter alleges that removing the dam would improve conditions for fish and wildlife as well as enhance recreational use.

RESPONSE: The comment does not address the accuracy and completeness of the information, potential impacts that warrant further investigation and the need for an EIS. The comment is noted.

17. Comments submitted by Duane Ninneman of CURE:

COMMENT: The commenter alleges that removing the dam would improve the biological integrity, water quality and natural beauty of the river.

RESPONSE: The comment does not address the accuracy and completeness of the information, potential impacts that warrant further investigation and the need for an EIS. The comment is noted.

18. Comments submitted by Dick Wambeke of the Yellow Medicine County Board of Commissioners:

COMMENT: The commenter is concerned about effects to businesses such as Granite Falls Energy and Granite Run Golf Course that appropriate water from the reservoir needing to install new water intake systems.

RESPONSE: Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

COMMENT: The commenter alleges that changes in water elevation and changes in shoreline area will allow undesirable vegetation, affecting aesthetics of the river, and decreasing property values.

RESPONSE: Newly exposed shoreline will become colonized with vegetation. Certain problematic invasive species, such as reed canary grass, are likely to become established. The type of vegetation that becomes established is dependent on the seed bank that is present in the exposed soil. The seed bank likely consists of both native and invasive plant species. The estimated 36 acres of exposed shoreland area will become established with a mix of native and invasive plant species.

If native floodplain plant species such as willows and cottonwood trees become established first, they will limit the establishment of the invasive reed canary grass that can be problematic in these situations. The shade from the native plants will prevent reed

canary grass growth. It is likely that the native plant species will establish without any planting or seeding as a mitigation measure. However, it is also likely that reed canary grass could become established first, which would limit the establishment of native plant species. It would be much more difficult, time consuming and expensive to try to get native plant species established after the invasive reed canary grass has been established. Potential measures to address this issue would be to assess the exposed areas after dam removal and plant native willows or an annual cover crop on areas that that would be susceptible to invasive plant species. Potential difficulties associated with actively planting vegetation include the willingness of private landowners and the potential that disruption of the soil could result in establishment of invasive species rather than the desired native species. Publically owned areas such as Memorial Park and the Yellow Medicine County Museum property are likely locations for active vegetation management. NSP will develop a vegetation management plan to be submitted with the MDNR Work in Public Waters Permit application. The plan will include a monitoring schedule, triggers for additional action, and potential measures to minimize invasive plant species and encourage native plant species. Implementation of this plan will be incorporated as part of the Work in Public Waters Permit.

After dam removal the shoreline will have areas devoid of vegetation. This will be a temporary situation until vegetation is established in these areas. The flowing river would be a different aesthetic experience. Although some individuals may perceive the loss of the dam and associated reservoir as a negative environmental effect to aesthetics, other individuals may consider the restoration of a natural river channel as a positive environmental effect to aesthetics. This portion of the Minnesota River is designated under the Wild and Scenic River Act as a recreational river district. Recreational river districts can have some impoundments or diversions that would prevent designation as a scenic or wild river district, but not to degree that would prevent management to further the purposes of the Wild and Scenic River Act. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from the scenic value of the river. Under this act, the removal the impounded area would likely increase the scenic value of the area. There are no scenic easements in the area that would be affected by the dam removal.

Economic effects are not evaluated as part of Environmental Assessment Worksheets. The Environmental Quality Board Environmental Review Program, Minnesota rules chapter 4410 only requires evaluation of socio-economic effects as part of an EIS for projects that have the potential for significant environmental effects. The purpose of an EAW is to determine if a project has the potential for significant environmental effects, and if so to order preparation of an EIS that could evaluate socio-economic effects.

COMMENT: The commenter alleges that a drawdown of the river prior to the dam removal will allow a clearer understanding of how the proposed project will change the river.

RESPONSE: NSP attempted to conduct a drawdown in 2009 and again in 2010 to inspect the dam as well as to evaluate conditions above the dam, but river flows were too high.

The river is too high for a drawdown this year as well. Unfortunately the drawdown is only possible during low-flow conditions due to the limited capacity of the stoplog structure. The limited capability of conducting a drawdown will limit the usefulness of a drawdown as it may not accurately represent post dam removal conditions. A drawdown was conducted in October of 2006 to assist in construction of the Granite Falls Energy water intake structure. This drawdown was conducted when the Minnesota River was at very low flow (~300 cfs). The low flow and drawdown combined did allow a reasonable perspective of what the river would look like without the reservoir. However, the river flow was very low, so typical flow would be greater than was experienced in 2006. In addition the timing of the drawdown in the fall and the short duration prevented any vegetation establishment so the actual condition of the exposed shoreline was absent the vegetative growth that would occur after dam removal.

The EQB Rules do allow the RGU to postpone a decision on the need for an EIS to obtain lacking information for not more than 30 days unless a longer period is agreed to by the proposer. The question is if this information is necessary to make a reasoned decision on the potential for significant environmental effects. The information could be helpful and may result in a better understanding, but even without this information there is a good understanding of the potential environmental effects including: The river water level will be lower and this effect is greater during low water periods; Nearby public water basins will be lowered and potentially reduced in size; The exposed shoreline will be subject to erosion and colonization by native and invasive plant species; The river in this area will look very different, especially during low water periods and the area will eventually return to the free flowing riverine environment that it was over one hundred years ago before the dam was constructed. Based on this understanding and MDNR's experience with other similar situations such as Rush Creek and Shady Lake the drawdown information is not necessary for a reasoned decision on the potential for significant environmental effects. The concept of a drawdown will however be provided to the proposer and permit authorities for consideration prior to project implementation.

COMMENT: The commenter suggests an alternative project of engineered rock rapids that would help maintain the existing water level behind the dam.

RESPONSE: The EAW process does not evaluate project alternatives. The purpose of an EAW is to assess if a proposed project has significant environmental effects. If a project is determined to have the potential for significant environmental effects an EIS is ordered for the project and alternatives are evaluated in the EIS. Alternatives are only evaluated when a project has been determined to have the potential significant environmental effects.

19. Comments submitted by Annah Gardner and Lois Norrgard of The Sierra Club North Star Chapter:

COMMENT: The commenters allege that removing the dam will benefit the Minnesota River ecosystem.

RESPONSE: The comment does not address the accuracy and completeness of the information, potential impacts that warrant further investigation and the need for an EIS. The comment is noted.

20. Comments submitted by Karen Kromar of the Minnesota Pollution Control Agency:

COMMENT: The commenter states that upland re-use of dredged material and other upland land disturbances will need coverage under the National Pollutant discharge elimination System General Permit for Construction Activity.

RESPONSE: This information will be included as part of the Record of Decision and provided to the project proposer.

COMMENT: The commenter questions if the scour hole beneath the dam will fill in after dam removal and does the scour hole provide benefits to fish or recreational fishing.

RESPONSE: The scour hole is located approximately 300 feet downstream from the dam at the base of the natural bedrock outcropping. After dam removal the rock out cropping will remain. The hydraulic conditions created by the bedrock will maintain a scour hole; however removal of the dam could result in some changes to the morphology of the scour hole. The scour hole is a popular fishing spot and MDNR fisheries staff anticipate that it will remain a popular spot even if there are some morphological changes.

COMMENT: The commenter alleges that the EAW only addresses hazardous waste as part of equipment operation. There is a need to address oversight and handling of spills during fueling.

RESPONSE: The EAW states that NSP standard practices for operating construction machinery near water bodies. This includes addressing spills during fueling or mechanical failure. Examples of these measures include:

- No storage of fuel or oil within 100 feet of the river unless protected by an engineered secondary containment and approved by the company.
- Refueling operations will take place in approved areas. The equipment operator will be present during all fueling operations.
- Contractor will deploy sorbent booms or pads downstream (land or water) of oil storage or equipment as needed
- Contractor will be required to have spill kits wherever their equipment is located (i.e. both banks of the river).
- There will be a detailed reporting procedure in place.
- Wherever feasible, the contractor will use ‘environmentally friendly’ oil to minimize impacts of spill (i.e. vegetable oil used to prime pumps).

21. Comments submitted by David Smiglewski of the City of Granite Falls:

COMMENTS: The commenter is concerned about economic impact to Granite Falls Energy and Granite Run Golf Course associated with the cost of having to make modifications to their water intake structures should the dam be removed.

RESPONSE: Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

COMMENT: The commenter requests that NSP give further consideration to alternatives rather than dam removal.

RESPONSE: The EAW process does not evaluate project alternatives. The purpose of an EAW is to assess if a proposed project has significant environmental effects. If a project is determined to have the potential for significant environmental effects and EIS is ordered for the project and alternatives are evaluated in the EIS. Alternatives are only evaluated when a project has been determined to have the potential significant environmental effects.

COMMENT: The commenter is concerned about the impact to shoreline fishing at Memorial Park and the Yellow Medicine County Museum.

RESPONSE: The shoreline will change in this area, but shoreline fishing in the 3.25 mile river reach above the dam would still be possible, and potentially enhanced due to the reconnection of this portion of the river to the downstream river reach.

COMMENT: The commenter requests a drawdown of the river to fully analyze the impacts of dam removal.

RESPONSE: NSP attempted to conduct a drawdown in 2009 and again in 2010 to inspect the dam as well as to evaluate conditions above the dam, but river flows were too high. The river is too high for a drawdown this year as well. Unfortunately the drawdown is only possible during low-flow conditions due to the limited capacity of the stoplog structure. The limited capability of conducting a drawdown will limit the usefulness of a

drawdown as it may not accurately represent post dam removal conditions. A drawdown was conducted in October of 2006 to assist in construction of the Granite Falls Energy water intake structure. This drawdown was conducted when the Minnesota River was at very low flow (~300 cfs). The low flow and drawdown combined did allow a reasonable perspective of what the river would look like without the reservoir. However, the river flow was very low, so typical flow would be greater than was experienced in 2006. In addition the timing of the drawdown in the fall and the short duration prevented any vegetation establishment so the actual condition of the exposed shoreline was absent the vegetative growth that would occur after dam removal.

The EQB Rules do allow the RGU to postpone a decision on the need for an EIS to obtain lacking information for not more than 30 days unless a longer period is agreed to by the proposer. The question is if this information is necessary to make a reasoned decision on the potential for significant environmental effects. The information could be helpful and may result in a better understanding, but even without this information there is a good understanding of the potential environmental effects including: The river water level will be lower and this effect is greater during low water periods; Nearby public water basins will be lowered and potentially reduced in size; The exposed shoreline will be subject to erosion and colonization by native and invasive plant species; The river in this area will look very different, especially during low water periods and the area will eventually return to the free flowing riverine environment that it was over one hundred years ago before the dam was constructed. Based on this understanding and MDNR's experience with other similar situations such as Rush Creek and Shady Lake the drawdown information is not necessary for a reasoned decision on the potential for significant environmental effects. The concept of a drawdown will however be provided to the proposer and permit authorities for consideration prior to project implementation.

22. Comments submitted by Mike Enstad:

COMMENT: The commenter encourages removal of dam to reduce severity and frequency of flooding that occurs on his property.

RESPONSE: The comment does not address the accuracy and completeness of the information, potential impacts that warrant further investigation and the need for an EIS. The comment is noted.

23. Comments submitted by Carl Imes:

COMMENT: The commenter is concerned that water level reduction estimates in the EAW are inaccurate given that a 5 ft drawdown done in 2006 for construction of the GFE water intake resulted in at least 3 ft of water level reduction. A drawdown should be completed prior to dam removal to determine future water levels.

RESPONSE: The water level estimates in the EAW were developed using hydraulic models that were originally created to develop Flood Rate Insurance Maps for the area. These models were updated with recent bathymetry data collected in 2009. As with any

model, there is some uncertainty as to how well the model results will match the actual situation, however the modeling conducted by Barr Engineering was a good faith effort to estimate post dam removal water levels. Regardless of the accuracy of the water level estimates, the environmental effects of dam removal are relatively well understood. The river water level will be lower and this effect is greater during low water periods; Nearby public water basins will be lowered and potentially reduced in size; The exposed shoreline will be subject to erosion and colonization by native and invasive plant species; The river in this area will look very different, especially during low water periods and the area will eventually return to the free flowing riverine environment that it was over one hundred years ago before the dam was constructed.

NSP attempted to conduct a drawdown in 2009 and again in 2010 to inspect the dam as well as to evaluate conditions above the dam, but river flows were too high. The river is too high for a drawdown this year as well. Unfortunately the drawdown is only possible during low-flow conditions due to the limited capacity of the stoplog structure. The limited capability of conducting a drawdown will limit the usefulness of a drawdown as it may not accurately represent post dam removal conditions. A drawdown was conducted in October of 2006 to assist in construction of the Granite Falls Energy water intake structure. This drawdown was conducted when the Minnesota River was at very low flow (~300 cfs). The low flow and drawdown combined did allow a reasonable perspective of what the river would look like without the reservoir. However, the river flow was very low, so typical flow would be greater than was experienced in 2006. In addition the timing of the drawdown in the fall and the short duration prevented any vegetation establishment so the actual condition of the exposed shoreline was absent the vegetative growth that would occur after dam removal.

The EQB Rules do allow the RGU to postpone a decision on the need for an EIS to obtain lacking information for not more than 30 days unless a longer period is agreed to by the proposer. The question is if this information is necessary to make a reasoned decision on the potential for significant environmental effects. The information could be helpful and may result in a better understanding, but even without this information there is a good understanding of the potential environmental effects including: The river water level will be lower and this effect is greater during low water periods; Nearby public water basins will be lowered and potentially reduced in size; The exposed shoreline will be subject to erosion and colonization by native and invasive plant species; The river in this area will look very different, especially during low water periods and the area will eventually return to the free flowing riverine environment that it was over one hundred years ago before the dam was constructed. Based on this understanding and MDNR's experience with other similar situations such as Rush Creek and Shady Lake the drawdown information is not necessary for a reasoned decision on the potential for significant environmental effects. The concept of a drawdown will however be provided to the proposer and permit authorities for consideration prior to project implementation.

COMMENT: The commenter is concerned about the cost to Granite Falls Energy due to the need to modify their water intake structure and to Granite Run Golf Course if they cannot irrigate from the pond they currently use.

RESPONSE: Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

COMMENT: The commenter is concerned about impacts to recreational use of Yellow Medicine county Museum and Memorial Park.

RESPONSE: This issue is identified in response to EAW Item No. 12. Removal of the dam would result in the potential environmental effect of lowering the water level within public water basin 87-38P. It is likely that the ordinary high water level of the basin will be lowered resulting in less open water. These changes will be toward a more natural condition that existed prior to dam construction.

The Minnesota River public water access may be affected in two different ways. The boat ramp may no longer reach the water and the type of boats that can easily navigate the river will be reduced. Larger deeper draft boats that are more suitable for lake navigation, which were able to use the reservoir, would be unlikely to use the boat landing after dam removal and the area restores to a more typical riverine environment.

The shoreline in this area would change as result of dam removal. This section of the river has higher gradient that will likely restore to a bedrock, boulder, cobble substrate that would provide excellent fish habitat. Fishing from the shoreline in this area will still be possible. After dam removal the shoreline will have areas devoid of vegetation. This will be a temporary situation until vegetation is established in these areas. The flowing river would be a different aesthetic experience. Although some individuals may perceive the loss of the dam and associated reservoir as a negative environmental effect to aesthetics, other individuals may consider the restoration of a natural river channel as a positive environmental effect to aesthetics. This portion of the Minnesota River is designated under the Wild and Scenic River Act as a recreational river district. Recreational river districts can have some impoundments or diversions that would prevent designation as a scenic or wild river district, but not to degree that would prevent management to further the purposes of the Wild and Scenic River Act. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from the scenic value of the river. Under this act it is reasonable to anticipate that the removal the

impounded area would likely increase the scenic value of the area. There are no scenic easements in the area that would be affected by the dam removal.

COMMENT: The commenter suggests that if the dam is removed it should be replaced with a rock rapids system engineered to maintain the current water level.

RESPONSE: The EAW process does not evaluate project alternatives. The purpose of an EAW is to assess if a proposed project has significant environmental effects. If a project is determined to have the potential for significant environmental effects an EIS is ordered for the project and alternatives are evaluated in the EIS. Alternatives are only evaluated when a project has been determined to have the potential significant environmental effects.

24. Based upon the information contained in the EAW and received as public comments the MDNR has identified the following potential environmental effects associated with the project:

    Construction activities
    Fish, wildlife, and ecologically sensitive resources
    Physical impacts to water resources
    Water-related land use management district
    Water surface use
    Erosion and sedimentation
    Water quality
    Solid wastes and hazardous materials
    Vehicle-related air emissions
    Odors and noise
    Nearby resources
    Visual impacts
    Impact on infrastructure
    Cumulative potential effects

    Each these environmental effects are discussed in more detail below.

25. Construction activities:

    The proposed project will remove the dam and any remaining features that were originally part of the hydroelectric project. Removal will be phased and timed to minimize the potential for disruption of demolition activities by high river flows and likewise the activity's effect on river water quality due the discharge of sediment. Temporary placement of water control structures and some sediment removal immediately upstream of the dam and stoplog structure will be necessary for dam removal. Rubble from the granite/masonry dam demolition that is free of reinforcing steel will be re-used onsite as fill and/or bank protection. Sediment will be used to restore channel banks in the vicinity of the old tailrace channel and will be re-vegetated with native vegetation. Sediment not used for onsite reclamation will be beneficially re-used or disposed of offsite.

Demolition and remediation is expected to occur during one construction season and is planned for July through December, when river flows are typically between 300 to 600 cfs, with the reservoir level at approximately 883' mean sea level (msl). Stoplogs will be incrementally removed to lower the upstream pool elevation to approximately 876.0' to 877.5' msl. The river bottom immediately upstream of the dam is approximately 872.0' to 873.0' msl. Pool depths will be 3 to 5.5' deep with 2 to 3.5' of water flowing through the stoplog structure for the anticipated flows.

Following removal of the dam, exposed and unstable channel banks in the immediate vicinity of the dam removal will be stabilized with rock or vegetation. Unstable banks can result from removal of dam embankments that require excavation into the bank or construction activities that disturb the shoreline. An area near the tail race a new bank slope will be constructed to restore areas previously containing dam infrastructure. Restoration of the site will focus on providing stable banks that blend into the natural shoreline and to avoid large expanses of rip rap armored shoreline.

26. Fish, wildlife, and ecologically sensitive resources:

There is potential for temporary fish and wildlife disturbance during and shortly after dam demolition due to equipment operation and downstream sediment releases from work-in-water activities. These environmental effects are minimized by limiting the amount of in-water-work, sediment removal in the area above the dam, and using Best Management Practices during demolition to control erosion and sedimentation.

Areas upstream of the dam that are currently inundated by the reservoir, but will be exposed after dam removal will initially be of limited habitat value until vegetation becomes established in these areas. Dewatering of these areas will stimulate vegetative growth. The encroachment of invasive plant species into these newly exposed areas could prevent these areas from developing into quality habitat. The establishment of vegetation within these areas is dependent on the seed bank present within the soil. Potential measures to address this issue would be assess the exposed areas after dam removal and plant native willows or an annual cover crop on areas that that would be susceptible to invasive plant species. Potential difficulties associated with actively planting vegetation include the willingness of private landowners and the potential that disruption of the soil could result in establishment of invasive species rather than the desired native species. Publically owned areas such as Memorial Park and the Yellow Medicine County Museum property are likely locations for active vegetation management. NSP will develop a vegetation management plan to be submitted with the MDNR Work in Public Waters Permit application. The plan will include a monitoring schedule, triggers for additional action, and potential measures to minimize invasive plant species and encourage native plant species. Implementation of this plan will be incorporated as part of the Work in Public Waters Permit.

Removal of the Minnesota Falls Dam may cause short-term adverse impacts to mussels as the water surface elevation of the pool upstream of the dam is lowered and the river returns to a pre-impoundment condition.

The Minnesota County Biological Survey (MCBS) has identified two Sites of Biodiversity Significance adjacent to the proposed dam removal site on both sides of the Minnesota River. Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. The site the South bank is ranked as Moderate and contains occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery. The site on the North bank is ranked as High and contains very good quality occurrences of the rarest species, high quality examples of the rare native plant communities, and/or important functional landscapes. These two Sites contain Dry Hill Prairie and Rock Outcrop – Dry Prarie Complex native plant communities. These native plant communities are considered imperiled in Minnesota (state rank of 2), and provide habitat for several state-listed species. As such, any ground disturbance (including disturbance associated with access routes and staging areas) within the native plant communities will be avoided. Expansions or additions to the field road that will be used to access the right embankment of the dam will need to be evaluated for disturbance of native plant communities. If avoidance is not feasible, a botanical survey will be needed and the project proposer will need to coordinate with the DNR regarding potential surveyors and survey protocol.

Removal of the Minnesota Falls Dam will provide a long-term environmental and ecological benefit to the Minnesota River between the Minnesota Falls Dam and the Granite Falls Dam, and to downstream reaches. The upstream reach will have a greater variety of habitat types and improved spawning areas. The river reach upstream of the dam will re-establish the physical and biological processes of a river ecosystem that had been altered by the impounded condition of the river.

27. Physical impacts to water resources:

Removal of the dam will lower water levels extending approximately 3.25 miles upstream from Minnesota Falls to the Granite Falls Dam. Hydraulic modeling was used to evaluate the impacts of dam removal on upstream river levels. The model evaluated water level at high flows (100 year flood) and at low flows (600cfs). The water for each of these flow levels was also evaluated at an expected lowering of the river channel and at a maximum lowering of the river channel. The low flow maximum channel lowering was the condition that the model predicted would have the greatest change in water level. This maximum water level lowering is approximately 15 feet at the dam and less than 5 feet at the U.S. Highway 212 Bridge in the City of Granite Falls.

Under typical normal flow conditions, the water surface area upstream of the dam is expected to be reduced from 123.6 acres under current conditions to 86 acres with the dam removed, or a reduction of 36.6 acres. The affected area is expected to convert to other wetland types. The estimated 36.6 acres of type L1Ubh (permanently flooded) and

R2UBH (permanently flooded, diked-impounded) wetlands will no longer be permanently flooded and will likely change to a seasonally flooded wetlands similar to PSS1C and PEMC types already found in small areas upstream of the existing dam. The exact type of conversion will depend on specific site conditions and successful colonization of the areas by wetland plant species.

There are four Public Waters Basins adjacent or near the upstream reservoir. A 13 Acre Public Water Basin 87-38P (aka Memorial Park Pond) has displayed water levels similar to river levels implying either a groundwater connection or culvert connection. Depending on the nature of the connection, the pond may be lowered following removal of the Minnesota Falls dam. A 15 Acre Public Water Basin 87-131P (aka Granite Run Golf Course Pond) is connected to the river via a culvert. Additional groundwater connection between the river and the pond is also possible. The culvert opening is managed by the Granite Run Golf Course to maximize flow into the pond during periods of high water flow and minimize the flow from the pond to the river during periods of low water flow. High flows will still allow flow from the culvert to the pond. The duration and amount of flow will however be decreased and any groundwater support that the pond receives now, will also be decreased. The pond may be lowered following removal of the Minnesota Falls dam. Public Water Basins 87-37P and 87-132P are of similar elevation. 87-37P is connected to the river through a wetland complex and potentially a groundwater connection. 87-132P is connected to 87-37P through a similar wetland complex indicating that both basins have similar hydrologic connection to the river. Both of these ponds may be lowered following removal of the Minnesota Falls dam.

Five streams enter the Minnesota River within the 3.25 mile reach that would be affected by the dam removal. Only one of these streams is a public watercourse, which enters the river just below Granite Falls Dam where water level effects will be the least. The next downriver stream enters the river just downstream from the Highway 212 Bridge and is part of a diversion channel that was constructed as flood protection project for the City of Granite Falls. The remaining three streams are small intermittent streams, one of which runs through the Minnesota Valley Generating Plant property with the lower portion within a culvert under an electrical substation before being discharged to the river. The remaining two intermittent streams would have increased gradients after dam removal. This increased gradient could result in channelization and head cutting within these streams. Potential increased sedimentation and channelization of the streams will be limited by the small watersheds and rock/cobble nature of these streams.

28. Water-related land use management district:

Minnesota Falls dam lies on a portion of the Minnesota River that has been classified as a Wild and Scenic River by the State of Minnesota, within a reach that is designated as Recreational. Recreational rivers are those rivers that may have undergone some impoundment or diversion in the past and that may have adjacent lands which are considerably developed, but that are still capable of being managed so as to further the purposes of the Wild and Scenic Rivers Act.

Approximately one quarter of a mile downstream of the Minnesota Falls dam the Wild and Scenic District is designated as a Scenic River District. Scenic rivers are those rivers that exist in a free-flowing state and with adjacent lands that are largely undeveloped. The presence of the Minnesota Falls Dam was at least part of the reason that the river was designated recreational in this area rather than scenic. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from the scenic value of the river. Under the Wild and Scenic Rivers Act, it is reasonable to anticipate that the removal the impounded area would likely increase the scenic value of the area. This potential increase in scenic value will not be present after dam removal until the formerly inundated area becomes established with vegetation and the shoreline adapts to the free flowing river conditions.

Removal of the Minnesota Falls Dam will be compatible with the adjacent land and river designations. Removal of the dam will improve connectivity of the river and lower 100-year flood levels by approximately two feet immediately upstream of the dam and therefore reduce the extent of the adjacent flood hazard area. The lowering will lessen as one proceeds upstream, and will be minimal upstream of the US 212 bridge. Removal of the dam would have no impact on downstream water levels; neither normal nor flood levels will be impacted downstream of the dam.

29. Water surface use:

There is an existing boat launch at Memorial Park that is within the area of the river that would experience lower water levels if the dam is removed. The lower water levels would affect the type of watercraft that can use the boat launch and the launch may need to be extended further into the river. The approximately 3.25 miles upstream of the dam would change from an impounded water surface that is similar to a lake to a water body that is more typical of a naturally flowing river. River navigation does have the potential for additional navigation hazards. This is especially true for larger boats that are designed to be more suitable for lake navigation. Private docks located in the river between Minnesota Falls and Granite Falls would also be impacted by removal of the dam, depending on their location.

30. Erosion and sedimentation:

Work in water as part of dam removal has the potential for temporarily increasing sedimentation in the Minnesota River. The Work in Public Waters permit and MPCA-approved Stormwater Pollution Prevention Plan (SWPPP) will include details that identify specific Best Management Practices (BMPs) to prevent and minimize downstream sedimentation. The selected practices will be specifically tailored to 1) manage pumped de-watering sites, 2) place temporary cofferdams to isolate work areas, 3) place erosion control barriers for disturbed soil/construction haul routes, 4) guide operation of construction machinery in and around water, 5) manage demolition processes and debris and, 6) manage stormwater.

There are approximately 35.8 acres within the affected reach above the dam that have accumulated sediments. Removal of the dam will allow the river to scour these sediment deposits under the new flow regime. This scour will temporarily increase sedimentation of the Minnesota River. The river channel will naturally stabilize to the new flow regime and come into sediment erosion and deposition equilibrium.

There are five streams that enter the Minnesota River within the reach potentially affected by the dam removal. Lowering the water within this reach would result in these streams adjusting to a new gradient, which could result in additional sedimentation from these channels. The change in water level at the stream just below Granite Falls dam and the flood diversion channel will have a smaller change in water level and thus smaller potential for sedimentation from these streams. A third stream that is routed through NSP's Minnesota Valley Generating Plant property could also contribute sediment to the Minnesota River. NSP is in the process of re-routing this small stream and is implementing stabilization measures where the stream enters the river channel. The two remaining intermittent streams would experience the largest changes in water level with the resulting largest potential for channelization and sedimentation.

Areas within the 3.25 mile river reach above the dam that are currently inundated by the reservoir that would be exposed after dam removal will be subject to erosion until vegetation becomes established.

Additional measures to address the potential sources of erosion after dam removal would be addressed as part of ongoing public regulatory authority under the MDNR Work in Public Waters Permit, U.S. Army Corps of Engineers Section 404 Permit, and MPCA Section 401 Water Quality Certification. NSP will develop a vegetation management plan to be submitted with the MDNR Work in Public Waters Permit application. The plan will include a monitoring schedule, triggers for additional action, and potential measures to minimize invasive plant species and encourage native plant species. Implementation of this plan will be incorporated as part of the Work in Public Waters Permit.

31. Water quality:

During dam removal activities sediment upstream and around the dam will be disrupted and released into the Minnesota River. After dam removal the hydraulics of the free flowing river will scour portions of the riverbed that accumulated sediment in the impounded state. This will also result in additional sediment being released into the Minnesota River. The streams that enter the 3.25 mile reach above the dam and shoreline erosion in this same area will also deliver additional sediment into the Minnesota River after dam removal until the river ecosystem becomes re-established through the currently impounded area. All of these sources of increased sediment will be temporary until the river channel stabilizes sediment transport with the post impounded river slope and the newly exposed riparian area becomes established with vegetation.

Construction practices during dam removal to isolate working areas from river through the use of coffer dams and staged removal would minimize sediment release during

removal. Dam removal is also subject to ongoing public regulatory authority under the MDNR Work in Public Waters Permit, U.S. Army Corps of Engineers Section 404 Permit, and MPCA Section 401 Water Quality Certification. Monitoring, assessment and implementation of corrective actions within the 3.25 mile river reach after dam removal would reduce the sediment released to the Minnesota River during the time period that the river is working to stabilize the channel in the free flowing condition.

32. Solid wastes and hazardous materials:

An estimated 800 cubic yards of concrete and 1700 cubic yards of rock masonry will be generated by the dam removal. Limited sediment removal (estimated 10,000 cubic yards) will be performed immediately upstream of the dam and stoplog structure. Rubble from the granite/masonry dam demolition that is free of reinforcing steel will be re-used onsite as fill below soil cover and/or bank protection (rock masonry). Sediment will be used to restore channel banks in the vicinity of the old tailrace channel and will be re-vegetated with native grasses. Sediment not used for onsite reclamation will be beneficially re-used or disposed of offsite. Excess concrete and/or steel will be recycled or disposed of off-site.

The sediment upstream of the dam was evaluated to determine the most suitable disposal or re-use option. Several metals were above Ontario Lowest Effect Level (LEL) criteria, including Arsenic, Copper, and Nickel. Total Kjeldahl Nitrogen, Phosphorous and Total Organic Carbon also exceeded the LEL levels. None of the tested metals were above the most protective (lowest or Level 1) soil reference value (SRV) guideline criteria which determines beneficial re-use or disposal options.

Organochorine Pesticides, PCBs, and PAHs all tested below Level 1 SRV criteria; however, several of those that were reported as “non-detect” had Method Reporting Limits (MRLs) that were greater than the Level 1 SQT and/or Ontario LEL values. The proposed project may need a State Disposal System Permit for dredged material disposal from the MPCA. The sediment test results and whether additional testing is needed will be evaluated as part of that permitting process.

Construction equipment used for dam removal will contain hazardous materials such as fuel, oil, antifreeze, and other typical machinery fluids. NSP has standard practices for operating construction machinery near water bodies. This includes addressing spills during fueling or mechanical failure. Examples of these measures include: No storage of fuel or oil within 100 feet of the river unless protected by an engineered secondary containment and approved by the company; Refueling operations will take place in approved areas; The equipment operator will be present during all fueling operations; Contractor will deploy sorbent booms or pads downstream (land or water) of oil storage or equipment as needed; Contractor will be required to have spill kits wherever their equipment is located (i.e. both banks of the river); There will be a detailed reporting procedure in place; Wherever feasible, the contractor will use ‘environmentally friendly’ oil to minimize impacts of spill (i.e. vegetable oil used to prime pumps).

33. Vehicle-related air emissions:

Construction equipment used for dam removal would result in temporary vehicle-related air emissions. Hauling of sediment removed behind the dam would result in an estimated 1,250 loads hauled from the site.

34. Nearby Resources:

A Cultural Resources Scoping Memorandum was prepared for the dam removal project in January 2010. The Scoping Memorandum indicates the Minnesota Falls Dam site has a long history of use including a saw mill with the development of a small town in the 1800's until a devastating flood wiped out the town. Based on the recommendations in the Scoping Memorandum, an archaeological investigation was performed in November 2010, consisting of inspection of the upstream shoreline areas and collection of sediment samples from underwater areas that would be exposed following removal of the dam. Both banks upstream of the dam were inspected from a boat, and sediment samples were collected from selected sites with a ponar dredge. The samples were sieved to determine the presence of artifacts. Preliminary conclusions about what areas have or lack archaeological potential are as follows:

- The stretch from the boat landing at the City Park to just upstream of the US 212 Bridge has archaeological potential along both banks. The south bank is mostly city-owned, while the opposite side is mostly residential. If permissible, both sides could be investigated by shovel testing along the bank as an alternative to drawing the river down to expose bank erosion.
- From the boat landing downstream as far as the bend just above the islands (located about 5,000 feet upstream of Minnesota Falls), both banks lack archaeological potential as they are either very rocky or near the old Minnesota Valley generating plant, and therefore disturbed.
- The islands were indicated as culturally and spiritually significant to the Upper Sioux Community but were not tested as impacts due to dam removal are expected to be minimal.
- Ponar sampling was unsuccessful in the shallow area immediately upstream from the islands due to hard- packed sediments.
- Ponar sampling worked well along the shallow area approximately 2,000 feet downstream from the island (~3,000 feet upstream from the dam); sediments were very silty and easily passed through a 4 mm mesh sieve (all negative findings).
- The entire south side between these two ponar sampled areas features significant bank erosion that would be easy to inspect by walking the shore if permission was obtained from the owner(s). This is also true of some cultivated fields on the north side. The inspection would be visual only and would not involve any testing.
- The remaining 3,000 foot stretch above the dam has considerable archaeological potential but could not be inspected without a drawdown. There is some accumulation

of silt at various locations on either side of the river. Historic remnants of the old Minnesota Falls community probably exist on the banks, but any evidence on the south side are likely protected from erosion by the natural and man-made levees that exist on much of the overbank.

Exposed sediments will be inspected during removal of the dam in order to identify artifacts that may be exposed by the lowered water level. The level of participation in this effort will be determined during the Corps of Engineers permitting process as part of the Section 106 National Historic Preservation Act requirements.

35. Visual impacts:

After dam removal the water level behind the dam will be reduced and areas of shoreline formerly inundated by the impounded river will become exposed. The newly exposed shoreline areas will be devoid of vegetation and will likely include areas of large mudflats. The view of the river during this time period will likely be perceived as a negative impact to aesthetics of the area compared to the open water of the impounded river.

The temporary effects from dam removal will gradually be reduced as the area naturally restores to a more typical free flowing riverine environment. Other portions of the Minnesota River downstream from the Minnesota Falls dam exhibit the free flowing riverine environment and can assist in anticipating what the condition of the 3.25 mile riverine environment upstream of the dam if it is removed. In general this area will regain the chemical, physical, and biological processes of riverine ecosystem that has been altered by the presence of the Minnesota Falls dam.

Although some individuals may perceive the loss of the dam and associated reservoir as a negative environmental effect to aesthetics, other individuals may consider the restoration of a natural river channel as a positive environmental effect to aesthetics. This portion of the Minnesota River is designated under the Wild and Scenic River Act as a recreational river district. Recreational river districts can have some impoundments or diversions that would prevent designation as a scenic or wild river district, but not to degree that would prevent management to further the purposes of the Wild and Scenic River Act. The presence of reservoirs in the Wild and Scenic river district is perceived as detracting from the scenic value of the river. Under this act is reasonable to anticipate that the removal the impounded area would likely increase the scenic value of the area.

36. Impact on infrastructure:

The wastewater treatment plant (WWTP) for the City of Granite Falls has a two effluent discharge pipes to the Minnesota River. The most upstream pipe extends into the river channel at such distance and location that it will not be affected by the water level change. The downstream effluent pipe extends approximately 10 feet into the current channel. Removal of the dam and lowering of the reservoir pool may require that the downstream pipe outlet be protected or lowered.

The boat launch located on the river near the Memorial Park in the City of Granite Falls will likely be impacted. The river is currently shallow in front of the launch and this area may be completely exposed following removal of the dam.

37. Cumulative effects:

The proposed removal of the Minnesota Falls Dam may have the following environmental effects that could combine with other projects to for cumulative potential effects:

- Changes in water level in the reservoir area between Granite Falls dam and the existing Minnesota Falls dam.
- Increased turbidity within the Minnesota River downstream of the dam during dam demolition and while the river and shoreline re-establish to the new water level conditions.

NSP's CAPX transmission line project includes a proposed new line crossing near the Minnesota Valley Generating Plant, located approximately 1.7 miles upstream of the Minnesota Falls Dam. The new towers will be located outside of the channel, which is tentatively scheduled for 2012-2013. If construction of the transmission line coincides with demolition of the dam, erosion and sedimentation from both projects could combine to create the cumulative potential effect of turbidity in the Minnesota River. Both of these projects are subject to ongoing public regulatory authority under the MPCA Construction Stormwater General Permit that requires preparation of stormwater pollution prevention plans and the use of best management practices to prevent erosion and sedimentation. The Total Maximum Daily Load (TMDL) project for the Minnesota River turbidity impairment identifies the application of these best management practices as strategy to address the turbidity impairment of the Minnesota River. Although the TMDL study is not complete the study is underway and fact sheets have been prepared that identify potential sediment sources and measures to reduce the contribution from those sources.

38. Removal of the Minnesota Falls dam would result in the loss of the impounded area of the river upstream of the dam. The environmental effects of this change are described in the EAW and Findings of Fact Nos. 24-37. The amount of water flowing through this portion of the Minnesota River will not be reduced by the removal of the Minnesota Falls dam. There are three water appropriation permits (Granite Falls Energy, Granite Run Golf Course, and Minnesota Valley Generating Plant) within this portion of the river that have water intake systems that were constructed to take advantage of the impounded condition of the river in this area. These water intake systems may need to be modified to appropriate water from the loss of the impounded area. The Minnesota Valley Generating Plant water intake system needs modifications due to federal regulatory requirements with or without the loss of the reservoir. The economic effects to these water users due to the need to modify their water intake systems is not a consideration as part of an EAW for determining if there is the potential for significant environmental effects.

39. The MDNR requested and was granted a 15 day extension for making a decision on the need for an EIS as provided under the provisions of Minnesota Rules, chapter 4410.1700 Subp. 2.b.

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

Unit of government	Type of application
MDNR	Work in Public Waters Permit/Dam Safety Permit
MPCA	NPDES Construction Storm Water General Permit
MPCA	Section 401 Water Quality Certification
MPCA	State Disposal System Permit for Dredged Material
US Army Corps of Engineers	Section 404 Permit
US Army Corps of Engineers	Section 10 Rivers and Harbors Act
State Historic Preservation Office	Section 106, Historical & Cultural Resources
Yellow Medicine County	Wetland Conservation Act
Chippewa County	Wetland Conservation Act
Yellow Medicine County	Shoreland Alteration Permit
Chippewa County	Shoreland Alteration Permit

CONCLUSIONS

1. The Minnesota Environmental Review Program Rules, *Minnesota Rules*, part 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. The RGU shall consider the following factors: whether the cumulative potential effect is significant; whether the contribution from the project is significant when viewed in connection with other contributions to the cumulative potential effect; the degree to which the project complies with approved mitigation measures specifically designed to address the cumulative potential effect; and the efforts of the proposer to minimize the contributions from the project;

   C. the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority. The RGU may rely only on mitigation measures that are specific and that can be reasonably expected to effectively mitigate the identified environmental impacts of the project; and

D. *the extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public 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 effects, as described in the Finding of Facts, will be limited in extent, temporary, or reversible:

Construction activities
Fish, wildlife, and ecologically sensitive resources
Physical impacts to water resources
Water-related land use management district
Water surface use
Erosion and sedimentation
Water quality
Solid wastes and hazardous materials
Vehicle-related air emissions
Odors and noise
Nearby resources
Visual impacts
Impact on infrastructure
Cumulative potential effects

3. *Cumulative potential effects. The RGU shall consider the following factors: whether the cumulative potential effect is significant; whether the contribution from the project is significant when viewed in connection with other contributions to the cumulative potential effect; the degree to which the project complies with approved mitigation measures specifically designed to address the cumulative potential effect; and the efforts of the proposer to minimize the contributions from the project;*

Based on the Findings of Fact above, the MDNR concludes that the following cumulative potential environmental effects, as described in the Finding of Facts, are not significant when viewed in connection with other contributions; the degree to which the project complies with approved mitigation measures specifically designed to address cumulative potential effects; and the proposer has made efforts to minimize contributions from the project:

Erosion and sedimentation
Water quality
Cumulative potential effects

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

Based on the Findings of Fact above, the MDNR concludes that the following potential environmental effects are subject to mitigation by on-going regulatory authority:

Construction Activity, physical impacts to water resources, erosion/sedimentation, water quality, and cumulative potential effects are subject to mitigation by MDNR Work in Public Waters Permit, MDNR Dam Safety Permit/Dam Safety Permit, MPCA NPDES Construction Storm Water General Permit, MPCA Section 401 Water Quality Certification, MPCA State Disposal System Permit for Dredged Material, US Army Corps of Engineers Section 404 Permit, US Army Corps of Engineers Section 10 Rivers and Harbors Act, Yellow Medicine County Wetland Conservation Act, Chippewa County Wetland Conservation Act, Yellow Medicine County Shoreland Alteration Permit, and Chippewa County Shoreland Alteration Permit.

Fish, wildlife, and ecologically sensitive resources effects are subject to mitigation by MDNR Work in Public Waters Permit/Dam Safety Permit.

Solid waste and hazardous materials are subject to mitigation by MPCA NPDES Construction Storm Water General Permit and MPCA State Disposal System Permit for Dredged Material.

Nearby Resources are subject to mitigation by State Historic Preservation Office Section 106, Historical & Cultural Resources.

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 following environmental studies can assist in anticipating and controlling environmental effects from the Minnesota Falls Dam Removal project:

   Kettle Falls EAW, June 1994

   Summary of the Results of the Pool 5 and Pool 8 Drawdowns on the Upper Mississippi River, River Resources forum Water Level Management Task Force, July 2007

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 Minnesota Falls Dam Removal Project in Yellow Medicine and Chippewa Counties, Minnesota

7. Based on considerations of the criteria and factors specified in the Minnesota Environmental Review Program Rules (*Minnesota Rules*, part 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 Minnesota Falls Dam Removal 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 Minnesota Falls Dam Removal project in Yellow Medicine and Chippewa Counties, 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 27th day of September, 2011.

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

Mary P McConnell

Mary McConnell
Assistant Commissioner