

# Project Management Plan

## Minnehaha Creek Watershed Specifically Authorized Feasibility Study

**1. PURPOSE:** The purpose of this Project Management Plan (PMP) is to identify the plan, scope, schedule, and budget for the Minnehaha Creek Watershed Feasibility Study.

**2. APPLICABILITY:** This PMP provides the Project Delivery Team (PDT, see **Section 11.0**) guidance for the execution of the Minnehaha Creek Watershed Feasibility Study.

**3. REFERENCES:** Since the signing of the Federal Cost Sharing Agreement on January 14, 2003, the Minnehaha Creek Watershed District has published a number of reports that are pertinent to this study. **References 3.c., 3.d., 3.e., 3.f., 3.g. and 3.j.** were used to develop this PMP and cost estimate and will continue to be important references as the study progresses. In September 2003, the St. Paul District contracted with an engineering consultant to review these reports and other plans and studies as a starting point for the development of this PMP. That report also investigated problems and opportunities, data needs (inventories) and provided recommendations for further study (see **Reference 3.k.**).

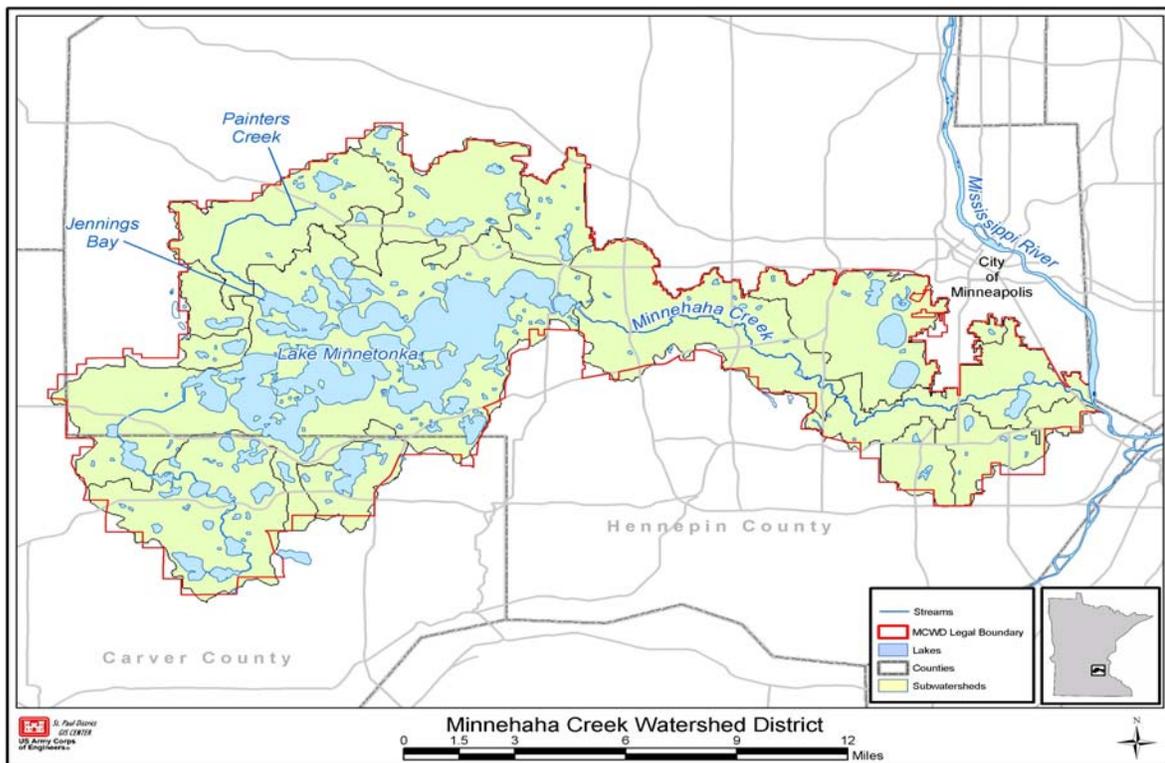
- a. Reconnaissance Study, Upper Mississippi River, Lake Itasca to Lock and Dam 2, Multiple Purpose Watershed Management, Federal Interest Assessment, U.S. Army Corps of Engineers, St. Paul District, June 2001. (This report contains the Section 905b documentation.)
- b. Minnehaha Creek Watershed District Watershed Management Plan (1997 509 Plan), Minnehaha Creek Watershed District, Wenck Associates, January 1997.
- c. Hydrologic & Hydraulic Pollutant Loading Study (H&HPLS Model), Minnehaha Creek Watershed District, Emmons and Oliver Resources Inc., 2003.
- d. Functional Assessment of Wetlands Report, Minnehaha Creek Watershed District, HCD Inc. and Barr Engineering, 2002.
- e. Education and Communications Plan and Audit, Minnehaha Creek Watershed District, RRA and MSC Inc., 2003.
- f. **Final** Minnehaha Creek Stability and Habitat Assessment Report, Minnehaha Creek Watershed District, Inter-Fluve Inc. Project No. 03-04-05, Sept. 30, 2003.
- g. Minnehaha Creek Watershed District 2002 Hydrologic Data Report, Wenck Associates, March 2003. **More reports available from MCWD annual publishing?**
- h. Letter from Michael Wyatt, Minnehaha Creek Watershed District, to Kenton Spading, U.S. Army Corps of Engineers, dated 13 January 2004.
- i. **Final** letter from Michael Wyatt, Minnehaha Creek Watershed District, to Kenton Spading, U.S. Army Corps of Engineers, dated 4 February 2004.
- j. Painters Creek Study, Minnehaha Creek Watershed District, Emmons and Oliver Resources Inc., February 2004. (This report discusses the restoration of the Painters Creek ecosystem from Lake Minnetonka to Lake Katrina to include improving the water quality of inflows into Lake Minnetonka.)
- k. Scope of Work Report, Summaries of Minnehaha Creek Watershed District Plans/Studies/Reports, Prepared by HDR Inc. for the U.S. Army Corps of Engineers, St. Paul District, January 30, 2004.

- l. Project Study Plan, Minnehaha Creek Watershed District, Feasibility Study, U.S. Army Corps of Engineers, St. Paul District, November 2002.
- m. 1935 Report
- n. EOR's XP 2005 Report
- o. Corp's 2005 RES-SIM Report
- p. In Progress Review, Briefing Document, U.S. Army Corps of Engineers, St. Paul District, June 2004.
- q. Wenck recommendations: report related to (f) Minnehaha Creek Stability and Habitat Assessment Report, Minnehaha Creek Watershed District, Inter-Fluve Inc. Project No. 03-04-05, Sept. 30, 2003 (draft).
- r. Draft Comprehensive Watershed Management Plan, MCWD
- s. Gary M's precipitation report (Dan Reinartz will know...is this already included in the RES-SIM report in 'o' above?)
- t. Methodist Hospital, Remeander Report?
- u. Urban Stream Restoration Report – See Kenton
- v. Written comments from New York District
- w. In Progress Review-Memorandum for Record (documenting the formal agreement)

**4.0 GENERAL BACKGROUND:** This is a Specifically Authorized General Investigations Study. The 905(b) analysis was prepared as part of the Reconnaissance Study, Upper Mississippi River, Lake Itasca to Lock and Dam 2, Multiple Purpose Watershed Management, Federal Interest Assessment (see **Reference No. 3.a.**). The specific authorization for this study is provided in Resolution of the U.S. House of Representatives Committee on Transportation and Infrastructure, Docket 2597, dated April 15, 1999.

**4.1. Location:** The Minnehaha Creek Watershed District (MCWD) is located primarily in Hennepin County, Minnesota. The watershed covers approximately 181 square miles in the Minneapolis metropolitan area and western suburbs. It drains into the Mississippi River below Lock and Dam No. 1. The watershed includes natural resources of significant value including Lake Minnetonka, Minnehaha Creek, the Minneapolis Chain of Lakes and Minnehaha Falls. There are eight major creeks, 129 lakes, and thousands of wetlands within the MCWD. The MCWD also includes all or part of 27 cities and three townships in Hennepin and Carver Counties.

The watershed is divided into upper and lower subwatersheds (with dozens of subbasins). The upper subwatershed comprises the drainage area above Grays Bay Dam, which is at the outlet to Lake Minnetonka. This subwatershed is mostly rural but experiencing rapid development. The lower subwatershed is the area below Lake Minnetonka, which is mostly urban. The main channel of Minnehaha Creek begins at the outlet of Lake Minnetonka/Grays Bay Dam and runs through the lower watershed. Flows in the creek are largely dependent on the operation of the Dam. See the map below. See [http://www.minnehahacreek.org/pdf/Canoe\\_Route.pdf](http://www.minnehahacreek.org/pdf/Canoe_Route.pdf) or <http://www.minnehahacreek.org/pdf/map.pdf> for additional maps of the watershed.



**4.2. Sponsor:** The Minnehaha Creek Watershed District (MCWD) is the sponsor. The MCWD is the regional governmental unit chiefly responsible for protecting the water resources of the Minnehaha Creek watershed.

A seven-member Board of Managers, appointed by the Hennepin and Carver County Boards, governs the MCWD. As required by State law, the MCWD has developed a 10-year Watershed Management Plan (a 509 Plan) that describes the existing water resources issues within the watershed. The plan sets forth the goals and direction of the MCWD, and the current plan is dated 1997 (see **Reference 3.b.**). With assistance from the Corps, an updated draft of this plan will be released in January, 2006. After revisions are made later during 2006, the final version will be implemented in January, 2007. For more information on the existing plan and the Minnehaha Creek Watershed District, go to: (<http://www.minnehahacreek.org>).

**4.3. Feasibility Study Objectives, Constraints and Products:** The team will prepare a cost-shared feasibility report and associated NEPA document in accordance with Corps Planning Guidance Document ER 1105-2-100 and the Project Management Plan. The feasibility study will include the development of a Comprehensive Watershed Management Plan (CWMP).

**Objectives:** The focus of the feasibility study will be on the following objectives:

- Determine the flow regime in Minnehaha Creek that meets both human and ecosystem needs thru a highly involved stakeholder process.
- Preserve and enhance connective ecosystems (greenway corridors) on creeks leading to Lake Minnetonka and along Minnehaha Creek.

- Improve the chemical and physical quality of surface water both in creeks and lakes. Investigate options for improving the water quality in Painters Creek/Jennings Bay and 6-Mile Creek/Halsted Bay (40 to 60 T<sub>p</sub> is desired in 5 to 10 yrs)
- Minimize obstructions to recreational boating and fish passage along Minnehaha Creek.
- Integrate public recreation features into multipurpose project formulation whenever possible.
- Preserve, protect and restore the natural appearance and function of riparian/shoreline ecosystems throughout the watershed.
- Reduce the severity and frequency of flooding along Minnehaha Creek.

These objectives will be further refined and quantified as part of the public/stakeholder involvement process during plan formulation. Conflicts between objectives will be resolved through this process. Milestone information can be found in **Section 14.0**.

**Constraints:** The following constraints have been identified:

- **ER 1105-2-100, Urban Flood Control:** The aforementioned flood control-related reports from the Cities of Minneapolis and St. Louis Park (see **Figure 2**) identified over 70 problem flood areas. However, a cursory policy review indicates that the problem flood areas may not have a federal interest due to the regulations set forth in ER 1105-2-100, Appendix E, Section E-18, Paragraph g. (page E-88). As a result, it is unlikely that flood damage reduction projects will be found in the federal interest. However, storm water management may be incorporated into an ecosystem restoration project. The ER states:
  - In Urban and urbanizing areas provision of a basic drainage system to collect and convey local runoff is a non-federal responsibility.
  - Water damage problems may be addressed downstream from the point where the flood discharge is greater than 800 cfs for a 10 percent chance flood.
- **High Density Urban Corridor:** High-density urbanization in the Lower Subwatershed (along Minnehaha Creek) limits the available solutions to problems in that area.

**Feasibility Study Products:** The product of this feasibility study will be a Feasibility Report and associated NEPA document. The report will include:

- A discussion of the federal planning process used in the study.
- Data and information that will be used in the development of a Comprehensive Watershed Management Plan (CWMP).
- An analysis of projects that have a federal interest.

**4.4. Type of Project:** Both watershed management plan/system and site-specific evaluations, to include projects with a potential federal interest, will be investigated. The feasibility study analysis will include:

#### **4.4.1. Comprehensive Watershed Management Plan (CWMP)**

**Evaluations:** The feasibility study will include the development of a CWMP to assess the overall needs of the watershed. The study will include a public stakeholder process (see **Section 9.0**) to allow the constituency to contribute input on the future management of water resources, particularly within the lower watershed (the primary focus being on Minnehaha Creek). Through this process, the stakeholder group(s) will be presented with four conceptual scenarios of water management. The following is a summary of the proposed plan formulation for executing steps three through five of the federal planning process. In addition to the existing conditions, technical analyses will be done for the following scenarios:

1. Business-as-usual
  - Not necessarily “business-as-usual” for the MCWD, but essentially the same as the no-build option regarding water resource improvement projects. The MCWD will present to the group a vision of the future conditions of the watershed if development and redevelopment were to continue unabated and if the Watershed District were not to perform any projects within the basin. The group would be faced with the question of whether or not the model-forecasted future conditions of the area water resources are acceptable from a social standpoint.
2. Maintenance of the Status Quo
  - From this prospective scenario, the MCWD would apply water resources projects only when it is shown that a clear decline exists in trend data obtained through water quality monitoring. The application of projects would be reactive only to a demonstrated need.
3. Maximization of Recreational Benefits
  - The Recreation scenario focuses on how water resource use by people can be maximized through water quality improvements focusing on resource aesthetics, maintenance of recreational access, and minimization of threats to public health. Projects would thereby be applied to priority recreational resources and focus on maximizing the recreational value of the resource.
4. Aquatic Ecosystem Restoration (AER)
  - The stakeholder group would be presented with a scenario that focuses on creating, preserving, and enhancing the habitat value of area water resources. Projects would be tailored to maximize AER while benefits attributed to the aforementioned three scenarios would be considered to be of secondary benefit. AER may include projects with a federal interest.

The Corps will analyze each of the above scenarios in light of the following values (see **Table 4-1**):

- Water quality
- Water quantity
- Ecological function

**Table 4-1  
Minnehaha Creek Watershed  
Comprehensive Watershed Management Plan  
Management Scenarios and Values for Soliciting Stakeholder Input**

Values	Watershed Management Scenarios (5)			
	Business As Usual (1)	Status Quo (2)	Recreation (3)	Ecosystem Resto (4)
<b>Water Quantity</b>	Flow Duration + Discharge-Freq Plots	Flow Duration + Dis-Freq Plots	Flow Duration + Dis-Freq Plots	Flow Duration + Dis-Freq Plots
<b>Water Quality (6)</b>	Water Quality vs. Time Plots	Water Quality vs. Time Plots	Water Quality vs. Time Plots	Water Quality vs. Time Plots
<b>Ecological Function</b>	Habitat Units vs. Time Plots	Habitat Units vs. Time Plots	Habitat Units vs. Time Plots	Habitat Units vs. Time Plots

1. Business As Usual = Future conditions of the watershed if development were to continue unabated and if the Watershed District were not to construct any projects within the basin.  
2. Status Quo = Construct future water resources projects only when it is shown that a clear decline exists in trend data obtained through water quality forecasting and/or monitoring  
3. Recreation = Construct future water resources projects with a priority placed on recreational resources focusing on maximizing the recreational value of the resource.  
4. Ecosystem Restoration = The stakeholder group would be presented with a scenario that focuses priority on creating, preserving, and enhancing the habitat value of area water resources.  
5. The plots will be developed for 10 nodes all of which are assumed to be on creeks.  
6. It is assumed that the water quality parameters will include total phosphorous, total nitrogen and total suspended solids.

The outcome of the stakeholder process will likely be a hybrid of two or more of the four scenarios in combination with the three values. The outcome/recommendation will then be considered by the MCWD Board for incorporation within the MCWD Comprehensive Water Resources Management Plan.

Because of the nature of watersheds and watershed management, a systems-based approach to the analyses of the water resources is necessary. A systems-based approach looks at how the entire system is managed rather than just site-specific solutions to perceived problems. In light of this, a watershed management plan will be developed prior to identifying specific site solutions to meet that plan. It is the intent of this study that the plan and philosophy of water management meet the identified human needs of the watershed as well as the requirements of the ecosystem. The MCWD is partnering with the USACE to fully analyze the existing problems and challenges facing the watershed (in particular the lower watershed).

**4.4.1.a. CWMP Computer Models:** Computer models will be used to provide input to the development of the CWMP (see **Table 4-1**). The Corps' RES-SIM reservoir routing model will be used to model water levels in Lake Minnetonka and route flows throughout the watershed for the period 1930 thru 2004. General information on RES-SIM can be found at: <http://www.hec.usace.army.mil/software/hecrsim/hecrsim-hecrsim.htm>. The Watershed District's existing XP-SWMM rainfall-runoff model, contained within their Hydrologic, Hydraulic and Pollutant Loading Study (HHPLS) model, (see **Reference 3.c.**) will be used to provide inflows to the lake and incremental flows from the subbasins. The XP-SWMM model will use rainfall for the period 1930-2002 to simulate discharges in the watershed. This combined modeling effort will provide the input necessary for the flow-duration curves and future conditions in the year 2020. The discharge-frequency curves listed will be developed from data developed from the RES-SIM model or, alternatively, from U.S. Geological Survey regression equations. See **Table 4-1**.

It is assumed that data for the scenarios and values listed in **Table 4-1** will be needed at 4 nodes/locations in the upper basin and 6 locations in the lower basin (10 total). All the nodes will be on creeks.

The Water Quality data listed in **Table 4-1** for the 10 creek locations will be developed for the CWMP from output from the RES-SIM model and the HHPLS P-Load module. It is assumed that the parameters will include total phosphorous, total nitrogen and total suspended solids.

The Ecological Function data listed in **Table 4-1** for the 10 creek locations will be developed for the CWMP from field surveys and existing procedures such as the U.S. Fish and Wildlife's Habitat Evaluation Procedures (HEP) Handbook and the Ecosystem Function Model (EFM).

**4.4.1.b. CWMP, Additional Input:** The feasibility study will include recommendations (brief analyses and short write-ups) on potential storm water detention pond locations (20 Man-days budgeted), modifications to storm water outfalls (5 Man-days budgeted) and the future utility of developing a Watershed Management System (WMS) model or Gridded Surface Subsurface Hydrologic Analysis (GSSHA) model (5 Man-days budgeted).

**4.4.2. Site-specific Evaluations:** After a mutual understanding is developed on how the watershed will be managed, opportunities for water resource improvements that meet the overall goals of the MCWD's CWMP will be addressed.

The plan formulation strategy for developing this PMP assumed that initially 11 projects/plans would be identified as having a potential federal interest. It is assumed that the list will be narrowed down to 3 projects to be carried forward into the construction phase (after the Feasibility Report is approved).

**4.4.2a. Site-Specific Project/Plan Formulation Assumptions:** The *assumed list* of site-specific projects, with a potential federal interest, used to develop the cost estimate during the plan formulation process leading up to this PMP, are listed below. **References 3.c., 3.d., 3.f., 3.h., 3.i., 3.j., and 3.k.** were valuable sources for developing this list.

**Upper Watershed (above Grays Bay Dam, Lake Minnetonka):**

1. Stream corridor/wetland restoration project, assumed to involve approximately 1,000 acres of wetlands and 6 miles of creek corridor.
2. Stream corridor/wetland restoration project, assumed to involve approximately 1,000 acres of wetlands and 6 miles of creek corridor.
3. Stream corridor/wetland restoration project, assumed to involve approximately 300 acres of wetlands and 2 miles of creek corridor.
4. Stream corridor/wetland restoration project, assumed to involve approximately 150 acres of wetlands and 1 mile of creek corridor.

**Lower Watershed (Minnehaha Creek below Lake Minnetonka):**

5. Weir/Dam removal (see note below)
6. Weir/Dam removal

[Nos. 5 and 6: Weirs are assumed to be 30 ft. L, 5 ft. D, 6 ft. W, 200 ft. access road, 60 mi. RT disposal hauls, existing weir elev. maintained, restore to a "rapids", no sediment removal, no gate removal, see **Enclosure 1**]

7. Riparian corridor restoration (assumed reach near Lake Nokomis)
  8. Riparian corridor restoration (assumed reach near Meadowbrook Lake)  
[It is assumed that Nos. 7 and 8 will be stream reaches 2,000 ft. long and 200 ft. wide.]
  9. Bio-engineered bank restoration reach/site, 200 feet long
  10. Bio-engineered bank restoration reach/site, 200 feet long
  11. Bio-engineered bank restoration reach/site, 200 feet long
- [Go to [\\Mvpgis\Cauton-ModificationWithoutNotice!\Minnehaha\\_Creek\\_Photos](\\Mvpgis\Cauton-ModificationWithoutNotice!\Minnehaha_Creek_Photos) for pdf maps with links to photos of stream reaches and field trip photos.]

It is assumed that, from this list, only Nos. 1, 5 and 8 will be carried forward in detail in the Feasibility Report as recommended specifically authorized projects. The other 8 will be found to either not have a federal or local interest or, depending on the availability of funding, be better suited for the Section 206 Ecosystem Restoration program, Section 1135 program or similar. The above generic examples were used for the cost estimate contained in this PMP. The actual list of projects could be quite different from this depending on the outcome of the 6-step federal planning process to include the gathering input from the stakeholders (see **Section 9.0**).

**4.4.2b. Site-specific Evaluations Computer Models:** The aforementioned RES-SIM, XP-SWMM and P-Load models will be used as necessary to evaluate projects with a potential federal interest. In addition, the Corps' Environmental Function Model (EFM) will be used to evaluate the stream corridor/wetland restoration project (for example: Painters Creek). For information on the EFM model see:  
[http://www.hec.usace.army.mil/misc/watershed\\_conference/PDF\\_Files/Dunn\\_and\\_Hickey.pdf](http://www.hec.usace.army.mil/misc/watershed_conference/PDF_Files/Dunn_and_Hickey.pdf)

**5.0 TECHNICAL AND POLICY CRITERIA:** This study will be planned and conducted in accordance with the Corps of Engineers criteria contained in the Planning Guidance Notebook (Engineer Regulation (ER) 1105-2-100), Corps ERs, Engineer Circulars, and Engineer Manuals, and Policy Guidance Letters. The project will be evaluated and implemented to meet National Environmental Policy Act (NEPA) requirements.

Selected guidance applicable to watershed planning includes: CECW-AA Watershed Perspective Policy Guidance Letter No. 61 dated 27 January 1999, CECW-BW, Implementation Guidance Letter for Section 202, WRDA 2000 (Watershed Assessments) dated 29 May 2001 and CECW-P, EC 1105-2-404 (Planning and Environmental Principles) dated 1 May 2003.

**6.0 QUALITY CONTROL:** The internal/Corps coordination and preparation involved in preparing this document play a major role in maintaining quality control. Another important component is the integration of an Independent Technical Review (ITR) team by a sister Corps District and/or Corps laboratory. Quality Control will also be monitored via Higher Authority/vertical team conferences and reviews. The PMP was submitted for ITR. Additional ITR work will take place later in the feasibility phase to ensure that a high quality technically sound product is developed. Additional details of this will be developed further later in the feasibility phase.

**7.0 RISK ASSESSMENT:** The Local Sponsor is in full support of the project and receives a levy in the amount of \$3 to \$4 million annually. Financial limitations on the part of the Local Sponsor are always a possibility, but are unlikely for this project.

Future federal funding, however, is uncertain. In the project area, there is the potential for a lack of economic and environmental justification regarding federal projects.

Political support for this project has been strong. A resolution indicating support is currently being circulated to affected political stakeholders for signature.

No critical habitat will be affected by the project; however, there are some existing cultural resources.

**8.0 ACQUISITION PLAN:** The work will be accomplished by in-house personnel and through In-Kind services from the local sponsor. An acquisition plan will be used to acquire any contracts/services for the project for Small and Disadvantaged Businesses (SABD). At this time, there are no plans for SABD contracts related to the Minnehaha Creek Watershed Project.

**9.0 COMMUNICATION PLAN:** The MCWD feasibility study will require input from many different work elements, the Sponsor, and other external organizations, such as consultants, and other government agencies. Proper coordination among these study participants is essential to maintain the project schedule, to avoid duplication of efforts, to detect problems in a timely manner, to satisfy NEPA requirements, and to maintain agreement and cooperation on the direction of the study.

**9.1. Internal Coordination Mechanisms:** Internal coordination mechanisms will be used to ensure that effective internal command, control, and coordination are maintained during the feasibility study.

**9.2. External Coordination Mechanisms:** Coordination external to the Corps of Engineers and the local sponsor will be necessary to ensure the success of the feasibility study. The Watershed District's Public Affairs officer, the Corps' Public Affairs office, the Corps' Public Information Specialist and the MCWD and Corps Project Management team will coordinate all external communications and meetings. In addition to printed and electronic communications, there will be four levels of external coordination as follows:

**i. Appointed Citizens/Public Team Committee:** This team will be nominated by local government stakeholders (two per stakeholder, nine by the MCWD; 23 total) with the primary focus being on the lower watershed area. The focus of the appointed citizens group is to develop recommended actions and to explore the social feasibility of recommendations. The team will include representatives from:

- City of Minneapolis (2)
- City of Edina (2)
- City of St. Louis Park (2)
- City of Hopkins (2)
- City of Minnetonka (2)
- Minneapolis Park Board (2)
- Hennepin County (2)
- Citizens of the Watershed nominated by the MCWD (9)

The nine MCWD appointees are intended to represent a larger voice for interests in the creek by including individuals with an interest in the environment, development/business, recreational (canoeists, anglers), etc. Local interest groups (for example environmental)

will be asked to participate with this committee or, if appropriate, on the Technical Committee. The meetings will be scheduled throughout the study period to gather input, report on study progress, or report study findings. Each meeting will be announced to the general public thru press releases, the web site, mailings etc. in order to ensure wide coverage. Interested citizens (outside of the 23 committee members) will be welcomed to attend the meetings. Each meeting's agenda will include an opportunity for these citizens to offer comments and ask questions. Written comments and questions (or phone inquiries) will also be encouraged. The meetings will be conducted in the following three phases (12 meetings total):

**Phase 1: Watershed Education (4 Meetings)**

Goal: Inform and educate the general group on relevant issues concerning existing and future conditions of the watershed.

Outcome: The group will be prepared to evaluate existing MCWD information and make an informed recommendation regarding the MCWD role in managing area resources.

**Phase 2: Watershed Scenarios (4 Meetings)**

Goal: Present and discuss different scenarios of watershed management.

Outcome: Development of a preliminary plan for review by the Technical Committee.

**Phase 3: Final Plan Development (4 Meetings)**

Goal: Review and revise technical recommendations.

Outcome: Final Plan recommendation for presentation to elected officials.

**ii. Technical Committee:** This team consists of technical representatives of each of the local government partners, the Watershed District and the U.S. Army Corps of Engineers. In addition, representatives from the Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Minnesota Department of Health will be invited to participate. This team will explore the technical feasibility of recommended actions, provide comments, coordinate with external agencies, and revise plans and alternatives. This team will meet on an as needed basis, which is projected to be 4, or 5 times during the course of the study.

External agency counterparts for the environmental work effort include the U.S. Environmental Protection Agency, Advisory Council on Historic Preservation, U.S. Fish and Wildlife Service, State Historic Preservation Officer, and State of Minnesota.

**iii. Elected Officials/Political Committee:** This team includes representatives of the District's cities, Hennepin County, Minneapolis Parks and Recreation Board, State and Federal congressional representatives, and the MCWD Board. This group will meet quarterly beginning in the 4<sup>th</sup> quarter of 2004 to explore the political feasibility of proposals and will submit the final recommendations to the MCWD Board. A resolution indicating support is currently being circulated to affected political stakeholders for signature.

**iv. Printed Communications/Media:** The MCWD's website will include a page related to the study. The Watershed District's newsletters will be used to communicate information as the study progresses. Press releases will be issued on an as-needed basis.

**9.3. Study Briefings and Fact Sheets:** Study briefings will be provided and fact sheets prepared throughout the study period for congressional representatives, State and local officials, and others, as appropriate.

**10. CHANGE MANAGEMENT PLAN:** Changes to this PMP should be directed through the Project Manager. Substantial changes will be made to the PMP when PDT members or other stakeholding parties incur issues. The new PMP will be communicated through the Project Manager to the PDT via email or from direct interaction (face-to-face meetings). Examples of when the PMP will be revisited include:

- Changes of more than 10 percent are identified in the federal funding stream,
- When a discipline or functional area’s milestone in the project schedule is delayed by more than 1 month,
- Or when an individual or discipline identifies that the projected budget for their product will be exceeded.

**11. PRODUCT DELIVERY TEAM:**

<u>Name</u>	<u>Function</u>
Aaron Snyder	Project Manager
Dan Reinartz	Hydrology and Hydraulics
Neil Schwanz	Goetechnical
Rick Carlson	Economist
Byron Williams	Geographic Information Systems
Rick Femrite	Cost and Estimating
Kevin Bluhm	Public Involvement Specialist
Dave Ballman	Real Estate Appraisal/Acquisition
John Shyne	Environmental
Brad Perkl	Social, Cultural, Archaeology
Doug Bruner	Hazardous/Toxic Waste
Jim Noren	Water Quality
Tony Fares	Structural Design
Mark Davidson	Public Affairs Office
Doris Sullivan	Landscape Architect/Layout/Recreation
Tim Smith	Advisor, Watershed Planning
Dawn Linder	Contracts
Thomas Koopmeiners	Small Business Office
Judy Marshall/Aaron Snyder	CEFMS and P2 Support
Mike Wyatt	Minnehaha Watershed District Planner
Julie Westerlund	Minnehaha Watershed District, Communications & Education Coordinator

Executive Committee

Judy DesHarnais	Deputy for Programs and Project Management, St. Paul District, Army Corps of Engineers
Eric Evenson	District Administrator, Minnehaha Creek Watershed District

**12. CUSTOMER INVOLVEMENT:** The Watershed District has assigned a project manager to the project who is coordinating the effort closely with the Corp’s project management team. The sponsor has an in-house public affairs team that will be working closely with the Corps with public information and involvement (see **Section 9.0**). The sponsor’s computer modeling department will also be working closely with the Corps to

develop the various computer models. These services (and others) will be provided as In-Kind services.

**12.1. In-kind Services, General Tasks:** The Sponsor's non-Federal contribution is being provided as 100 percent In-Kind Services. In-Kind Services are locally provided services and/or supplies that the sponsor may use for their cost share of the feasibility study. Guidelines that determine when in-kind services are applicable include any of the following: 1) they provide value added to the product and/or 2) they are a method of completing necessary work in support of the feasibility study faster, cheaper, or more efficiently.

The November 2002 Project Study Plan (PSP, see **Reference 3.L.**) lists negotiated In-Kind Services distributed among five tasks. Those general tasks have been reviewed and revised/updated for this PMP and include the following.

**Task A: Collect, Compile and Evaluate Existing Plans and Studies.** Existing plans, studies and reports will be evaluated to identify gaps in data and the need for additional studies in support of the feasibility study. Data from existing reports will be updated and provided on request.

**Task B: Develop/Configure a GIS-based Decision-Making Model.** A GIS-based model(s) will be developed/configured to assist with a scenario-based analyses of the study area for evaluating existing and future conditions. Efforts will be made to gather information regarding rainfall/runoff characteristics and the various coverages related to the ecology, geography, floodplain, land uses, etc. for the study area. Analyses will be performed to assist in the identification of potential projects and project sites, evaluate project features, and for screening alternatives. These efforts will involve work/modeling associated with, for example: rainfall-runoff, existing and proposed developments, water management infrastructure, floodplains, existing and future land use, sensitive resources, cultural and historical sites, watershed stability, streambank stability, water level management, floodplain restoration and protection, and watershed-wide and site-specific evaluations. Maps and other GIS products will be developed to assist in presenting and communicating project information to the public and in the reports.

**Task C: Water Quantity/Quality, Creek Stability and Habitat Assessment, Wetland Function and Environmental Systems Studies and Modeling.** Studies and/or models analyzing hydrologic, hydraulic and water quality issues, creek, wetland and environmental assessments, and other watershed issues, will be developed or updated/revised in support of the feasibility study. The studies/models will accelerate elements of the study for inclusion in the Feasibility Report. The effort will also examine, for example, fish and wildlife habitat, land use, floodplain issues, water quantity/quality, sediment, erosion/stability, ecological function, wetland function, flood damages, water management infrastructure, and recreational facilities and facility needs. Studies to fill data voids and evaluate/model the existing conditions and predict future conditions will be conducted as necessary.

The sponsor will provided detailed analyses and data for the Painters Creek corridor and associated wetland complex. The Painters Creek assessment will involve data collection and assessment, preliminary design data, public involvement/stakeholder sessions and project alternative analyses.

**Task D: Project Management Support, Comprehensive Watershed Management Plan Development, Feasibility Study Plan Formulation and Feasibility Report Input.** The USACE and MCWD project managers will jointly lead the project team and

execute the feasibility study through the development of a Comprehensive Watershed Management Plan by following the federal six-step planning process.

Project Management/Plan Formulation activities include frequent coordination with technical elements, response to congressional or other study related inquiries, and maintaining open dialogue with stakeholders/agencies. The MCWD will participate in, and provide input to, checkpoint conferences (e.g. IPR, FSM and AFB) during the course of the study.

The MCWD will facilitate coordination and information sharing through establishing and maintaining a project intra/internet site/page. This will facilitate ease of information sharing between team members, the MCWD, and interested individuals and assist in timely completion of tasks being conducted concurrently at numerous sites. The web site will be developed to include such information as study schedule, draft products reports, site photographs, maps, etc.

The MCWD will assist in developing the federal Feasibility Report. This task includes all study related documentation, assembling, writing, editing, typing, drafting, reviewing, reproducing, and distributing study phase status reports, the preliminary draft, and draft feasibility report and the associated environmental, real estate, and engineering appendices and supplements.

#### **Task E: Develop a Public Involvement/Communication Plan.**

A public involvement/communication plan will be developed by the MCWD that recognizes the importance of public participation and the diversity of interests surrounding the study area. Some of the elements are:

- Establish project management structure.
- Develop a strategy to form the appropriate Policy, Citizen, Technical advisory groups.
- Identify stakeholders and keep them informed of project progress, issues and opportunities to provide input.
- Agree on the issues to be addressed in during the study process
- Conduct a stakeholder workshop to identify key issues.
- Identify tools and techniques such as newsletters, focus groups, charrettes for public involvement and the preferred timing as to when they would be applied.

Refinements of the communications plan will be made as the study evolves for each project element to respond to issues raised by stakeholders. A summary of the plan is included in **Section 9.0**. Refinements to the scope of this plan are currently in progress.

**12.2. In-kind Services, Available Expenditures Estimate:** The total estimated project cost is \$4,110,508 (see **Section 14.0**). This total will be cost shared 50/50 with the local sponsor. Both the federal and non-federal shares will be \$2,055,254 (see **Section 4.0** for the assumptions related to this cost). The potential In-Kind expenditures for the study period are listed in **Table 12-1**.

**12.3. In-kind Services, Scope of Work/Proposals:** As the study progresses and the team (including the sponsor) refines the potential In-Kind work, the Watershed District will develop scopes of work/proposals for In-Kind service credit. The Corps

project delivery team will review the proposals for applicability to the study and closely review and monitor the work. Additional proposals will be developed in the third quarter of FY2006, with other additions developed as necessary each quarter during the course of the study.

<b>Table 12-1 Minnehaha Creek Watershed Planning Study Potential In-Kind Services</b>	
<b>Title/Description</b>	<b>Estimated Cost</b>
Development and refinement of the GIS-based H&HPLS Model to include XP-SWMM and P-Load modules.	\$160,000
Modify XP-SWMM model to produce period of record inflows to Lake Minnetonka for RES-SIM and incremental flows for the subbasins	\$55,000
Compile GIS, water quality, precipitation and stream flow data for watershed modeling	\$28,000
Compile a functional assessment of wetlands in the watershed	\$22,000
Analyze the stability and assess the habitat and ecosystem within Minnehaha Creek	\$325,000
Analyze the ecosystem restoration potential of Painters Creek/Jennings Bay and the associated wetland complexes	\$315,000
Develop and execute a public education and communications plan to include public, technical and political committee meetings	\$205,000
Analyze problems and opportunities related to wetland restoration Formulate, compare and evaluate alternative plans	\$55,000
Analyze problems and opportunities related to ecosystem restoration and other misc. (special) projects, formulate, compare and evaluate alternative plans	\$55,000
MCWD Comp Watershed Management Plan (CWMP) Revision, Watershed District general staff support for updating the CWMP	\$200,000
Watershed District general staff support for developing the Federal Feasibility Study Report	\$200,000
Watershed District Project Management Support for updating the CWMP and developing the Federal Feasibility Report	\$170,000
<b>Total In-Kind Services (estimated)</b>	<b>\$ 1,790,000</b>
<b>15 Percent Contingency</b>	<b>\$ 265,254</b>
<b>Total</b>	<b>\$ 2,055,254</b>

### 13. SCOPE OF WORK BY DISCIPLINE:

**13.1. Planning, Programs and Project Management Division (PM):** The division will assign a Project Manager to be responsible for reporting to the Project Review Board and to prepare required planning reports.

**13.2. Project Management:** The Project Manager will be responsible for monitoring project schedules and finances, processing schedule and cost change requests, reviewing budget documents, coordinating preparation of the Project Cooperation Agreement (PCA), and identifying and resolving problems and issues. Further, the Project Manager serves as the project planner with responsibility for performing study management activities, including: leading the study team, plan formulation, public involvement, preparing study schedules, monitoring the progress of technical work, and developing and preparing the feasibility report.

**13.3. Natural Resources:** The Environmental team member will be responsible for assessing environmental impacts, coordinating ecosystem restoration studies and accomplishing NEPA and cultural resource compliance activities. Natural Resources will

conduct the necessary NER calculations and facilitate the Fish and Wildlife Service Coordination Act requirements.

**13.4. Economics:** The Economics team member will be responsible for conducting the required economic analyses and financial analysis for any environmental restorations as well as providing inputs to the Environmental Assessment/Environmental Impact Statement.

**13.5. Geographic Information Systems:** The Geographic Information Systems team member will provide maps, information for public involvement, and quantification of changes, along with other relevant information.

**13.6. Social/Cultural:** Social and Cultural issues of the study will be addressed by providing the necessary analysis to identify and determine which social and cultural issues are located within the project area.

**13.7. Public Affairs Office/Public Involvement:** The Corps' Public Affairs Office (PAO) and Public Information Specialist (PIS, from PM-E), in cooperation with the Watershed District's PAO, will be responsible for releasing public information to media entities and organizing stakeholder meetings.

**13.8. Hydrology and Hydraulics:** The Hydrology and Hydraulics Branch will be responsible for conducting hydrologic, hydraulic and water quality design studies.

**13.9. Design Branch:** The Design Branch will be responsible for developing designs and drawings, conducting structural investigations, and developing cost estimates for initial construction and operation and maintenance of alternative plans, and the selected plan.

**13.10. Engineering Technical Services:** The Engineering Technical Services Branch will be responsible for surveying and mapping activities.

**13.11. Real Estate Division:** The Real Estate Division will be responsible for performing all required real estate activities for the project.

**13.12. Recreation:** Recreation analyses will be conducted by representatives from PM-E and ED-D (landscape design).

**14. BUDGET BY DISCIPLINE:** The schedule for completing this feasibility study is a function of manpower, funding availability, and the physical limits of completing and coordinating tasks associated with the study. At this time, the following scenario of expenditures by fiscal year is anticipated. However, a review and updating of the PMP/QCP will be done with the Sponsor and PDT inputs each fiscal year to determine if funding or scope of work changes will affect the expected expenditures for the upcoming fiscal year. The assumptions inherent in this cost estimate are discussed in **Section 4.0**. **Table 14-1** lists the budget by fiscal year and **Table 14-2** lists the budget by function. The sponsor is cost sharing the study 50/50 with their share being provided as 100 percent In-Kind services (see **Section 12.0**).

**Table 14-1  
Minnehaha Creek Watershed Planning Study  
Target Budget by Fiscal Year (FY=Oct. 1 thru Sept. 30)**

<b>Discipline</b>	<b>Fiscal Year</b>	<b>Budget</b>	<b>Sub-Total</b>	<b>Total + 15% Contingency</b>
All Disciplines combined	2003		\$ 83,000	\$ 83,000
PM-A	2004	90,263		
PM-E (Enviro, Cultural, Econ, GIS, PI)	2004	26,669		
PM-E (Public Involvement)	2004	4,445		
ED-H (Hydrology, Water Quality)	2004	15,386		
ED-D	2004	39,866		
RE	2004	2,872	\$ 179,500	\$ 179,500
PM-A	2005	85,100		
PM-E (Enviro)	2005	52,300		
PM-E (Public Involvement)	2005	15,100		
PM-E (Cultural)	2005	0		
PM-E (Econ/Social/Rec)	2005	0		
PM-E (GIS)	2005	16,900		
ED-H (Hydrology, Hydraulics)	2005	131,300		
ED-H (Water Quality)	2005	0		
ED-D (HTRW)	2005	0		
ED-D (Structures)	2005	0		
ED-D (General Eng, Landscape Design)	2005	0		
ED-D (Cost Engineering)	2005	0		
ED-D (Geotechnical)	2005	0		
RE	2005	0		
ITR	2005	0	\$ 300,700	\$ 300,700
PM-A	2006	40,000		
PM-E (Enviro)	2006	10,000		
PM-E (Public Involvement)	2006	0		
PM-E (Cultural)	2006	0		
PM-E (Econ/Social/Rec)	2006	0		
PM-E (GIS)	2006	0		
ED-H (Hydrology, Hydraulics)	2006	25,000		
ED-H (Water Quality)	2006	0		
ED-D (HTRW)	2006	0		
ED-D (Structures)	2006	0		
ED-D (General Eng, Landscape Design)	2006	0		
ED-D (Cost Engineering)	2006	0		
ED-D (Geotechnical)	2006	0		
RE	2006	0		
ITR+ Printing draft report = \$1500	2006	0	\$ 75,000	\$ 75,000
PM-A	2007	90,000		
PM-E (Enviro)	2007	16,000		
PM-E (Public Involvement)	2007	9,000		
PM-E (Cultural)	2007	16,000		
PM-E (Econ/Social/Rec)	2007	40,200		
PM-E (GIS)	2007	10,000		
ED-H (Hydrology, Hydraulics)	2007	125,000		
ED-H (Water Quality)	2007	0		

**Table 14-1, cont'd**  
**Minnehaha Creek Watershed Planning Study**

ED-D (HTRW)	2007	18,500		
ED-D (Sturctures)	2007	4,000		
ED-D (General Eng, Landscape Design)	2007	10,000		
ED-D (Cost Engineering)	2007	5,000		
ED-D (Geotechnical)	2007	2,000		
RE	2007	15,000		
ITR + Printing final report = \$1500	2007	25,000	\$ 385,700	\$ 443,555
PM-A	2008	100,000		
PM-E (Enviro)	2008	35,000		
PM-E (Public Involvement)	2008	18,300		
PM-E (Cultural)	2008	40,000		
PM-E (Econ/Social/Rec)	2008	27,100		
PM-E (GIS)	2008	5,000		
ED-H (Hydrology, Hydraulics)	2008	75,000		
ED-H (Water Quality)	2008	0		
ED-D (HTRW)	2008	3,100		
ED-D (Sturctures)	2008	15,200		
ED-D (General Eng, Landscape Design)	2008	75,200		
ED-D (Cost Engineering)	2008	50,100		
ED-D (Geotechnical)	2008	29,800		
RE	2008	53,000		
ITR + Printing final report = \$1500	2008	36,500	\$ 563,300	\$ 647,795
PM-A	2009	90,000		
PM-E (Enviro)	2009	10,000		
PM-E (Public Involvement)	2009	6,000		
PM-E (Cultural)	2009	7,900		
PM-E (Econ/Social/Rec)	2009	5,800		
PM-E (GIS)	2009	1,000		
ED-H (Hydrology, Hydraulics)	2009	60,000		
ED-H (Water Quality)	2009	0		
ED-D (HTRW)	2009	1,000		
ED-D (Sturctures)	2009	1,000		
ED-D (General Eng, Landscape Design)	2009	5,000		
ED-D (Cost Engineering)	2009	10,000		
ED-D (Geotechnical)	2009	2,000		
RE	2009	5,000		
ITR + Printing final report = \$1500	2009	16,500	\$ 221,200	\$ 254,380
Total FY2003 thru 2009			\$ 1,808,400	\$ 1,983,930
15% Contingency on FY07, 08 and 09 total			\$ 1 75,530	
5.3% Inflation on FY07, 08, and 09 total (w/contingency)			\$ 71,324	
<b>Grand Total FY 2003 thru 2009:</b>			<b>\$ 2,055,254</b>	
<b>Sponsors Cost, In-Kind Cost Share (see Section 12.0)</b>			<b>\$ 2,055,254</b>	
<b>Total Study Cost</b>			<b>\$ 4,110,508</b>	

<b>Table 14-2</b>								
<b>Minnehaha Creek Watershed Planning Study</b>								
<b>Target Budget by Function (FY=Oct. 1 thru Sept. 30)</b>								
	2003	2004	2005	2006	2007	2008	2009	Total
Sunk Costs	83,000	179,500						<b>262,500</b>
PM-A			85,100	40,000	90,000	100,000	90,000	<b>405,100</b>
PM-E Enviro			52,300	10,000	16,000	20,000	5,000	<b>103,300</b>
PM-E Enviro FWS						15,000	5,000	<b>20,000</b>
PM-E Pub Inv			15,100		9,000	18,300	6,000	<b>48,400</b>
PM-E Cultural					16,000	40,000	7,900	<b>63,900</b>
PM-E Econ Instit Studies						3,000	400	<b>3,400</b>
PM-E Econ Social Anal						3,900	400	<b>4,300</b>
PM-E Econ Anal					40,200	20,200	5,000	<b>65,400</b>
PM-E GIS			16,900		10,000	5,000	1,000	<b>32,900</b>
ED-H H+H WQ			131,300	25,000	125,000	75,000	60,000	<b>416,300</b>
WQ is in ED-H								-
ED-D (Haz Toxic RemovalWaste)					18,500	3,100	1,000	<b>22,600</b>
ED-D (Sturctures)					4,000	15,200	1,000	<b>20,200</b>
ED-D (General Eng, Landscape Design)					10,000	75,200	5,000	<b>90,200</b>
ED-D (Cost Eng)					5,000	50,100	10,000	<b>65,100</b>
ED-D (Geotechnical)					2,000	29,800	2,000	<b>33,800</b>
RE (RE Apprais + Acquisition Input)					15,000	53,000	5,000	<b>73,000</b>
ITR + Printing draft report = \$1500					25,000	36,500	16,500	<b>78,000</b>
Subtotals:	83,000	179,500	300,700	75,000	385,700	563,300	221,200	<b>1,808,400</b>
Add 15% cont. on FY07, 08, and 09					57,855	84,495	33,180	<b>175,530</b>
Add 5.3% inflation FY07, 08, and 09					23,508	34,333	13,482	<b>71,324</b>
<b>Grand Total FY 2003 thru FY 2009</b>								<b>2,055,254</b>
<b>Sponsors Cost, In-Kind Cost Share (1)</b>								<b>2,055,254</b>
<b>Total Study Cost</b>								<b>4,110,508</b>
(1.) See Section 12.0 for In-Kind credits.								

**15. MILESTONES AND REVIEW SCHEDULE:** The milestones and schedule are summarized below. See Section 4.0 for the assumptions used to develop the schedule. A Gantt Chart depiction of the original schedule can be found in Table 15-1, where the shaded blocks indicate completed work, while white blocks indicate work yet to be done. It is assumed that an Environmental Impact Statement to satisfy NEPA requirements will be needed.

FCSA Signed	January 2003
Convene Executive Committee	July 2004
In-Progress-Review Meeting	July 2004
Begin Public Meetings	August 2004
Publish EIS Notice of Intent	October 2004
Develop CWMP input	Oct 2004 thru June 2005
Feasibility Scoping Meeting (FSM)	December 2005
Fed Interest Proj. Anal. Complete	June 2006
MCWD Completes the CWMP	July 2006

Analyze Projects with Fed Interest	Mar 2005 thru March 2006
EIS Notice of Availability	October 2006
AFB meeting, Prel. Drft Report	September 2006
Public/Agency Review Drft Rpt	October 2006
Send Final Report to Division	July 2007
District Engineers Public Notice	September 2007
EIS Record of Decision Signed	TBD
Congress Authorizes next Phase	TBD

Table 15-1 Minnehaha Creek Watershed Planning Study, Milestones and Target Schedule (Federal FY =Oct. 1 thru Sept. 30)																																			
Activities	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008																		
	3 <sup>rd</sup> Qtr		4 <sup>th</sup> Qtr		1 <sup>st</sup> Qtr		2 <sup>nd</sup> Qtr		3 <sup>rd</sup> Qtr		4 <sup>th</sup> Qtr		1 <sup>st</sup> Qtr		2 <sup>nd</sup> Qtr		3 <sup>rd</sup> Qtr		4 <sup>th</sup> Qtr																
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
Major Milestones	PMP IPR								From 11 Alt Plans Narrow to 3 Projects		Eval Final 3 Projects, FSM		Prep Drft FR/EIS		AFB						Final FR/EIS		DE Pub Notice												
PM-A Proj Man	Exec Co.				PM						PM								PM																
PM-E Environ	Plan Form	Field Work			Field Work			Eval Enviro for CWMP		Eval Final 3 Projects, FWS Coord.				Resolve Draft Rpt/EIS Comments, Prepare Final Feas/EIS Report, FWS Coord.																					
PM-E Pub Involve					Mtgs	Mtgs		Mtgs		Mtgs		Mtgs						Mtgs																	
PM-E Cultural					General Lit Review		In Depth Lit Rev		MN SHPO		Phase 1		Phase 2		Resolve Drft Rpt/EIS Cmts																				
PM-E Econ/Social							Econ Ben 11 Pln				Econ 3 plans		Soc/EA/ Fin/Eco		Resolve Drft Rpt/EIS Cmts																				
PM-E GIS					GIS								GIS						GIS																
ED-H H + H	Coord W MCWD on XP model				Develop Dis-Freq Curves, Res-Sim Model, Flow Dur Curves, Detention Ponds, Storm Sewer, Provide Input to CWMP Rpt				Eval Dam Removal, Creek/Wetland corridor restos, run EFM, Feas Rpt input				Resolve Draft Report/EIS Comments, Prepare Final Feas/EIS Report																						
ED-H Water Qual					Plan Form	Field Work	Field Work			Eval WQ for CWMP	Eval Final 3 Projects		Resolve Draft FR/EIS Report Comments, Prepare Final Feas/EIS Report																						
ED-D Haz TRW					HTRW Phas 1								Resolve Draft Report/EIS Comments, Prep Final Rpt																						
ED-D (Structures)									Structural Design Work				Ditto																						
ED-D Gen Eng									General Engineering, Landscape				Ditto																						
ED-D Cost Eng											Cost	Cost	Ditto																						
ED-D Geotech					Geot				Geot				Ditto																						
RE Real Estate					Cost Est based on Prelim maps						Gross Appr + Cost Est	Complete REP	Resolve Draft Report/EIS Comments, Prepare Final Rpt																						
ITR + Printing Reports					ITR Review and Tour of basin				ITR Review of Plans				ITR Review of Drft Report				ITR Review of Final Rpt/EIS																		
Minnehaha Creek Watershed District Milestones, PM efforts throughout	Modify XP-SWMM Calc Inflows to Lake Minnetonka + lower basin flows		Computer Modeling Support, PM Coordination		Corps Provides Input to CWMP		PM Coord		PM Coord	PM Coord	PM Coord	Comprehensive Watershed Man Plan given to board for Review		PM Coord	Budget Approved for WMP 2007-17	PM Coord	Finalize CWMP	Jan New CWMP Plan is in Effect																	
Public Meetings See Section 9.0	1 <sup>st</sup> , 2 <sup>nd</sup> Aug/Sep		3 <sup>rd</sup> Mtg Nov	4 <sup>th</sup> 5 <sup>th</sup> Jan/Mar	6 <sup>th</sup> Mtg June	7 <sup>th</sup> 8 <sup>th</sup> Jul/Sept	9 <sup>th</sup> 10 <sup>th</sup> Oct/Dec	12 <sup>th</sup> Mtg Feb																											
Tech Committee			Meeting	Meeting	Meeting	Meeting	Meeting	Meeting					Meeting			Meeting																			
Elected Officials			Meeting	Meeting	Meeting	Meeting	Meeting	Meeting					Meeting			Meeting																			

**16. DELIVERABLE AND PREREQUISITE SCHEDULE: TBD**

**17. STATEMENT OF APPROVAL:** This PMP has been coordinated with the PDT and the appropriate functional chiefs of ED, PM, and RE, has been adjusted based on resolution of comments received, and has been approved. I hereby approve this Project Management Plan/Quality Control Plan.

Approved by:

\_\_\_\_\_  
Aaron Snyder  
Project Manager

Enclosure 1

## Minnehaha Creek Dam Removal- Estimate Criteria

- 1) Assumed dimensions of the dam and the materials the dam is constructed of.  
**Concrete-Assume: 30' wide, 5' deep, 6' wide**
- 2) How much of the dam will be removed (removal limits) - main body of dam (**yes**), superstructure (**none**), foundation (**yes**), abutments (**yes**), embankments (**none**), overflow spillways (**none**)...other items, such as signs, approach roads or trails, bulkhead storage buildings (**none**).
- 3) Material salvage. Are any of the materials valuable enough to be salvaged? (Such as gates)  
**Assume None-no gates**
- 4) Access to the site. Is access easy and close to a road? Will a road have to be constructed?  
**Assume easy access-Close to road**
- 5) Site Repair. How much repair will be required afterward (grading and turfing, pavement repair, replanting of trees or other vegetation removed to allow access).  
**~200' long access road**
- 6) Location in relation to disposal areas for removed material. What will haul distances be?  
**Within 30 miles one way**
- 7) Traffic control. If the dam is in an urban area where the only access is off a busy street, there may be specific traffic control considerations. At a minimum, there will be road signs required.  
**It is an urban area. ~ 4 days of traffic control**
- 8) Designed restoration. If a dam is removed, there will likely be some type of erosion protection required to protect the exposed soils.  
**Backwater pool = ~2500' long, ~20' wide. Sediment ~3' deep. Assume existing weir elevation/crest is maintained, no removal of sediment, convert weir to a "rapids" to encourage fish passage.**  
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Enclosure 1