Grey Cloud Channel Restoration Project
South Washington Watershed District

Record of Decision

In the Matter of the Decision of the Need for an Environmental Impact Statement for the Proposed Grey Cloud Channel Restoration Project in Grey Cloud Island Township, Washington County, Minnesota.

Findings of Fact, Conclusions of Law, and Resolution

Findings of Fact

A. The South Washington Watershed District (SWWD) as local sponsor is proposing to re-construct the Washington County Road 75 crossing over the inlet of Grey Cloud Channel to restore hydrologic connectivity with the Mississippi River main channel and to restore ecological functions and services.
B. The need for the proposed project results from construction of current road crossing which was constructed in the 1960s and completed severed hydrologic connectivity with the Mississippi River main channel. The Grey Cloud Channel is now stagnant and provides little ecological value.
C. The proposed project has long been a local priority of Grey Cloud Island Township and has been identified as a SWWD priority since the District expanded to include the former East Mississippi Watershed Management Organization, including the Grey Cloud Channel.
D. SWWD convened a Technical Advisory Committee (TAC) in 2012 consisting of representatives from Grey Cloud Island Township, Washington County, MN Department of Natural Resources, National Park Service, and the U.S. Army Corps of Engineers.
E. The TAC guided the completion of the District's Grey Cloud Slough Restoration Feasibility Study. That study evaluated several crossing options and identified the currently proposed project as the preferred alternative for several reasons, including:
    a. It provides the greatest hydrological connectivity with the main channel,
    b. It provides the greatest ecological and habitat benefit,
    c. It provides an opportunity to raise the roadway elevation to provide greater protection during high water,
    d. It provides recreational access to the channel, which is part of a State water trail and leads to a planned future County park.
F. Construction of the identified solution and currently proposed project was coordinated to coincide with planned roadway improvements in the area.
G. With funding secured, SWWD and Washington County entered into agreement to develop and construct the coordinated project with SWWD leading the crossing re-construction and Washington County leading roadway improvements.

H. During initial project development, SWWD held several meetings with interested residents to discuss potential environmental impacts resulting from the project. Citizen input was considered in the decision to pursue a voluntary Environmental Assessment Worksheet (EAW) .
I. As local sponsor and project proposer, SWWD prepared a voluntary EAW under Minnesota Rules 4410.1000 subp. 3 (D) to determine if the project had the potential for significant environmental effects.
J. The EAW was filed with the Environmental Quality Board (EQB) and a notice of its availability was published in the EQB *Monitor* on March 28, 2016. A copy of the EAW was sent to all persons on the EQB Distribution List. Press releases announcing the availability of the EAW were sent to newspapers in the area.
K. The EAW and supporting technical materials used in preparation of the EAW are incorporated by reference into the Record of Decision on the Determination of Need for an Environmental Impact Statement (EIS).
L. The 30-day EAW public review and comment period began March 28, 2016 and ended April 27, 2016 pursuant to Minnesota Rules part 4410.1600.
M. During the 30-day public review and comment period, SWWD received written response from 11 parties, 6 of which provided specific comment on the EAW, including:
    a. Metropolitan Council
    b. Minnesota Historical Society
    c. Minnesota Department of Transportation (No Comments)
    d. Minnesota Pollution Control Agency (No Comments)
    e. National Park Service (No Comments)
    f. Washington County
    g. Mr. Richard Polta
    h. Ms. Erin Polta
    i. Ms. Pam Dupre (No Comments)
    j. Mr. Russ Repke (No Comments)
    k. Minnesota Department of Natural Resources
N. Written responses received and SWWD's responses are compiled in Appendix A and incorporated by reference into this Record of Decision on the Determination of Need for an EIS.
O. Several comments received related to the need to clarify information provided in the EAW.
P. Several resident comments received questioned sediment transport analyses and modeling efforts completed as part of the feasibility study.
Q. Several resident comments received related to the need to involve other agencies in project development.
R. Clarification, where needed are noted in the response to comments in Appendix A.
S. In response to resident comments related to sediment transport analysis and modeling, SWWD issued a request for proposals for a third party review of completed modeling and analyses, ultimately contracting with InterFluve to complete the review.
T. The conclusion of the 3rd party review was that "[a]lthough rivers are dynamic environments and change is inevitable, lack of evidence of excessive deposition at the GCS inlet, results of HEI's sediment transport analysis, and location of other side channels noted to be rapidly forming within inundated broad floodplain areas with typical channel widths greater than

GCS suggests that the proposed GCS construction project will likely meet the hydraulic conductivity objectives outlined in the Grey Cloud Slough Feasibility Study (June 2012)."

U. In response to resident comments related to the need to involve other agencies, the response to comments in Appendix A reiterated the involvement of several agencies in project development as part of the District's TAC, inclusion of the proposed project in the MnDNR's and USACE's joint restoration proposal for Pool 2, and the expressed support for the project from MnDNR, NPS, Grey Cloud Island Township, Washington County, and Friends of Pool 2.

V. Minnesota Rules Part 4410.0200 Subpart 51, define mitigation as follows:
    a. Avoiding impacts altogether by not undertaking a project or parts of a project;
    b. Minimizing impacts by limiting the degree of magnitude of a project;
    c. Rectifying impacts by repairing, rehabilitation, or restoring the affected environment;
    d. Reducing or eliminating impacts over time by preservation and maintenance operations during the life of the project;
    e. Compensating for impacts by replacing or providing substitute resource or environments; or
    f. Reducing or avoiding impacts by implementation of pollution prevention measures.

W. The Rules of the Minnesota Environmental Quality Board set forth the following standards and criteria (Minnesota Rules part 4410.1700, subpts. 6 and 7) to which the effects of a project are to be compared to determine whether it has the potential for significant environmental effects:
    a. Type, extent, and reversibility of the environmental effects;
    b. Cumulative potential effects of related or anticipated future projects;
    c. Extent to which the environmental effects are subject to mitigation by ongoing regulatory authority; and
    d. The 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, including other EISs.

X. Based on the information contained within the EAW and provided in written comments received and in the responses to those comments, SWWD has identified no un-mitigated adverse environmental effects for the Grey Cloud Channel Restoration Project.

Conclusions of Law

1. SWWD has fulfilled all applicable procedural requirements of law and rule regarding the determination of need for an environmental impact statement for the Grey Cloud Channel Restoration project in Grey Cloud Island Township, Washington County, Minnesota.
2. *Type, extent, and reversibility of environmental effects*
   Based on the Findings of Fact, SWWD has determined that all potential environmental effects resulting from the project will be minor in type, extent, or are reversible. The determination of minor in type, extent, and reversibility incorporates environmental commitment and mitigation as described herein in item W. above.

3. *Cumulative potential effects of related or anticipated future projects*
   Cumulative effects are potential impacts placed within the context of the impacts caused by other projects. Those impacts may or may not result from the same or similar type of project. There is potential for beneficial cumulative effects resulting from proposed restoration of Pool 2 by MnDNR and USACE. Those potential effects were evaluated and addressed in the EAW. The currently proposed project is an integral part of those larger restoration proposals.
4. *Extent to which environmental effects are subject to mitigation by on-going public regulatory authority*
   The project will be subject to various on-going permitting and regulatory authorities, including:
   - Physical Impacts on Water Resources (MnDNR, Wetland Conservation Act, USACE, SWWD)
   - Effects on Surface Water Use (MnDNR)
   - Erosion and Sedimentation (MnPCA, SWWD)
   - Water Quality (MnPCA, SWWD)
   - Recreation and impacts to park resources (Washington County, Metropolitan Council)
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.*
   Environmental effects have been addressed in the current EAW. No subsequent environmental review is anticipated.
6. Based on consideration of the standards and criteria and factors specified in the Minnesota Environmental Review Program Rules (MN Rules Part 4410.1700, subpart 6 and 7) to determine whether a project has the potential for significant environmental effects, and on the Finding and Record in this matter, the SWWD determines that the proposed Grey Cloud Channel Restoration Project does not have the potential for significant adverse environmental effects.

SWWD Resolution #2016-006

Grey Cloud Channel Restoration Project Environmental Assessment Worksheet
Decision on the Need for an Environmental Impact Statement

WHEREAS, the South Washington Watershed District ("The District") has approved and locally adopted a comprehensive watershed management plan ("Plan") as defined by Minnesota Statutes Chapter 103B, 103D and 103E and Minnesota Rule Chapter 8410; and

WHEREAS, The District's Plan includes various projects to provide flood control, improve water quality, manage stormwater runoff and manage natural resources; and

WHEREAS, The District's Plan includes a capital improvement program; and

WHEREAS, The District's Plan includes the reconstruction of Washington County Road 75 crossing over the Grey Cloud Channel inlet for the purpose of restoring flow and ecological functions and services to the channel; and

WHEREAS, The District voluntarily completed an Environmental Assessment Worksheet for the project; and

WHEREAS, The Environmental Assessment Worksheet was published in the EQB Monitoring March 28, 2016 for a 30 day comment period; and

WHEREAS, The District has provided response to submitted comments; and

WHEREAS, The District has compiled a Findings of Fact summarizing the District's review of the proposed project; and

WHEREAS, The District has determined that there is not a potential for significant adverse environmental effects resulting from the project, and

NOW THEREFORE BE IT RESOLVED, that the South Washington Watershed District Board of Managers, based on the above Findings of Fact, does not order an Environmental Impact Statement for the Grey Cloud Channel Restoration project.

Manager Madigan moved the adoption of the foregoing Resolution #2016-006, and Manager Pereira seconded the adoption of the Resolution, and it was duly adopted by the Board on the 10th of May, 2016.

Jack A. Lavold, President

Donald L. Pereira, Secretary

Appendix A: Response to Comments

COMMENT ID	REVIEWER	LOCATION IN EAW	ORIGINAL REVIEW COMMENT	RESPONSE
1	Metropolitan Council	N/A	Council staff reviewed the EAW's accuracy, completeness, potential impacts, and the need for an Environmental Impact Statement (EIS). Council staff finds that the proposed project is consistent with regional policies and an EIS is not needed for regional purposes.	Noted.
2	Minnesota Historical Society	14. Historic Properties	Due to the nature and location of the proposed project, we recommend that a Phase I archaeological survey be completed… We will reconsider the need for survey if the project area can be documented as previously surveyed or disturbed…	A Phase I survey was completed in April of 2016. Survey results were negative and a finding of no properties affected was recommended. No further survey is planned. The full report is available at: http://www.swwdmn.org/wp-content/uploads/2016/04/Grey-Cloud-Phase-I-Report.pdf
3	Minnesota Department of Transportation	N/A	MnDOT has reviewed the document and has no comments.	Noted.
4	Minnesota Pollution Control Agency	N/A	Minnesota Pollution Control Agency (MPCA) staff has reviewed the EAW and have no comments at this time.	Noted.
5	Mississippi National River and Recreation Area, National Park Service	N/A	After reviewing the EAW we have no comments on the project at this time.	Noted.
6	Washington County	N/A	As a partner in the Project, Washington County supports the Grey Cloud Channel Restoration Project to improve and restore the ecological functions and services of Grey Cloud Channel, improve County Road (CR) 75, and provide for some reasonable passage of recreational sized small boats.	Noted.
7	Washington County	9. Landuse	The county comments are in the context of the Washington County Comprehensive Plan 2030 to protect and enhance natural resources and ensure transportation responsibilities for the health, safety, and welfare of county residents, ensure environmental compliance, and minimize environmental impacts. Washington County agrees that the project implements the natural resource goals of the comprehensive plan to preserve, manage, and utilize resources to promote a healthy environment for present and future generations. It also specifically addresses the goal to protect groundwater and surface water resources through coordination and collaboration with state and local water resources organizations.	Noted.
8	Washington County	8. Transportation	Based on the thoroughness of the document, references and findings in the EAW, there will be no substantive impacts to CR 75.	Noted.
9	Washington County	8. Transportation	Verify the 100-year flood elevation at the crossing. Note the elevation of the new bridge crossing in relation to a future flood stage elevation that would inundate the crossing.	Elevations are noted on page 69 of the EAW. The proposed roadway elevation is above the 500 year flood elevation.
10	Washington County	8. Transportation	Note that during construction, CR 75 will be closed approximately 1,000 feet North and South of the channel. When closed, access to local residences must be maintained. Alternate transportation routes can be accommodated along TH 61 then through Cottage Grove and St. Paul Park.	Noted.
11	Washington County	8. Transportation	CR 75 should continue to be upgraded and maintained in order to provide access to the existing gravel operations and the future Grey Cloud Island Regional Park.	Noted. The crossing will be designed with sufficient width to accommodate upgraded roadway and trail facilities in the future. Upgrade and maintenance of the roadway itself and construction of future trail facilities will the responsibility of the local transportation authority.

12	Richard Polta	11. Water Resources	These statements [pg. 25, post project sedimentation] pertaining to geomorphological process returning to normal, maintaining flow, water surface elevation drop of 2-3 feet, and minimal sediment buildup are not possible due to the construction of Lock and Dam 2 (LD2).	The SWWD disagrees. While lock and dam 2 have and will continue to have great impact on pool 2, work completed by the District and its partners over the past 4+ years suggests it is feasible to restore sediment transport dynamics in Grey Cloud channel. Additionally, the 2-3 foot elevation drop is documented within the Corps main channel HECRAS model. Comparing surface elevation difference between the mouth of Grey Cloud channel and downstream end of Mooers Lake, there is a 0.29' to 3.65'+ difference depending on river stage.
13	Richard Polta	11. Water Resources	Unless LD2 is removed it is impossible for the geomorphological process that formed the original channel to return.	Noted. Returning the Grey Cloud channel to pre-settlement conditions is not feasible, likely, or even possible given the degree of human manipulation on the river and its watershed. However, the goal of the project remains to restore ecological function and services to the channel. Per the recommendation of the District's Technical Advisory Committee (TAC) -restoring flow to the channel is the only way to restore those functions. The proposed project was identified as the preferred option by the TAC and has the support of Washington County, Grey Cloud Island Township, MnDNR, NPS, and Friends of Pool 2. Additionally, the proposed project is included in the MnDNR and USACE own restoration proposals for pool 2.
14	Richard Polta	11. Water Resources	I would ask to see the data to support the statements on pg. 25 under post-project sedimentation. Especially the 2-3 feet water elevation differential. And some type of physical evidence where manmade channels fill with sediment differently than naturally made channels.	Please see the Grey Cloud Slough Restoration feasibility report what was previously provided and available at http://www.swwdmn.org/wp-content/uploads/2016/03/Grey-Cloud-Slough-Feasibility-Report-Final.pdf. Modeling results are included in Appendixes C and D.
15	Richard Polta	11. Water Resources	There is a way to either support or reject the EAW statements on flows and sedimentation. If this is done I would request to part of this study to verify what information is given to, and requested of UOM for the study. The University of Minnesota St. Anthony Falls Laboratory 2 Third Avenue SE, Minneapolis, MN 55414, 612-624-4363, safl@umn.edu could do modeling work for this proposed project to either support or reject the EAW claims on flow and sedimentation. I have physically toured this facility and this is the type of modeling work that gets performed at this laboratory.	SWWD solicited SAFL, Inter-Fluve, and West Consultants for interest in completing a third party review of sediment transport modeling completed to date. All three have been uninvolved in the project and have the expertise to review and comment on the work. SAFL was uninterested. SWWD contracted with Inter-fluve to complete the review which is available at: www.swwdmn.org. Inter-Fluve agreed with the general approach and methods used for analysis while identifying some additional analyses that could strengthen and confirm current design recommendations. The District's design consultant is following up on those recommendations. Inter-Fluve's conclusion was as follows: "Although rivers are dynamic environments and change is inevitable, lack of evidence of excessive deposition at the GCS inlet, results of HEI's sediment transport analysis, and location of other side channels noted to be rapidly forming within inundated broad floodplain areas with typical channel widths greater than GCS suggests that the proposed GCS construction project will likely meet the hydraulic conductivity objectives outlined in the Grey Cloud Slough Feasibility Study (June 2012)."
16	Richard Polta	11. Water Resources	This section [post-project sedimentation] is in conflict with two other sections of the EAW. The effects of building of LD2 are noted two times in the EAW. See the following copied from the EAW…[pg. 3, pg. 19].	See response to comment 13.
17	Richard Polta	11. Water Resources	There is consistent agreement between all entities along all rivers that the building of Locks and Dams have created a barrier to sediment movement. And created pools for sediment to accumulate. This is true for all dams built.	Noted.
18	Richard Polta	11. Water Resources	Since the building of LD2. The lower half of pool 2 has become one large sedimentation basin. This has been going on for years but has been most noticeable in the last 10-15 years. The sedimentation during the last 10 years has become more noticeable due to the fact there is less underwater and side channels for the sediment to collect. The side channels are getting filled with more sediment every season. So there are fewer places for the sediment to accumulate that doesn't get noticed. With the side channels becoming blocked to flow, the sediment accumulation has been getting moved closer and into the main channel of the river. Noticeable sediment has become very visible by River mile	Noted. See Response to Comment 13.

			(RM) 818-220 in front of River Acres housing area.	
19	Richard Polta	11. Water Resources	Sediment collects in any side channel there is flow going into. It doesn't matter if it is a manmade or natural side channel. They all fill in with sediment. There is not one side channel in the lower half of pool 2 not filling in, or is filled in with sediment. All channels manmade, natural, short, long, break out, lateral, or main channel makes no difference, there filling with sediment. This is a fact and verifiable.	Noted. However, the SWWD believes that the -Grey Cloud Channel is unique. It short cuts the main channel, steepens in gradient compared to the main channel, and remains fairly uniformly narrow throughout its length. These characteristics make Grey Cloud better equipped to effectively transport sediment. Restoring sediment transport dynamics is one of the goals of the proposed project and modeling suggests it is feasible. The SWWD concedes there is a sediment problem in pool 2. That sediment problem is caused by manipulation of the river and destabilization of its watershed. While the State is beginning to address that problem (see South Metro TSS TMDL), it is likely to persist for the foreseeable future. The SWWD would suggest that keeping Grey Cloud blocked as it is today will only exacerbate the impacts of sediment on the channel as it will continue to fill in from tail water effects from downstream. Restoration of flow and sediment transport is the key to preserving and restoring ecological function of the channel.
20	Richard Polta	11. Water Resources	The sediment problem in Pool 2 has made a large impact on the navigational channel as well. Due to the side channels getting filled in, more sediment is getting dropped in the main channel. The US Army Corps of Engineers almost annually needs to dredge the navigational channel in the area of Spring Lake and Lower Greycloud Island, RM 818 thru RM 822.	Noted. The SWWD agrees that Pool 2 is heavily impacted by sediment. The corps has a long history of manipulating the river system to maintain a navigation channel. Those efforts require extensive ongoing maintenance because they are not supported by natural sediment transport dynamics. One purpose of the proposed project is to restore sediment transport dynamics to Grey Cloud Channel. Modeling suggests it is feasible and the third party review supports that finding.
21	Richard Polta	11. Water Resources	The navigational channel has narrowed so much due to sediment that is has at times limited the number of barges towboats push up the river from 15 to 12. LD2 gets calls from boaters asking why the water level in pool 2 is so low. The answer back, is the water level isn't low the river is full of sediment. I urge the engineers and administrator of this project to call LD2 and talk to Brian Gray the lockmaster at LD2. Ask about sediment, towboat grounding problems, and dredging in pool 2.	The SWWD concedes there is a sediment problem in pool 2. However, maintenance of an artificial navigation channel is irrelevant to restoration of natural sediment transport dynamics in Grey Cloud Channel. USACE participated as part of the District's Technical Advisory Committee which identified the proposed project is the preferred alternative to restore ecological function to Grey Cloud Channel. Further, the proposed project is included in Navigation and Ecosystem Sustainability Program (NESP), Pool 2 Restoration Project Proposal that was jointly developed by the MnDNR and USACE. The USACE will again have the opportunity to review the feasibility report, EAW, and project plans as part of its permitting process.
22	Richard Polta	11. Water Resources	The following areas in Pool 2 have or are filling with sedimentation. Some of these are manmade channels, others natural channels, lakes, and others main sections of the river itself. It really doesn't matter. The point being made both natural channels, manmade channels, main river channel are filling with sediment. I can take you to view these areas if requested…RM 834, 832, 831.5, 830, 829.8, 827.7, 826-827, 825.6, 825, 823-825.5, 822-823.8, 820-822, 819.5, 818-821, 818-819, 817-819 As one can see there is nowhere in the lower half of pool 2 that is not filling with sediment. Side channels or main channel areas. Anywhere the flow slows down the sediment in the water drops out.	See response to comments 19, 20, 21. Additionally, as noted in the 3rd party review of completed sediment transport modeling, several identified backwater areas with observed sedimentation maintain an active channel of greater width than the existing Grey Cloud Channel. This suggests that Grey Cloud can pass sediment without excessive sediment deposition.
23	Richard Polta	11. Water Resources	P. 25 of the EAW Post-Project Sedimentation leads one to believe that the Greycloud channel after project completion will return to its natural flow conditions which created the channel originally. And there will be approximately 2-3 feet of drop between the upstream and downstream ends and will continue to maintain flow after open flow conditions are re-established within the channel. These expectations are not possible due to the building of LD2 and its effect on sedimentation in pool 2.	See response to comments 12 and 13.
24	Richard Polta	11. Water Resources	The 2-3 feet in surface elevation differential will happen at times, but not maintain flow as stated in the EAW. During high river flows the difference in elevation will be greater, and during normal flows much lower. And will not maintain an average elevation differential of approximately 2-3 feet as stated. View the following pool elevation report from the Corps of Engineers. Nowhere in a year is there a consistent approximately 2-3 feet elevation differential from the upstream to the downstream ends of the channel as indicated in the EAW… Viewing the previous information I don't know how one could calculate the channel will have an	See response to comment 12.

			approximate 2-3 foot drop and maintain flow after open flow conditions are established. Yes part of the year there will be flow and other times little to no flow…	
25	Richard Polta	11. Water Resources	06-30-2013, time 0900 River flow 56,600 cfs Water differential from one side of Greycloud Island Drive to other side of the road at the project location was 51.5 inches. At this same time the differential at the box culvert on Mooers Lake was 19.5 inches. This condition where there will be little to no flow thru the Greycloud Channel when the river has low flow rates. And high flows thru the Greycloud Channel when the river has high flow rates, is not beneficial to what is trying to be accomplished with this project. One would think it was a good thing, but it isn't. Why is this not a good thing? When the river flows and water elevations are high the water contains lots of sediment. This sediment gets deposited in any slow water moving area. When the water recedes back to normal elevation the dropped out sediment eventually is higher than the water level. And the sediment blocks any normal water level flows.	As noted, water moves sediment. The proposed project will restore flow and sediment transport dynamics to a currently stagnant channel.
26	Richard Polta	11. Water Resources	I will explain how sedimentation moves and gets deposited in Pool 2 of the Mississippi River…	Noted.
27	Richard Polta	11. Water Resources	I don't want this project to be stopped or scrapped. But I want it done correctly. The project has environmental and recreational reason to move forward. And will be a beneficial project if done correctly.	Noted. SWWD has taken great steps to involve all interested local, state, and federal agencies in developing the project and drawn on licensed engineers experienced in river dynamics. A completed third party review lends further credibility to the proposed approach.
28	Richard Polta	11. Water Resources	There is an alternative plan I sent to Matt Moore. This would be to install a water intake structure west of Greycloud Island Drive not connected to roadway with flow control gates built into it. Then we could block the flow of water into the channel during periods of high flows containing high volumes of sediment. And open the control gates when the sediment level in the river lowers. No life cycle cost estimate has ever been calculated using this option verses the bridge option. I am convinced this option would meet the original project goals "restore ecological conditions in the channel".	The proposed alternative does not restore sediment transport dynamics and does not meet the goals of the project. It would result in another large scale manipulation of pool 2 with extensive annual operation and maintenance costs.
29	Richard Polta	11. Water Resources	This brings up another issue. How much flow do we actually need in the channel to provide restoration? Will a water intake structure provide this? Truth being told no one really knows or has said.	This information is extensively covered in the feasibility report and was a primary criterion for differentiating the benefits of various alternatives considered by the Technical Advisory Committee. As indicated in the feasibility study between 230 and 300 cfs is desired to achieve the desired water quality improvements.
30	Richard Polta	11. Water Resources	One point that never gets brought up is even if a bridge gets installed. There are periods during low river flow conditions, where there will be little to no flow thru the channel. This will happen no matter what type structure gets installed. To give you an example, there are times I have seen the water flow going east to west thru the box culvert on the east end of Moore's Lake. This is rare but it happens. When we get these conditions there will be little to no flow through the Greycloud channel.	Noted. The proposed project will restore the full range of hydrological conditions to the channel. Median and low summer flows were considered in evaluating alternative feasibility.
31	Richard Polta	11. Water Resources	Back to how much flow do we need? We can compare the flow that comes from the River, thru Baldwin Lake, thru Mooers Lake, thru the box culvert on the east end of Mooers Lake, under the Steel Bridge on Greycloud Trail, past Mississippi Dunes golf course, down to River Acres, and back to the river. This flow is controlled/limited by the size of the concrete box culvert on the east end of Mooers Lake. This culvert is 10 feet wide by about 2.5 feet deep during normal water levels. Total of 30+ square feet of opening being used. And it seems to be enough flow to keep these water bodies mostly free of accumulated algae.	See response to comment 29.
32	Richard Polta	11. Water Resources	Using the previous example and applying it to the Greycloud Channel we could probably get by with a water opening of about 20-30 square feet. With adjustable gates we can adjust the flow as needed. Also the Grey Cloud Channel is much narrower than the other water bodies listed above, so the amount of flow needed should be considerable less. We can do this with a water intake structure.	See response to comments 28 and 29. The feasibility study indicates that a minimum opening of 256 square feet is required to achieve the necessary flow (230-300 cfs) that will restore the water quality.

33	Richard Polta	11. Water Resources	In summary the EAW does not contain any verifiable information that after project completion the following will occur as stated concerning flows and sedimentation: The channel has a difference in water surface elevation of 2-3 feet…To the contrary I have given verifiable supporting information which disclaims this. [USACE pool 2 elevation table] Although there will be enough differential to accomplish what this project originally started out to do. Establish just enough flow to remove stagnant water in the Greycloud Channel. "If the project is done correctly." Currently as proposed the project will not be done correctly.	See response to comments 12, 28 and 29. The primary intent of the project is to restore the ecological functions of the channel. As stated in the feasibility study; "The primary goal is to restore the ecological functions and services provided by the meander to a condition more reflective of a "natural" system by reestablishing the longitudinal connectivity. A more natural condition is defined as at a minimum, the conveyance, flow, and hydraulic conditions, which existed prior to the installation of the current culverts[3] assuming proper function. Please refer to the footnote in the feasibility study on page 5.
34	Richard Polta	11. Water Resources	There is not one location or other example given in the EAW for Pool 2 to support the claim about different type channels being more or less prone to sedimentation…To the contrary I have listed areas in Pool 2 which have or are filling with sediment… I can show where and how sediment forms in any of the channels in pool 2. Others can do the same. USACE, Aggregate Industries, Upper River Services, staff at LD2. All a person needs to do is stand way back and look at the entire lower half of pool 2 from St Paul to LD2….no doubt it is filling with sediment…	See response to previous comments.
35	Erin Polta	11. Water Resources	I wanted to reiterate the comments made by Richard Polta…	See response to previous comments.
36	Erin Polta	11. Water Resources	The depths of various channels have decreased very drastically due to channel areas filling in over the years. In places where we used to have no issues navigating, water levels currently hover around 10 inches at times, or can be totally impossible to travel through.	See response to comment 19.
37	Erin Polta	11. Water Resources	It is my concern that with the proposal for the bridge project, the sedimentation rate will increase. Soon, all families who own properties or travel to utilize this area will no longer have usable river channels to boat on.	See response to comments 13 and 19. Further, the channel is currently stagnant and much degraded. It provides little to no habitat benefit. The proposed project will restore ecological functions and services while improving recreation and transportation access.
38	Erin Polta	11. Water Resources	I encourage you to talk with the US Army Corps of Engineers, Upper River Services, Aggregate Industries and others who use and are familiar with the river who can tell you more about the sedimentation issues. I would hate to see hasty, uninformed decisions made that will eventually lead to very expensive dredging and repair costs for this mistake.	See response to comments 13, 21, and 27.
39	Pam Dupre	N/A, in response to Mr. Polta	Dick, This response is very well written and shows there is no doubt the current project is NOT the way we should be going if we want to preserve the back channel…	Noted.
40	Russ Repke	N/A, in response to Mr. Polta	The filling of the side channels is very real. Dick is 100% right. I wonder how many of you have seen the side channels that have filled in, or have even been on the river…	Noted.
41	MnDNR	N/A	The Grey Cloud Channel is located within the Mississippi River Corridor Critical Area, a designated segment of the Mississippi River through the Mississippi River Critical Area Program (Program). Grey Cloud Channel is currently an area that has a lower ecological value when compared to surrounding aquatic habitat in Baldwin Lake, Spring Lake, and the Mississippi River main channel due to the current no-flow conditions caused by the road project that occurred in the 1960s. Restoring the hydrological connectivity to this channel would go towards supporting the goals of the Program by improving ecological value and function.	Noted.

42	MnDNR	6. Project Description	The Public Water Inventory Number 19000500 includes all waterbodies that comprise U.S. Lock and Dam #2 Pool. To be more specific, the DOW for the project area is 19000599	Noted.
43	MnDNR	11. Water Resources	Please incorporate impacts of the invasive curly-leaf pondweed into the discussion of water quality issues caused by lack of connectivity with the Mississippi River. Curly-leaf pondweed senesces in mid-summer and feeds algae blooms. Dissolved oxygen sensors deployed by DNR have documented declines in summer oxygen levels due to curly-leaf pondweed, causing water quality issues.	Noted. The discussion should have included discussion of CLP which exacerbates ongoing issues of degraded habitat within the channel. The EAW does recognize the poor habitat of the channel. Addressing these issues is the primary purpose of the proposed project.
44	MnDNR	11. Water Resources	We appreciate your efforts to use native seed mix and recommend a mix that is BWSR-approved and tagged as noxious weed free. In addition, we recommend the use of wildlife friendly erosion control to prevent wildlife entanglement or death from other types of erosion control products and we advise all contractors to clean equipment before arriving on site in order to minimize the introduction and spread of invasive species.	Noted. Details will be added to the project specifications to reflect DNRs recommendations.
45	MnDNR	11. Water Resources	Please refer the reader to the appropriate section of the Feasibility Study that provides a discussion of how computer modeling models post-project sedimentation, and how the output from the model was analyzed to provide the results in the EAW. In the EAW it is unclear as to what process was followed to develop the results presented within this section.	Noted.
46	MnDNR	11. Water Resources	According to MN rules 6115.0231 Subp. 2D, three feet above the calculated 50-year flood stage ordinarily satisfies navigational clearance requirements. For bridges over public waterbasins or public water wetlands, and all culverts, three feet of clearance above the ordinary high water level ordinarily satisfies navigational requirements.	Noted. Compliance with navigational requirements will addressed during final design and permitting.
47	MnDNR	13. Fish, Wildlife, etc.	“These fish species concentrate between St. Paul airport and I-694 bridge during autumn and winter months.” This information was cited correctly, however, the DNR website is incorrect. The correct location that should be mentioned is the I-494 bridge. DNR is taking steps to correct this information on our web page.	Noted.
48	MnDNR	13. Fish, Wildlife, etc.	“Smallmouth bass are slightly over-fished, though present in good numbers.” The DNR website states that smallmouth bass are lightly fished.	Noted.
49	MnDNR	Appendix A	According to the DNR’s public waters inventory, Mooers Lake (DOW #19000503) is entirely west of Grey Cloud Island Dr. The portion east of Grey Cloud Trail is Grey Cloud Slough (DOW #19000505); we refer to it as Lower Grey Cloud Slough. The historic photos on pages 52-59 appear to be labled correctly. However, on pages 60-67, the area east of Grey Cloud Trail is labeled as Mooers Lake. We understand that Google Maps labels the area in this way, which can add some confusion, however, please correct the label placement on pages 60-67 to properly match DNR’s PWI.	Noted.